



Solar Power Enterprises: Bringing Sustainable Energy to Rural Begusarai

(Swatantra Kumar and *Anubha)

Department of Rural Management, Ganga Global Institute of Management Studies,
Ramzanpur, Begusarai, Bihar, India

*Corresponding Author's email: anubhaggims@gmail.com

Rural areas across India, particularly in states like Bihar, lack of reliable electricity infrastructure has severely restricted the region's socio-economic development, leaving large sections of the population dependent on traditional energy sources such as firewood, kerosene, and diesel. However, the emergence of solar power enterprises has provided a viable solution to these energy challenges, offering a clean, sustainable, and scalable energy source that can transform rural economies. This article explores how solar power enterprises are crucial in bringing sustainable energy to rural Begusarai. It examines the socio-economic benefits these enterprises offer, the challenges they face, and the potential for scaling up solar energy projects in the region.



PM Surya Ghar: Muft Bijli Yojana

The government is proactively working on its commitment to sustainable energy goals. PM Surya Ghar: Muft Bijli Yojana is a government scheme. Aim: to install solar rooftops on 1 crore households and 300 units free electricity every month. Current status: 2.5 lakh solar rooftop installed all over India. Achievements of other states in solar rooftop installation under pm suryaghar:

Gujrat: 70,000+ installations

Maharashtra: 26,012+ installations

Uttar Pradesh: 25,000+ installations

Rajasthan: 1275+ installations

Bihar: 766 installations

The Government of India has approved the PM Surya Ghar Muft Bijli Yojana on **29th February, 2024** to increase the share of solar rooftop capacity and empower residential households to generate their own electricity. The scheme has an outlay of **Rs 75,021 crore** and is to be implemented till **FY 2026-27**. The scheme will be implemented by a National programme Implementation Agency (NPIA) at the National level and by the State Implementation Agencies (SIAs) at the state level. Sustainability refers to the ability to maintain or support a system or activity without depleting natural resources or causing harm to the environment & ensuring a healthy planet for future generation. Sustainable energy goal is to reduce our reliance on finite resources, decrease greenhouse emissions, and mitigate climate change.

Energy Challenges in Rural Begusarai

Begusarai, like many rural districts in Bihar, faces numerous challenges related to energy access. Despite the government's electrification programs, many villages in the district either remain unelectrified or experience erratic power supply. Even in areas connected to the grid, frequent outages and voltage fluctuations render the electricity supply unreliable. This situation is exacerbated by high poverty rates, limited industrialization, and low agricultural productivity—all of which are tied to the lack of consistent energy.

The Promise of Solar Power

Solar power offers a promising solution to Begusarai's energy. The region's geographic location ensures ample sunlight throughout the year, making it an ideal candidate for solar energy projects. Unlike conventional energy sources, solar power is renewable, environmentally friendly, and, once installed, relatively inexpensive to maintain.

Impact on Rural Communities

The socio-economic impact of solar power enterprises on rural Begusarai has been significant. The availability of reliable electricity has transformed various aspects of rural life, from education and healthcare to agriculture and small businesses.

1. **Education:** One of the most immediate benefits of solar power is the improvement in education. With solar-powered lighting, students in rural areas can study in the evening without relying on kerosene lamps, which are not only costly but also hazardous to health. This has led to improved academic



performance and a more conducive learning environment. Schools equipped with solar panels are also able to run computers and other educational technologies, giving students access to modern learning tools

2. **Healthcare:** Solar power has also had a positive impact on healthcare services in rural Begusarai. Clinics that were once hampered by unreliable electricity now have a consistent power supply, enabling them to store vaccines, run medical equipment, and provide better healthcare services. Solar-powered lighting in healthcare facilities allows doctors to treat



patients at night, improving health outcomes for the local population. Solar power can reduce electricity bills for healthcare facilities solar energy is a renewable energy source that can help reduce a hospital's carbon footprint.

3. **Agriculture:** For farmers, solar power has been a game changer. Solar-powered irrigation systems have reduced the dependency on diesel-powered pumps, lowering costs and providing a more reliable water supply for crops. This has led to increased agricultural productivity,



enabling farmers to grow more crops throughout the year. Solar energy has also enabled the use of cold storage units, which helps in reducing post-harvest losses by allowing farmers to store their produce for longer periods. Solar energy can help improve crop yields, especially in hot or dry areas

4. Small Businesses: Small businesses, including local shops and workshops, have benefited from solar power as well. Reliable electricity has allowed these businesses to operate more efficiently and extend their working hours. Entrepreneurs who previously relied on costly and unreliable diesel generators now have a steady power source, enabling them to expand their operations and increase their income. Solar panels on a business's roof can normalize the prevalence of solar panels, which can encourage customers to incorporate them in their own homes or businesses.



Challenges Facing Solar Power Enterprises

While solar power enterprises have made considerable progress in rural Begusarai, they face several challenges that limit their ability to scale up operations and reach more communities.

1. Financial Constraints: One of the biggest challenges is the high upfront cost of solar installations. While solar power is relatively inexpensive to maintain once operational, the initial investment required to purchase and install solar panels, batteries, and inverters can be prohibitive for low-income households and small businesses. Although some enterprises offer financing options or government subsidies, the process can be cumbersome, and not all families are eligible for assistance.

2. Regulatory Barriers: Solar power enterprises must navigate a complex web of regulations, permits, and policies that vary by region. In many cases, these regulations are outdated or poorly enforced, making it difficult for companies to expand their operations. Additionally, a lack of clear policy frameworks and incentives for renewable energy projects can deter potential investors and entrepreneurs from entering the solar power market.

3. Logistical Issues: Installing and maintaining solar power systems in remote rural areas presents logistical challenges. Poor road infrastructure, limited transportation options, and a lack of skilled technicians in rural areas can increase the costs and time required to deploy solar projects. Enterprises often struggle to provide ongoing maintenance and support to their customers, particularly in remote villages.

4. Awareness and Education: Despite the many benefits of solar power, there is still a lack of awareness among rural populations about how solar energy works and how it can improve their lives. Many people are hesitant to adopt solar technology due to misconceptions about its reliability, cost, and effectiveness. Solar power enterprises must invest in education and outreach programs to raise awareness and build trust within rural communities.

The Way Forward: Scaling Up Solar Power in Rural Begusarai

To overcome these challenges and maximize the potential of solar energy in rural Begusarai, several steps need to be taken.

First, government policies should be reformed to provide more robust financial incentives for solar power projects, particularly in rural areas. Streamlining the regulatory process and offering subsidies or low-interest loans to households and businesses can help reduce the financial barriers to adoption.

Second, public-private partnerships can play a crucial role in scaling up solar energy projects. By collaborating with local governments, non-governmental organizations (NGOs),

and financial institutions, solar power enterprises can pool resources and expertise to reach more communities and provide comprehensive energy solutions.

Benefits

Suitable Rooftop Solar Plant Capacity for households

Average Monthly Electricity Consumption (units)	Suitable Rooftop Solar Plant Capacity	Subsidy Support
0-150	1-2 kW	₹ 30,000/- to ₹ 60,000/-
150-300	2-3 kW	₹ 60,000/- to ₹ 78,000/-
> 300	Above 3 kW	₹ 78,000/-

List of Solar Panel Dealers with Ratings in Begusarai

- Helpx Home Service. 4.03 Ratings. ...
- Asia Enterprises. 4.49 Ratings. ...
- Pioneer Enterprises Co. 4.211 Ratings. ...
- Amit Battery Company. 4.413 Ratings. ...
- Gleditsia Energy Media Pvt. Ltd.
- Selco solar light pvt ltd. 5.05 Ratings. ...
- Gautam Enterprises. 4.53 Ratings. ...
- Satyam Solar House. 4.02 Ratings.

Conclusion

Solar power enterprises hold immense potential to transform the energy landscape of rural Begusarai, providing a clean, sustainable, and reliable energy source that can drive socio-economic development. While challenges remain, the benefits of solar energy—improved education, healthcare, agriculture, and economic growth.

‘पीएम सूर्य घर मुफ्त बिजली योजना’

क्या आप बिजली बिल से है परेशान
सोलर लगाए, बिजली बिल बचायें, सब्सिडी पायें

अपनी आवेदन की स्थिति जानने या आवेदन हेतु आज ही संपर्क करें।

- बिजली बिल 90% शून्य होता है 27/वर्षों तक
- सब्सिडी भी पायें 3KW तक 78000/-
- लोन की सुविधा उपलब्ध ।
- 3 से 4 साल में लागत मूल्य वापस ।



OUR SERVICES
On - Grid
Off - Grid
Hybrid

विद्युत क्षमता	1 .KW	2.KW	3 .KW	4 .KW	5 .KW	6 .KW	7 .KW	8 .KW	9 .KW	10 .KW
सोलर पैनल /MONO ऑनग्रिड इन्वर्टर	540WP/2 PC	540WP/4 PC	540WP/6 PC	540WP/8 PC	540WP/10 PC	540WP/12 PC	540WP/13 PC	540WP/15 PC	540WP/17 PC	540WP/19 PC
DCDB/ ACDB	1KW	2KW	3KW	4KW	5KW	6KW	7KW- IIIPH	8KW-III PH	9KW-III PH	10KW-III PH
EARTHING	1PC	1PC	1PC	1PC	1PC	1PC	1PC	1PC	1PC	1PC
LA	1PC	1PC	1PC	1PC	1PC	1PC	1PC	1PC	1PC	1PC
कुल लागत +GST 12%	60000/	120000/	180000/	240000/	300000/	360000/	420000/	480000/	540000/	600000/
ग्राहक के खाते में सब्सिडी	30000/	60000/	78000/	78000/	78000/	78000/	78000/	78000/	78000/	78000/
REGISTRATION ON PAPER REQUIRE:	BIJLI BILL	ADHAR CARD	BANK PASSBOOK	CANCEL CHEQUE	सोलर इंस्टालेशन /प्रति किलोवाट 100 वर्ग फिट एरिया कवर करना है					