

# 7 AFFORDABLE AND CLEAN ENERGY



**University Measures Towards Affordable and Clean Energy** Affordable and clean energy is one of the top priorities at University. Our commitment is reflected in our teaching and research on clean and alternative energy sources. On campus, the University has made significant progress towards environmental sustainability through clean energy projects, waste management practices, energy conservation initiatives, and collaborations with stakeholders to positively impact the broader community. By focusing on sustainable, affordable, and clean energy, we address the urgent need to combat climate change and manage the world's increasing energy demands. Energy research remains one of our core priorities, and through our educational and research efforts, with external stakeholders, we are advancing forward-thinking approaches to clean energy.

Energy-Efficient Renovation and Building Have a policy in place for ensuring all renovations or new builds are following energy efficiency standards Response: Newly constructed buildings are energy efficient and GRIHA Compliant University has implemented standards and practices in the construction of its new buildings to ensure they are energy-efficient and sustainable, significantly reducing carbon footprint by supporting clean energy initiatives. The Indian Green Building Council (IGBC) developed the GRIHA (Green Rating for Integrated Habitat Assessment) system to evaluate the environmental performance of buildings across India. This system seeks to promote the design and construction of buildings using sustainable and energy-efficient methods. University's newly constructed building is GRIHA-certified, which indicates that it incorporates sustainable features and follows environmentally responsible practices. GRIHA emphasizes several key elements in its assessment.

To minimize energy consumption, the building incorporates energy-efficient technologies such as insulation, solar panels, and energy-saving lighting systems. Water resources can be managed more effectively, rainwater harvesting systems, and water-efficient fixtures. When planning and selecting the building's site, special attention should be given to accessibility to public transit, waste management systems, and green spaces, all of which help reduce pollution and create a healthier environment. The choice of building materials should consider the life cycle impact, prioritizing low-carbon, sustainable resources and minimizing waste production. Additionally, the building should ensure

excellent thermal comfort, natural lighting, and indoor air quality to provide a healthy and comfortable environment for occupants. GRIHA-certified university buildings incorporate these principles to create healthier spaces for staff and students, reduce their environmental impact, and promote sustainable development

## Solar Energy


The university's commitment to sustainable development shines through its integration of solar power systems into its infrastructure. A substantial portion of the power demand is met by the energy generated through solar cells. It's imperative to minimize reliance on conventional energy sources and transition towards renewable resources. Currently, the university boasts two different capacities of solar cells, producing 60 kWh at the Khandari Campus and 70 kWh at the Challesar Campus.

### University Solar Energy System

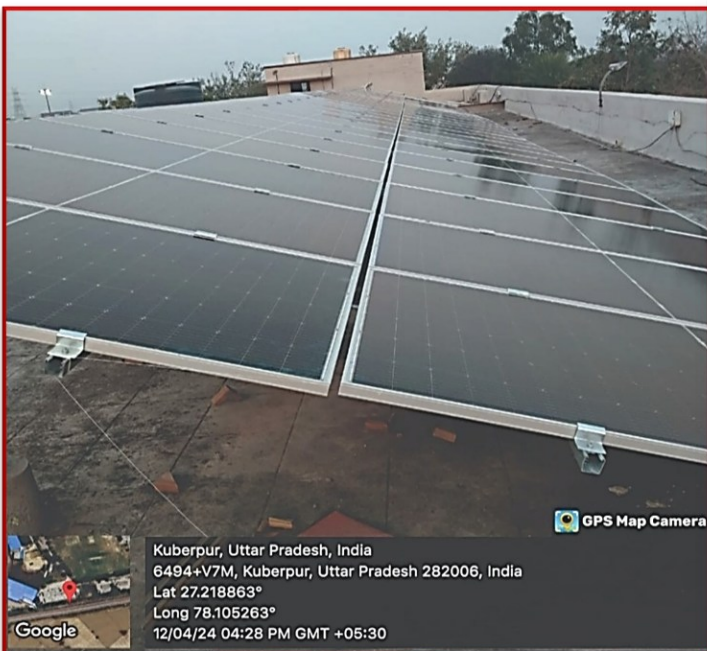


**Solar Power System  
University Campus – 60KWh**

*I.B.S.*


<b>Picture</b>	<b>Fixed Axis</b>	
<b>Capacity</b>	60 KW	
<b>Out put Units (KWp)</b>	240 Units	
<b>Application</b>	Solar power back up for existing electrical appliances viz., Tube lights, Fans, EPABx Computers, Printers etc., HVAC, Pumping etc.	
<b>Scope of Supply</b>	System includes 60 KWp Solar Module, GI modular support, 60 KW grid interactive Inverter	
<b>Solar Panel Wattage</b>	545 Wp	
<b>Battery Support</b>		
<b>Power Saving PM (Kwh)</b>	7,200* Units	
<b>Money saved PM / Year (EB unit cost assumed @9.00 Rs. )</b>	Rs. 64,800.00 / Rs 7,77,600.00	
<b>Warranty</b>	05 year for the system	
<b>Approx. system cost</b>	INR	
<b>Approx. system cost after depreciation benefits/Subsidy</b>	INR (Theoretically final investment cost if avail AD benefits)	
<b>AMC cost</b>	@ 2% per annum after 01 year	
<b>Payback with AD benefits</b>	3 Years	
<b>Life time Income</b>	INR	

**Solar Power System  
University Campus – 60KWh**



**Solar Power System  
University Campus – 70KWh**

*Chhalesar*

<b>Picture</b>	<b>Fixed Axis</b>	
<b>Capacity</b>	70 KW	
<b>Out put Units (KWp)</b>	280 Units	
<b>Application</b>	Solar power back up for existing electrical appliances viz., Tube lights, Fans, EPABx Computers, Printers etc., HVAC, Pumping etc.	
<b>Scope of Supply</b>	System includes 70 KWp Solar Module, GI modular support, 70 KW grid interactive Inverter	
<b>Solar Panel Wattage</b>	545 Wp	
<b>Battery Support</b>	200Ah 240V LIFEPO4	
<b>Power Saving PM (Kwh)</b>	8,400* Units	
<b>Money saved PM / Year (EB unit cost assumed @9.00 Rs. )</b>	Rs. 75,600.00 / Rs 9,07,200.00	
<b>Warranty</b>	05 year for the system	
<b>Approx. system cost</b>	INR	
<b>Approx. system cost after depreciation benefits/Subsidy</b>	INR (Theoretically final investment cost if avail AD benefits)	
<b>AMC cost</b>	@ 2% per annum after 01 year	
<b>Payback with AD benefits</b>	3 Years	
<b>Life time Income</b>	INR	

**Solar Power System  
University Campus – 70KWh**





**Sensor-Based Energy Conservation in University**

## **Plantation Drive**

Sensitizing students and employees to their responsibility for the environment through a plantation drive is a proactive step towards fostering ecological awareness and sustainable practices. By organizing such an event, participants are encouraged to recognize the crucial role they play in preserving and enhancing the environment for future generations. During the plantation drive, students and employees come together to plant trees, shrubs, or other vegetation in designated areas within the campus or surrounding community.



**Registrar - Dr. Rajeev Kumar and Prof. Manu Pratap Singh (Director of IET) are actively contributing to a plantation drive aimed at raising awareness about environmental conservation.**



## Ban on use of Plastic

The University annually observes World Environment Day on June 5th, raising awareness among staff and students. It has implemented a complete ban on single-use plastic items like bottles, bags, spoons, straws, and cups, with orientation sessions and display boards reinforcing awareness. Additionally, staff and students are encouraged to use steel or copper water bottles instead of plastic ones.



## Use of Bicycles/ Battery Powered Vehicles



The university encourages students and staff to utilize bicycles, allowing them to be kept on campus premises. Additionally, battery-operated vehicles are provided for differently abled students' transportation within the campus and for transporting luggage, guests, and others. Both faculty and students predominantly use battery-powered vehicles, contributing to sustainable mobility practices.



### Use of Battery Powered vehicles in the campus