

## Power Consumption Report

**Period: January 2025 to December 2025**

### 1. Introduction

Woxsen University is committed to efficient energy management and sustainable infrastructure development. The university has adopted multiple energy-saving initiatives including 100% LED lighting with motion sensors, energy-efficient VRV HVAC systems, and large-scale solar power generation to minimize dependence on conventional energy sources.

This report presents the power consumption details for the calendar year **January 2025 to December 2025**, including monthly energy usage, per-person consumption analysis, backup power infrastructure, and sustainability initiatives implemented across the campus.

### 2. Monthly Power Consumption Overview

S No	Month	Energy Consumption (kWh)
1	January	4,44,411
2	February	5,61,539
3	March	6,44,236
4	April	7,15,461
5	May	4,93,260
6	June	2,97,607
7	July	5,35,421
8	August	6,09,192
9	September	6,82,469
10	October	6,09,527
11	November	5,29,916
12	December	3,94,969

Total Annual Consumption: 6,517,008 kWh

Average Monthly Consumption: 543,084 kWh

### 3. Daily Power Consumption Breakdown (Per Person)

- **Total Population: 6,100**
- **Total Annual Consumption: 6,517,008 kWh**
- **Average Daily Consumption: 17,855 kWh**
- **Per Person Daily Consumption:**

17,855 ÷ 6,100 = 2.93 kWh per person per day

This figure reflects optimized power usage supported by renewable energy generation and energy-efficient campus infrastructure.

#### 4. Solar Power Infrastructure

Woxsen University has installed large-scale rooftop and ground-mounted solar power plants in phases, adhering to the Government of Telangana regulation limiting solar capacity to **1 MW per power connection**.

- **Phase-1 Solar Plant:** 327 kWp – Commissioned & Operational
- **Phase-2 Solar Plant:** 420 kWp – Commissioned & Operational
- **Phase-3 Solar Plant:** 249 kWp – Commissioned & Operational

#### Total Installed Solar Capacity: 996 kWp

These solar installations significantly offset grid power consumption and contribute to carbon footprint reduction.

#### 5. Backup Power Supply (DG Set Details)

Woxsen University maintains a robust Diesel Generator (DG) backup system to ensure uninterrupted power supply. The details are as follows:

Allotted Buildings	DG Set Capacity (KVA)
Ladies' Hostels	250 KVA
Gents' Hostels & Sports Facility	500 KVA
Academic Buildings & Cafeteria	1,000 KVA
<b>Total DG Backup Capacity</b>	<b>1,750 KVA</b>

These DG sets support critical operations during power outages, ensuring continuity in academic and residential activities.

#### 6. Sustainability Initiatives

Woxsen University continues to implement several sustainability measures to optimize power consumption:

- **100% LED Lighting & Motion Sensors:** Continued usage of LED Lighting and motion sensors during the building design stage, ensuring ongoing energy savings.
- **VRV HVAC Technology:** Continued usage of VRV systems in building designs, ensuring ongoing energy savings.
- **Solar Water Heating Systems:** Solar water heaters have been installed on the rooftops of hostel buildings. These systems provide a sustainable solution for hot

water needs throughout the year and contribute to the reduction of the University's carbon footprint.

- **Street Light Shutdown Initiative:** As an additional measure to reduce power consumption, street lighting on campus is shut off daily after 11 PM.

## **7. Future Plans**

To adhere to the Government of Telangana's regulation that limits solar power setups to 1 Megawatt per connection, Woxsen University is planning to secure a second power connection. This additional connection will accommodate up to 1 Megawatt of solar setup for future expansion and new building infrastructure. This initiative demonstrates the university's proactive approach to sustainable energy management and infrastructure development.

## **8. Conclusion**

Woxsen University follows a structured and sustainable approach to energy management. With a total annual electricity consumption of 6,517,008 kWh, an average daily usage of 17,855 kWh, and a per-person daily consumption of 2.93 kWh, the university demonstrates efficient energy utilization. The fully commissioned 996 kWp solar power infrastructure, combined with energy-efficient systems, reinforces the university's commitment to sustainability and responsible resource management.

## Led Lights & Motion sensors



**327 kWp Solar Setup (Phase -1)**



**420 kWp Solar Setup (Phase -2)**





**249 kWp Solar Setup (Phase -3)**



**VRV Units:**



**Water Heaters**



