Energy Audit Report

Gurugram Global College of Pharmacy

5 KM Milestones, Kheda Khurampur, Haily Mandi Road,
Farrukhnagar, Gurugarm, Haryana-122506,
(Year 2023-24)

Conducted by:

GEM
EHS CONSORTIUM

Gurugram Global College of Pharmacy
Farrukhnagar
Gurugram

Global Envirosafety Management Private Limited

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C.No.GEM/GA/2024/06

ENERGY AUDIT CERTIFICATE

is awarded for **2023-24** to the Esteemed Institution

Gurugram Global College of Pharmacy

5 KM Milestones, Kheda Khurampur, Haily Mandi Road,
Farrukhnagar, Gurugram 122506 (Haryana)

Has been assessed by **Global Envirosafety Management Private Limited, New Delhi** for the systematic study of energy conservation on institutional working frameworks to the fulfilment the requirement of ISO 50001:2018 for

Energy Audit

The activities and measures carried out by the college management have been verified and found to be acceptable. The energy conservation opportunities have been identified by the college management and few of them are under implementation. The audit team has also suggested opportunities towards carbon reduction and it was acceptable by the college management

The positive approach of the management, faculty and students towards energy, environment and sustainability are highly appreciated and commendable

Issued on **04, August 2024** valid till **04, August 2026**

GLOBAL ENVIROSAFETY MANAGEMENT

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M Tech (Power Electronics and Electrical Drives) from IIT Dhanbad
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Gurugram Global College of Pharmacy
Farrukhnagar
Gurugram

Contents

ACKNOWLEDGEMENT

M/s **Global Envirosafety Management Private Limited** would like to thank the management, staff and employees of **Gurugram Global College of Pharmacy** for their kind co-operation and assistance provided during Energy Audit. The Energy Audit Auditors express their sincere gratitude and appreciation to **Shri Ravinder Tokas, Dr. Aruna Yadav and Dr Vikram** all other Executives & staff members for their co-operation and association during the conduction of Energy Audit.

Energy Audit Team

Energy Audit was conducted in the month of July, 2024. The Audit team consisted of the following members:

M/s. Global Envirosafety Management Private Limited

1. **Dr. Umashankar Sain**, EHSS specialist, Ph D, M Tech, MSc, with 20 years' experience in Environment Health Safety and Sustainability Audit services. IGBC Accredited Professional, GreenCo Facilitator and Water Auditor from IPC.
2. **Mr. Ashutosh Singh** B Tech Electrical Engineers, M Tech (Power Electronics and Electical Devices) and M Sc (Renewable Energy), Energy Auditor and Energy Evaluator, Energy Lead Auditor.
3. **Mr. Gurdarshan Singh**, Energy testing Engineer, M Sc, having 5 years' experience in Energy efficiency monitoring

1. Executive Summary

1.1. Objective of the energy audit study

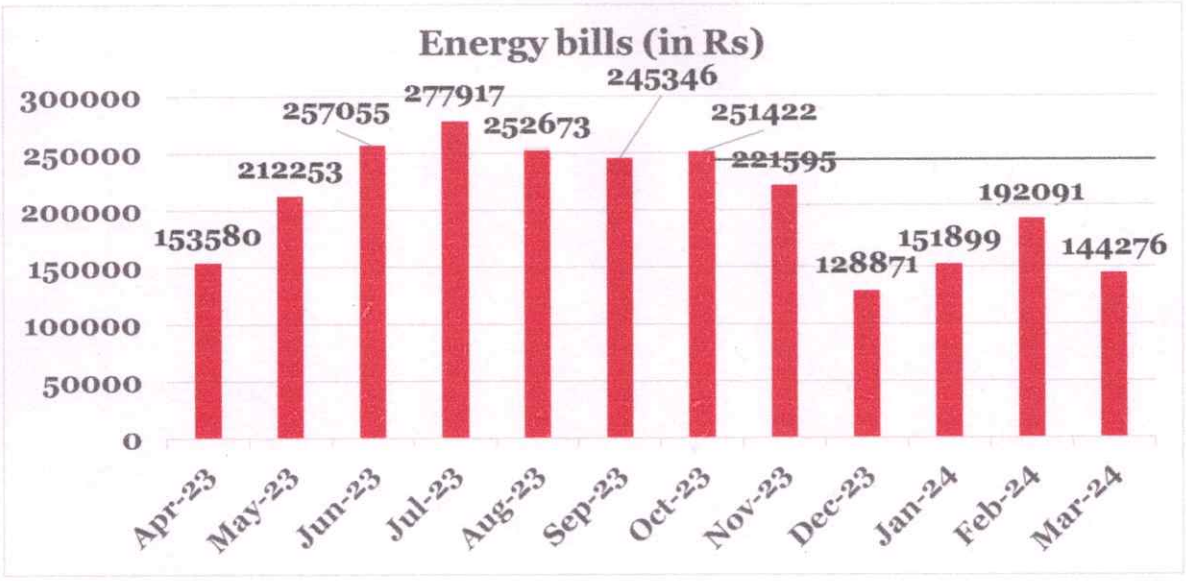
The objective of the energy audit is to review the present energy consumption scenario, monitoring and analysis of the use of energy and explore the energy conservation options including submission of a detailed energy audit report containing recommendations for improving energy efficiency with cost benefit analysis and technical specifications for any retrofit options with the list of suppliers/manufacturers of the recommended energy efficient technologies.

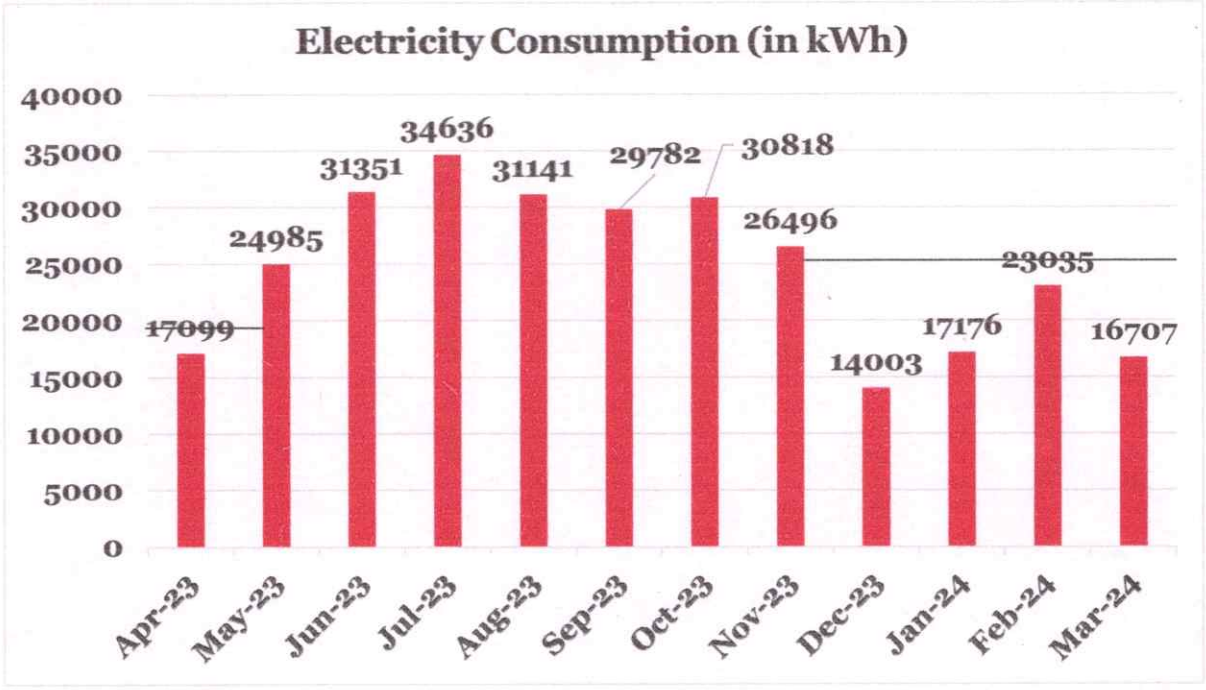
The detailed energy audit identifies all possible energy conservation measures including detailed project (energy efficiency) engineering. It will provide a dynamic model of energy use characteristics of both the existing facility and all energy conservation measures identified. Extensive attention is given to understanding not only the operating characteristics of all energy consuming systems but also situations which cause load profile variations on both annual and daily basis.

1.2. About the energy audit location

Gurugram Global college of Pharmacy (GGCP) is the college building located at 5km milestone, Kheda khurampur, Hely Mandi road, Farukh nagar, Gurugram-122506 where Education is provided leading to award of B. Pharmacy and D. Pharmacy are carried out. The total area of the building is approximately 8093 m^2. The regular timing is 8:45 AM to 5 PM, Monday to Friday. GGCP being a large building consumes a lot of energy to run its various operations like lighting, air conditioning, office equipment etc. The status of energy consumption in GGCP in last year is as below:

Present energy consumption scenario:





1.3. Summary of proposed energy conservation measures

S.No.	Proposed energy conservation measures	Total annual energy savings (kWh)	Total annual monetary savings (Lakhs)	Anticipated investment (Lakhs)	Simple payback period (months)
1	**Replacement of Tubelight with LED**	1638	0.14	0.14	12
2	**Replacement of Fan (80W) with BLDC based Fan (32 W)**	17472	1.1	3.5	38
3	**Installation of a Solar based water heater for hot water requirement for cleaning purpose in Canteen**	6783	1	1	12
4	**Installation of a Solar power plant**	33600	2.35	10	51
		59493	**4.59**	**14.64**	**113**

2. Introduction

2.1. Methodology adopted for the audit

A detailed energy audit was conducted at Gurugram Global college of Pharmacy building from 01.08.2024 to 03.08.2024. The energy audit team comprised of thermal and electrical energy experts. During the field visit, a range of portable energy audit instruments were used to take various measurements at different sections of the building. In addition, design and operational data were collected from logbooks and equipment manuals. Discussions were held with various technical personnel at the auditorium to understand its operations and energy requirements completely. The energy audit focused on the study of all major energy consuming equipment and the evaluation of operational efficiency/performance of such equipment from the energy conservation point of view.

The following areas were covered during the study:

- ***Electrical***
    - ✓ Electrical systems which include transformers, power factor and demand management
    - ✓ Water pumping system
    - ✓ Air conditioning system
    - ✓ Electric motors
    - ✓ Lighting
    - ✓ Diesel Generator (DG) set

The study focused on areas that are consuming energy and identified opportunities for energy savings at the building. The analyses include estimation of simple payback period, discounted payback period and project IRR to ascertain the financial viability of investment intensive

energy conservation measures.

A wide array of latest, sophisticated, portable, diagnostic and measuring instruments were used to obtain primary information for energy audit investigations and analyses. The specialized instruments that were used during the energy audit included:

- Power analyzers (Three phase and Single phase)
- Digital hygrometer
- Thermometer
- Vane type anemometer
- Ultrasonic flow meter
- Digital lux meter

During the audit, there was continuous interaction between the audit team, facility personnel and Gurugram Global college of Pharmacy officials to ensure that the recommendations made were realistic, practical and implementable.

This report presents the field measurements, design and operational data, data analysis, key observations and recommendations to achieve energy savings in each of the major areas and equipment where energy was being consumed. The recommendations are followed by cost-benefit analysis. The ultimate aim of this exercise is to help the building management to understand, prioritize and implement the energy efficiency opportunities identified through this study.

3. Overview of the energy audit location

3.1. Brief description of energy audit location

Gurugram Global college of Pharmacy (GGCP) is the college building located at 5km milestone, Kheda khurampur, Hely Mandi road, Farukh nagar, Gurugram-122506 where Education is provided leading to award of B.Pharmacy and D.Pharmacy are carried out. The total area of the building is approximately 8093 m2. The regular timing is 8:45 AM to 5 PM, Monday to Friday. GGCP being a large building consumes a lot of energy to run its various operations like lighting, air conditioning, office equipment etc. A 20 kW Solar Plant has also been installed at roof top of GGCP which is capable of providing power about 16kW, is generating about 33,600 kWh per annum besides annual saving of about Rs. 2.35 lakhs in electricity bills.

During August 2002, honorable Prime Minister announced that all Govt. Organizations should bring down their energy consumption by 30% and private organizations by 20%, over a period of next 5 years, by conducting comprehensive energy audit studies in their premises and followed by implementation of the suggestions/recommendations arising out of the study.

The audit found that GGCP building consumes 297,229 kWh/annum of energy that translates to Rs 24.89 lakh per annum. Anticipated energy saving due to recommended measures are 59,493 kWh/annum, a saving of Rs 4.59 lakh in a year.

Fig1: Satellite view of Gurugram Global college of Pharmacy

3.2. Details of energy consuming equipment

The details of the major energy consuming equipment in the GGCP building are provided below:

Table 1: Major energy consuming equipment in the GGCP

1. Diesel generators				
1	Number of DG sets	No.	2	
2	Rating of generators	kVA	250	
		kVA	125	
2. Air-conditioning system				
S. No.	**Type of AC**	**Numbers**	**Units**	**Capacity**
1	Split ACs	3	TR/unit	1.5
2	Window ACs	4	TR/unit	1.5
3. Water Pumping System				
S. No.	***Location***	***Rating (kW/HP)***	***Number***	***Application***
1	Pump Room- Submersible pump	10 HP	3	To lift the water to overhead tanks on the terrace

6. Transformer details				
S. No.	**Rating (kVA)**	**Number**	**Location**	**Voltage Ratio**
1	500 kVA	1	Substation	11 kV/ 415 V

7. Fans inventory at GGCP

S. No.	Location	Fans
1	College Building & Hostel	140

7. Lights inventory at GGCP

S. No.	Location	Lights
1	College Building & Hostel	65

Carbon Sink

Emission reduction through Plantation of Trees There are 1150 old trees at GGCP. The CO_2 removal factor is considered to be 23 $KgCO_2$/ tree and the total CO_2 removal in tonnes of Co_2e is 26.45.

4. Energy Scenario and Usage Pattern

The Gurugram Global college of Pharmacy (GGCP) building consumes following forms of energy for running air conditioning systems, lighting systems, fans, computers and other electronic equipment, water pumping systems etc. :

- Electricity - Electricity is used for air conditioning systems, lighting, fans, computers andother electronic equipment etc.
- Diesel - Diesel Generator (DG) has been provided for power backup in case of powerfailure.

4.1. Sources and utilization of electricity

The Gurugram Global college of Pharmacy (GGCP) building is getting electrical power supply from Dakshin Haryana Bijli Vitran Nigam (DHBVN) at 11 kV. It is equipped with two DG sets, out of which one DG sets is of capacities 250 kVA each and other one is of capacities 125 kVA each to provide power supply during power failure. The operation of the DG sets is minimal due to low power outages. The DG sets run rarely and even less than two hours a month and does not have a significant role in energy consumption.

The power is distributed through one step down (11,000/415 V) transformers of 500 kVA. Transformer are currently in running mode. There are interconnected LT buses for distribution of power, out of which three are for power and two for emergency loads like lighting and lifts. Normally all LT buses are energized from DHBVN power supply and in case of failure of power supply, the DG sets are started and only the two emergency panels are energized.

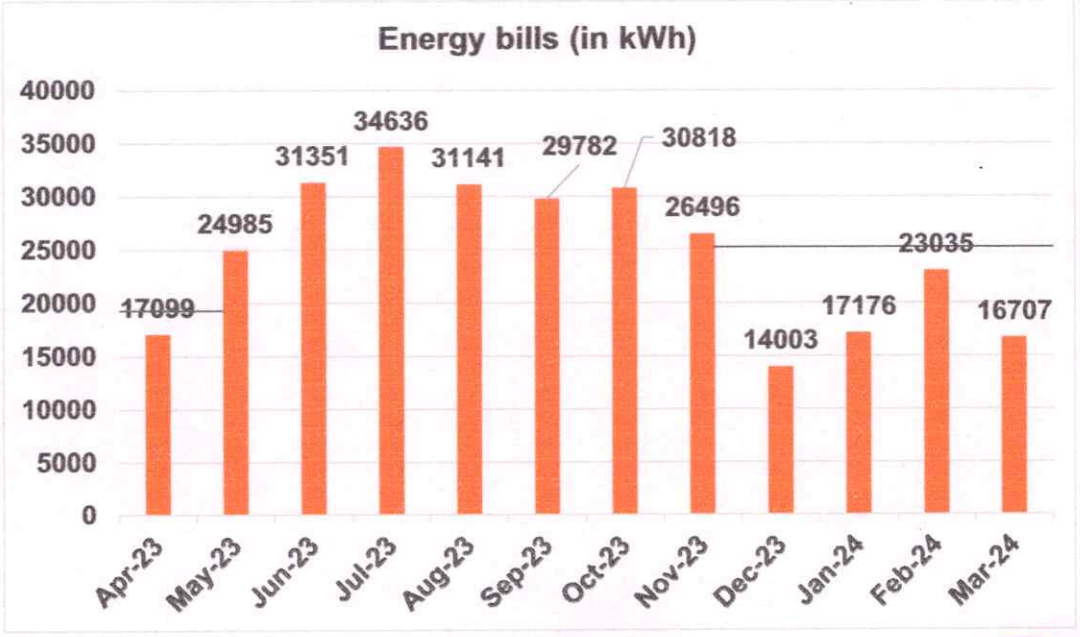
The monthly electricity consumption for the last 12 months is presented below. This information was obtained from the records of the GGCP.

Table 2: Month wise consumption of electricity (kWh)

Month-Year	No. of units consumed (kWh)
Apr-23	17099
May-23	24985
Jun-23	31351
Jul-23	34636
Aug-23	31141
Sep-23	29782
Oct-23	30818
Nov-23	26496
Dec-23	14003
Jan-24	17176
Feb-24	23035
Mar-24	16707
Total	**297229**

The table above indicates that the electricity consumption is more during the months of May to October. This is due to increased load on the HVAC system because of higher ambient temperatures during this period. Figure 3 presents the trend of electricity consumption for this period.

Figure 2: Graphical representation of monthly electricity consumption of GGCP building



4.2 Energy cost scenario of the facility

The energy audit team also collected information on the monthly electricity bills paid by the GGCP. Table4 below presents the total annual electricity cost and average unit cost of monthly electricity for the last year.

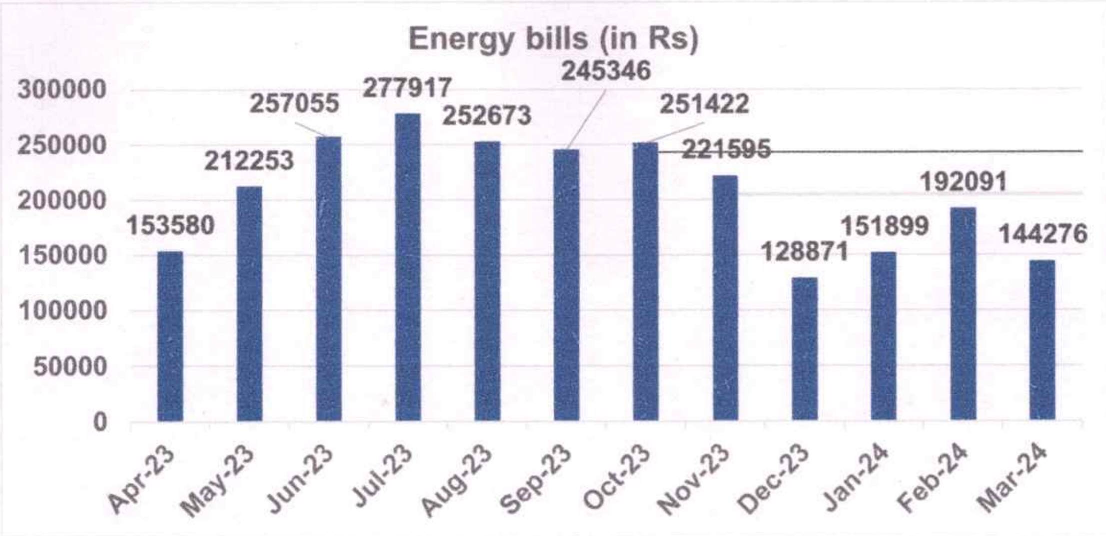
Table 4: Monthly electricity consumption in GGCP building

S.No.	Monthly Bill	Units of Electricity (kWh)	Monthly electricity bill (INR)	Average Unit cost (INR/kWh)
1	Apr-23	17099	153580	8.98
2	May-23	24985	212253	8.50
3	Jun-23	31351	257055	8.20
4	Jul-23	34636	277917	8.02
5	Aug-23	31141	252673	8.11
6	Sep-23	29782	245346	8.24
7	Oct-23	30818	251422	8.16
8	Nov-23	26496	221595	8.36
9	Dec-23	14003	128871	9.20
10	Jan-24	17176	151899	8.84
11	Feb-24	23035	192091	8.34
12	Mar-24	16707	144276	8.64
				8.47 (Average unit cost)

The average unit cost of electricity has been computed by dividing the sum total of monthly electricity bills fromthe month of April 2023 to March 2024 by the sum total of units of electricity consumed for the same months.

Figure 4 captures the monthly electricity bill paid during this period.

Figure 4: Monthly bill (Lakh INR) of electricity/energy from April 2023 to March 2024



The figure above indicates the variation in monthly bills of electricity. A detailed analysis of monthly electricitybill is provided in the succeeding chapter.

5. Electricity Bill Analysis

The Gurugram Global college of Pharmacy (GGCP) building is getting electrical power supply from Dakshin Haryana Bijli Vitran Nigam (DHBVN) at 11 kV. It is equipped with two DG sets, out of which one DG sets is of capacities 250 kVA each and other one is of capacities 125 kVA each to provide power supply during power failure. The power is distributed through step down (11,000/415 V) transformers of 500 kVA.

The details of the electricity tariff is provided in the table below:

Table 5: Electricity Tariff Analysis

Parameter	Details
Bill Group	HT Bulk
Consumer Number	3130291000
Tariff Category	HTS-NDS
Demand Charges (INR/kVA)	125
Sanctioned Load (kW)	125

Some of the key pointers regarding electricity bills are as follows:

- The billed units are divided into peak timings, normal timings and non-peak timings. Based on this,TOD surcharges/rebates are provided in the electricity bills.
- The demand charges are being levied at Rs 125/kVA on the contract demand. The contract demand depends upon the electricity consumption and power factor for the corresponding month. Based on the electricity bills analysis, it can be inferred that these demand charges can be significantly reduced by maintaining a power factor close to unity.

A detailed twelve months electricity bills analysis for the GGCP building is provided below:

S.no.	Bill Cycle	Sanctioned load (kW)	Contract demand (kVA)	Power factor	Electricity consumption (units)	Unit rate (INR / kWh)	Electricity amount Energy charges (INR)	Fixed charges @ Rs 125/KVA (INR)	Total electricity amount and fixed charges (INR)	Additional surcharges (INR)	Electricity tax (INR)	Net amount payable (INR)
1	Apr-23	125	168.16	0.74	17099	7.43	127015	21020.0	148035.0	2579.1	2965.9	153580
2	May-23	125	162.74	0.77	24985	7.12	177801.05	20342.5	198143.5	9911.8	4197.7	212253
3	Jun-23	125	168.16	0.74	31351	6.78	212587.20	21020.5	233607.7	18480.4	4966.9	257055
4	Jul-23	125	162.74	0.77	34636	6.69	231872.07	20342.5	252214.5	20332.6	5369.9	277917
5	Aug-23	125	168.16	0.74	31141	6.69	208411.00	21020.5	229431.5	18360.1	4881.4	252673
6	Sep-23	125	168.16	0.74	29782	6.78	202000.40	21020.5	223020.9	17584.7	4740.4	245346
7	Oct-23	125	162.74	0.77	30818	6.75	208065.20	20342.5	228407.7	18156.5	4857.8	251422
8	Nov-23	125	168.16	0.74	26496	6.82	180580.88	21020.5	201601.4	15712.5	4281.1	221595
9	Dec-23	125	162.74	0.77	14003	6.96	97469.05	20342.5	117811.5	8571.6	2487.9	128871
10	Jan-24	125	168.16	0.74	17176	6.84	117545.40	21020.5	138565.9	10400.4	2932.7	151899
11	Feb-24	125	168.16	0.74	23035	6.67	153621.92	21020.5	174642.5	13739.2	3709.4	192091
12	Mar-24	125	157.32	0.79	16707	6.69	111733.03	19664.4	131397.4	10093.6	2785.0	144276
Total					**297229**		**2028702**	**248177**	**2276880**	**163922**	**48176**	**2488978**

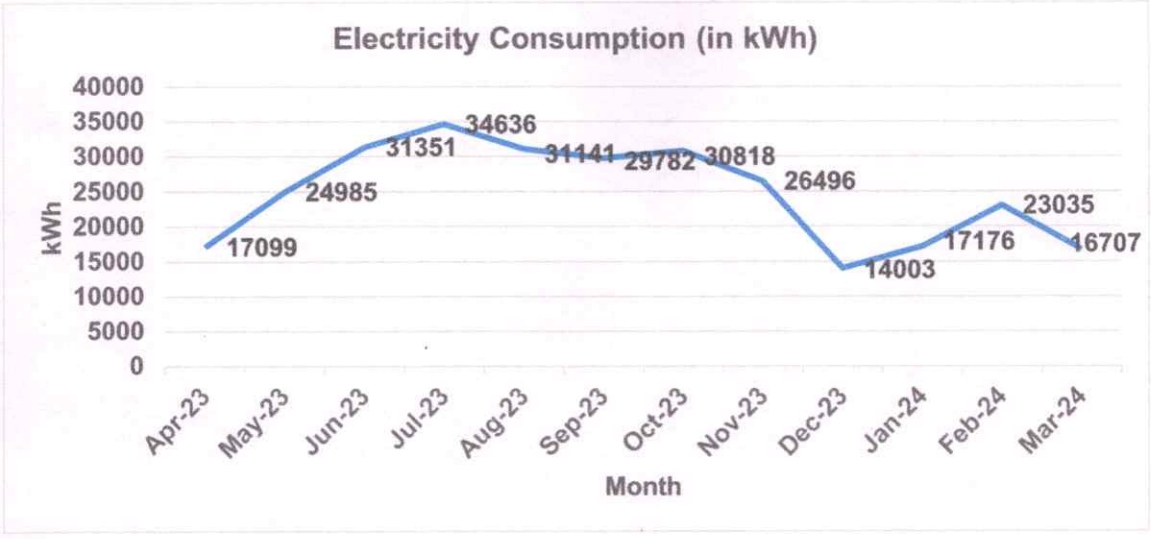
It can be seen from the above table that the total billed units for the GGCP building was 2,97,229 and the net amount paid towards electricity charges was INR 24,88,978 for the period April 2023- March 2024.

Some of the key trends analyzed from the electricity bills are provided below:

Trends in electricity consumption

The variation in monthly consumption of electricity (units) is plotted below.

Figure 5: Monthly trend of electricity consumption (in kWh)



It can be seen from the above graph that the electricity consumption is more in the months of May to October due to increased air conditioning loads during summers.

Trends in contract demand

The variation in monthly contract demand is plotted below.

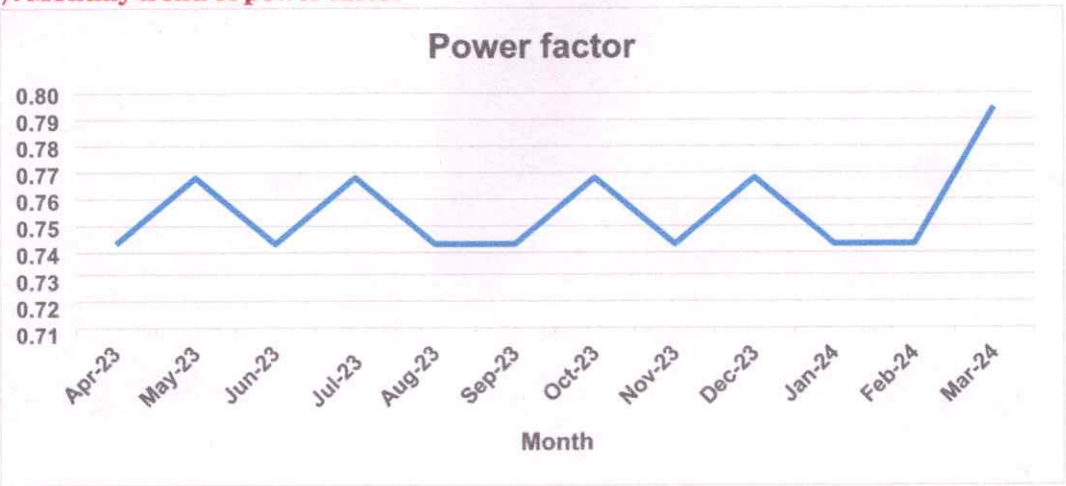
Figure 6: Monthly trend of contract demand (kVA)

It can be seen from the above graph that the contract demand varies from 157 to 168 and is lowest in March'24 due to lowest fixed charges in this month.

Trends in power factor

The variation in monthly power factor is plotted below.

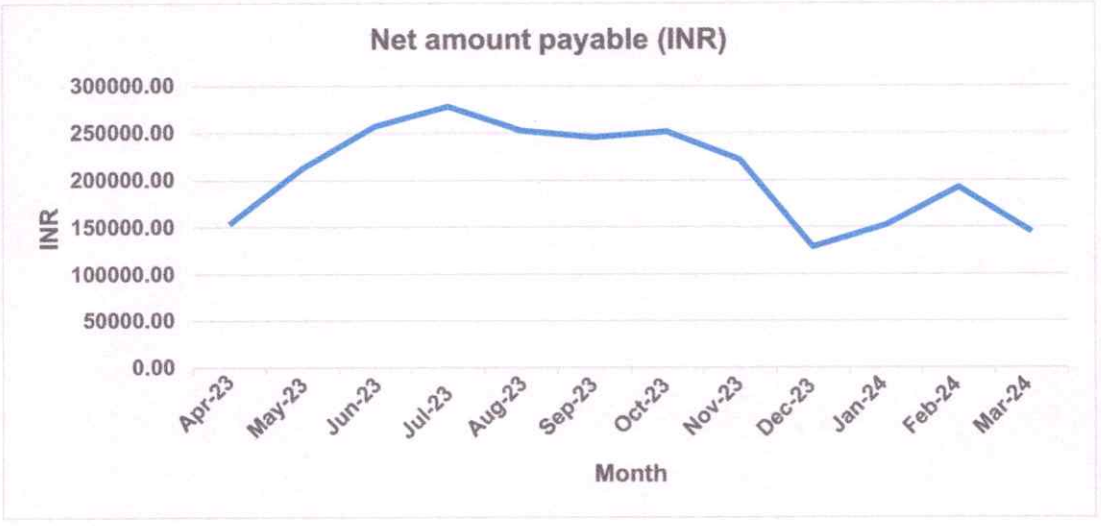
Figure 7: Monthly trend of power factor



Trends in net monthly payable amount

The variation in net monthly payable amount towards electricity charges is provided below.

Figure 8: Monthly trend of net payable amount (INR)



5.2 Total Harmonic Distortion (THD) Analysis

Harmonics are electric voltages and currents on an electric power system that can cause power quality problems. Harmonics are created by electronic equipment with nonlinear loads drawing in current in abrupt short pulses. The short pulses cause distorted current waveforms, which in turn cause harmonic currents to flow back into other parts of the power system. Harmonics are especially prevalent when there are many personal computers, laser printers, fax machines, copiers, or medical test equipment, fluorescent lighting, uninterruptible power supplies (UPSs), and variable speed drives all on the same electrical system. The table below

provides the maximum THD of current as a percentage of the fundamental current:

Table 7: Maximum THD of current as a percentage of the fundamental current

Circuit current at rated load condition "I" at 415V/220V	Maximum THD of Current
I < 40A	20%
40A < I < 400A	15%
400A < I < 800A	12%
800A < I < 2000A	8%
I > 2000A	5%

The percentage of total current and voltage harmonic distortion in all the three phases (R, Y and B) were recorded at the main incoming panel.

5.3 Overall power quality

The analysis of various power quality parameters given above indicates that the current profile and voltage profile of the system is within the desired range but the power factor has been quite low and there is considerable scope for power factor improvement.

6. Energy conservation measures identified during the audit

While taking various measurements and carrying out analysis of the energy consumption data of the GGCP, the energy audit team identified various energy conservation options. All these options are given in detail in the following sections:

6.1 Exploring the Energy Conservation Option (ENCON) inelectrical distribution system

6.1.1 Exploring the energy conservation options (ENCON) inlighting system

Replacement of Tubelight (28 W) with LED based tube lights (16 W)

The GGCP has already installed Tubelight (28 W). Though it is an energy efficient option, the energy efficiency can be further improved by replacing these tube lights with LED based tube lights (16 W) as they provide similar lux levels with further enhanced energy savings.

Recommendation

The replacement of Tubelight (28 W) with LED based tube lights (16 W) will result in energy savings without compromising on light levels. LED tube lights have other features too like less energy consumption, high operating life, safety, ease of disposal, flicker free light and versatility.

Energy and financial savings

The following parameters and assumptions are considered to estimate the energy savings and financial viability of this option:

Table 12: Lighting ENCON 1 - Assumptions and parameters considered for estimation of energyand financial savings

Assumptions and Input parameters		
Cost parameters		
Particulars	Unit	Value
Existing T5 need to be replaced	Number	65
Cost of LED based tube lights (16 W)	INR/ piece	200
Installation cost	% of capital cost	5
Operating parameters		
Particulars	Unit	Value
Number of running hours	Per day	7
Number of operating days	Per year	300
Average life of LED based tube lights (16 W)	Hours	50,000
Average life of LED based tube lights (16 W)	Years	20
Average electricity tariff	INR/kWh	8.47
Energy and financial savings		
Parameters	Unit	Value
Power consumption of tube lights	W/piece	28
Power consumption of LED tube lights	W/piece	16
Energy savings	W/piece	12
Annual energy saving	kWh/year	1638
Annual monetary saving	INR/year	13,873
Total investment requirement	INR	13,650
Simple payback period	Months	12

An energy saving of 13,873 units can be achieved by replacing the existing tube lights (28 W) with LED based tube lights (16 W). Implementation of this measure needs an investment of INR 13,650 and will have a payback period of only one year.

6.1.2 Exploring the energy conservation options (ENCON) inFan system

Replacement of Fan (80W) with BLDC based Fan (32 W)

It is proposed to replace the all the fans with 32 W BLDC fans which are energy efficient.

Table 13: Fan ENCON 1 - Assumptions and parameters considered for estimation of energy and financial savings

A	**Title of Recommendation**	:	Replacement of Fans with BLDC fans
B	**Description of Existing System and its operation**	:	Currently there are 140 conventional Ceiling fans which consume around 80 W.
C	**Description of Proposed System**	:	It is proposed to replace the all the fans with 32 W BLDC fans which are energy efficient.

D	**Existing System**	:	Presently the 140 fans have a combined connected load of 11.2 kW, Considering 7 Hours of Operation for 300 days, 11.2*8*300 = 26,880 kWh/year. With average per unit rate of 6.75 Rs/ Unit we get, 26,880 * 6.85 = 1,74,720 Rs/Year
E	**Existing System**		
	Existing Energy use (kWh/Annum)		26,880
	Existing Energy Cost (Lakh Rs/Annum)		1.75
F	**Modified System**	:	It is proposed to replace ceiling fans with BLDC Fans of 32W. Considering the Energy saved we have 4.48kW. Considering 7 Hours of operation for 300 days, 4.48*7*300 = 9408 kWh/year. With average per unit rate of 6.85 Rs/unit we get, 9408*6.85 = 64,445 Rs/Year
	Modified System		
	Modified Energy use (kWh/Annum)		9408
	Modified Energy Cost (Lakh Rs/Annum)		0.65
G	**Energy Savings** *(kWh/Annum)*	:	**17472**
	Energy Cost Savings *(Lakh/Annum)*	:	**1.10**
H	**Investment** *(Lakh.)*	:	**3.5**
I	**Simple Payback Period** *(Months)*	:	**38.18**
J	**Simple Payback Period** *(Years)*		**3.18**

6.2 Exploring the Energy Conservation Option (ENCON) in Electrical Generation System

A 20 kW Solar Plant has also been installed at roof top of GGCP which is capable of providing power about 16kW, is generating about 33,600 kWh per annum besides annual saving of about Rs. 2.35 lakhs in electricity bills.

New Solar power plant can be installed on New Hostel building of similar capacity of 20kW which additionally can generate power about 16kW of about 33,600 kWh per annum with additional annual saving of about Rs. 2.35 lakhs in electricity bills.

6.3 Exploring the Energy Conservation Option (ENCON) in Electrical Generation System

A:	Title of Recommendation	To install a Solar based water heater for hot water requirement for cleaning purpose in Canteen
B:	Description of Existing System and its Operation	Saving Energy for Canteen Purpose
C:	Description ofProposed System	Installation of 500 LPD based solar water heater for Canteen
D:	Modified System	A 500 LPD solar based water heater to be installed which heats the waterup to 60 degrees Celsius = 500x1x (60-25) = 17,500 kcal. Units required for heating water = 17500/860 = 20.35 KWH/day. Considering electrical efficiency of 90% = 20.35/0.90 = 20.61 KWH/Day x 300 days = 6782.95 KWH/Year.
E	Total annual KWH	6782.95
F	Annual cost saving(Lakh Rs. /Year)	1.00
G	Approximate TotalInvestment Cost (In Lakhs)	1
H	Simple Payback Period(Months)	12

Brief Details

ICV ASEESSMENTS PRIVATE LIMITED

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Ph. 011 41542515, E-mail: info@icvassessments.com, Website: www.icvassessments.com

Doc No	ICV-F-01 EnMS
Version	01
Rev Dt.	01.01.2023

APPLICATION FORM

Organization's Name	Gurugram Global College of Pharmacy Website: www.ggcp.co.in
Organization's Representative	Name: Dr. Indira Raheja Position: Principal Mobile: 9818356925
Legal Status of the organization	Govt. dept./PSU/Public Ltd./ Pvt. Ltd. /LLP/Partnership firm/ Society/ Trust/Proprietorship (Please tick ✓ indicate the correct option) ✓
Organization's communication Address	5KM Milestone, Khedi Khurampur, Hajly Mandi Road, Farrukhnagar, Gurugram – 122506
Audit site address:	— Same —
Temporary site :	NIL
Scope of Audit & Audit standard	Providing Education Services leading to Award B. Pharmacy & D. Pharmacy
If multisite organization	Attach separate sheet with address and work scope of each unit with no. of shifts and no. of workers.
Contact person	Name: Mr. Sandeep Jain Position: Registrar E-mail: ggcpgurugram@gmail.com Mobile: 9812636011
Brief description of work processes	Attach energy consumption process Flow Chart, also highlight SEUs
Types of energy sources being used	1. Electrical energy ✓ 2. Diesel ✓ 3. Solar energy 4. Gas 5. Coal 6. Wind energy 7. If Other, specify (Pls. tick)
No. of electric appliances/Equipment	1. Light equipment: 65 2. Fans: 140 3. Air conditioners: 07 4. Motors: 03 5. Computer systems: 105 6. Other electric machines: 113
How many no. of SEU you have identified ?	Describe name of equipment, Process, area that have Significant Energy Use (Attach list)
Energy Management system key process completed ?	Energy base line data available? Yes (Elect. bill) Energy Performance indicators established?
Date of last Internal audit& MRM	Last Internal audit date: N.A. Last MRM date:

No. of workers per shift

Details of general Workers and those affecting energy use

	1. Permanent workers	2. Part time workers	3. Temporary workers	4. Total no. of workers (Excluding those	5. No. of Operators involved with SEU	6. No. of Supervisors who affect energy consumption	7. No. of Managerial staff who affect energy consumption
Working shift -1	48	—	09	—	02	01	01
Working shift -2 X							
Working shift -3 X							
Total	48	—	09		02	01	01

When do you expect to be ready for stage-1 assessment?	**When do you expect to be ready for Stage-2 Assessment?**
Name of the consultant, if any	**Language during audit:** English/Hindi
Name, position & sign of applicant with date	Dr. Indira Raheja Principal 03/08/23

Principal
Gurugram Global College of Pharmacy
Farrukh Nagar, Gurugram

Gurugram Global College of Pharmacy Farrukhnagar Gurugram