The University of Burdwan

Initiative of Alternate Sources of Energy and Energy Conservation Measures

A rooftop photovoltaic power station, or rooftop PV system, is a photovoltaic system that has its electricity-generating solar panels mounted on the rooftop of a commercial building or structure. The University of Burdwan has a properly functioning Rooftop Solar PV Power plant with a capacity of 100 KW on the academic campus at Golapbag. On our initiation, an amount of Rs: 84,50,000.0 (Rupees: Eighty-four Lakh Fifty Thousand only) had been sanctioned from The Higher Education Department, The Government of West Bengal in the financial year 2014-2015 for installation of 100 KW rooftop PV system and the project was executed through West Bengal Government agency West Bengal Renewable Energy Development Agency (WBREDA). 75 KW system is installed on the roof of the Arts Composite Building and 25 KW on the roof of the Bengali department building at the Golapbag Academic campus. Solar power is directly used to meet the respective buildings' requirements. Thus, as a result, considerable usage of power is being saved in terms of money in addition to subsequent benefits like minimal technical losses as power consumption and co-located generation, better management of daytime peak load, low gestation period, lower distribution loss, improvement of tail-end grid voltage & reduction of system congestion, long term energy and ecological security by reducing in carbon emission, better management of day time peak load, reduction of about several tons of CO_2 per year over its life cycle.

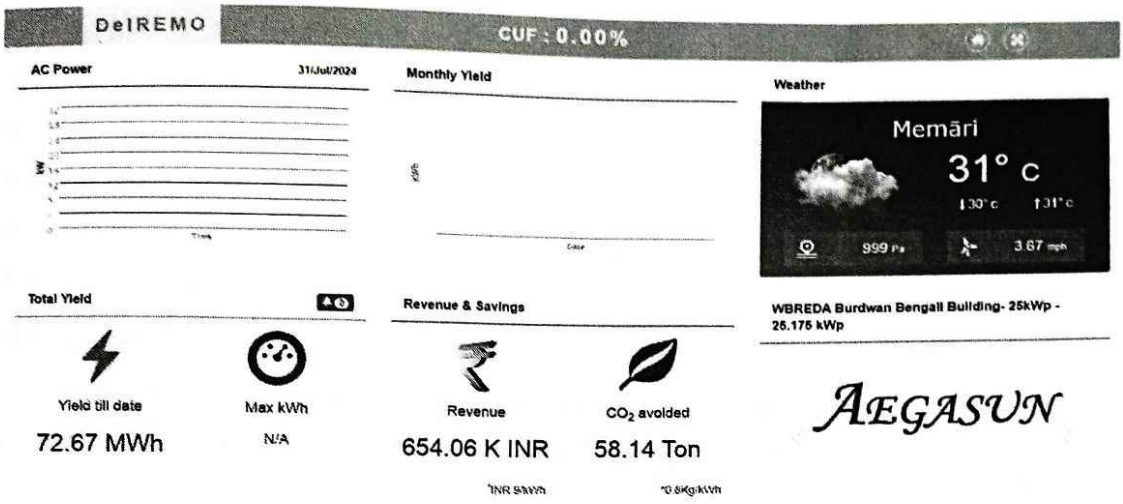
The details of daily activities of generation and savings in terms of several data have been monitored digitally through a website, namely "Delremo.emonitoring.co.in". From that website, it has been shown that The University of Burdwan still yields energy with 193.25 MWh and saves 154.61 Ton CO_2 through the installed rooftop solar PV Power Plant. The individual saving details (for 75 Kw & 25 Kw) with several pieces of information have been given below:

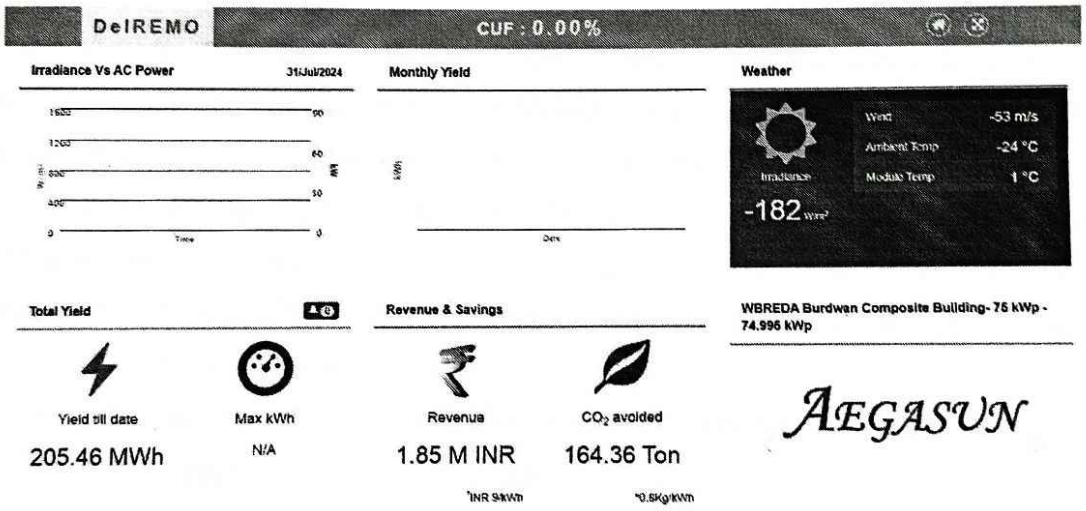
THE UNIVERSITY OF BURDWAN ★ RAJBATI BURDWAN 713104

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

The University of Burdwan

Initiative of Alternate Sources of Energy and Energy Conservation Measures





Sensor Based (Auto timer switch) energy conservation

The new administrative campus named Golden Jubilee at the University of Burdwan began operations in 2021 after the previous campus was designated as a heritage property. As usual, to enhance safety and security, the university has initiated a project to install lighting throughout the campus, including the employee vehicle stand, as dusk surrounding the outside area of the campus remains dark due to lack of proper lighting. The entire lighting system is controlled by analog auto-timer switches, which enable the scheduled operation

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

of the lights to ensure safety, security, and landscaping needs. The Auto-timer switch is a specific device that controls the electric circuits based on a predetermined timing mechanism. It enables the automation of various electrical appliances or systems by turning them on or off at specific times or intervals. The entire system is being operated and controlled by a timer. The automatic timer switch was introduced across the world in 1945. The timer needs to be set according to the desired time for operations ON and OFF timing based on daylight differences. This system minimizes unnecessary power consumption and human errors. Moreover, the university plans to gradually implement this system across campus to improve safety and efficiency.

Use of LED bulbs/power-efficient equipment

The University of Burdwan was initially illuminated through fluorescent lamps for rooms, Sodium vapor for campus light, and incandescent lamps for utility areas as it was established in 1960. Universities are gradually changing illumination systems from conventional to LED light fittings. The LED lamp is an electric light that produces light using light-emitting diodes (LEDs).LED lamps are significantly more energy-efficient than equivalent incandescent lamps and fluorescent lamps. There are the following Advantages of LED over Conventional power lamp:

- LEDs consume less power, and they require low operational voltage.
- No warm-up time is needed for LEDs.
- The emitted light is monochromatic.
- They exhibit long life and ruggedness.

LED lamps require an electronic LED circuit to operate from mains power lines, and losses from this circuit mean that the lamp's efficiency is lower than the efficiency of the LED chips it uses. The driver circuit may require special features to be compatible with lamp dimmers intended for use on incandescent lamps. Generally, the current waveform contains some distortion, depending on the luminaries' technology.

The University of Burdwan is now installing only LED lights in terms of 4 feet or 2 X 2 feet as per requirement for each room, LED Bulb or compact fittings for utility areas, LED

THE UNIVERSITY OF BURDWAN * PALBATI BURDWAN 713104

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

Initiative of Alternate Sources of Energy and Energy Conservation Measures

waterproof outdoor light fittings for campus lights and landscaping areas and LED light fittings only for all the fresh installations. In the case of existing conventional fittings, when they become non-functioning, the University replaces them with LED light fittings only.

In addition to the light fittings, the university replaced the non-functioning old ceiling fan with a new one that consumes less power.

THE UNIVERSITY OF BURDWAN RAJBATI BURDWAN 713104

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104