

Elion Technologies & Consulting Pvt Ltd

Certificate

This is to certify that Energy Audit at Baba Educational Society Institute of Paramedical College of Nursing, 56, Deva Road, Matiyari, Chinhat, Lucknow - 226028 was carried out for the year 2022 - 23.

It is found that sustainable measure are taken by the campus in reduction in energy consumption. Several measures are taken by college management for promoting energy efficiency. In-house solar power plant is also installed.

Audit Date – 04/09/2023
Valid Up to – 03/09/2024

Certificate Number
EA/2022/BESIPCN

Audit Officer



A handwritten signature in blue ink.



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ENERGY AUDIT REPORT
FOR
BABA EDUCATIONAL SOCIETY
INSTITUTE OF PARAMEDICAL
COLLEGE OF NURSING



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Acknowledgement

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to Baba Educational Society Institute of Paramedical College of Nursing for entrusting the task of conducting energy audit study.

We acknowledge with gratitude the whole hearted support and cooperation extended by all team members while carrying out the study.

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Site Information

Name of College	Baba Educational Society Institute of Paramedical College of Nursing
College Address	56, Deva Road, Matiyari, Chinhat, Lucknow. -226028.
Execution Partner	ELION Technologies & Consulting Pvt Ltd
Communication Address	307, 3rd Floor DDA Lal Market H-Block Vikas Puri, New Delhi-110018
Date of Audit	04 th September 2023
Year of Audit	2022 – 2023
Site Team who participated in the Study	Mr. R K Vajpayee - Director Dr. Archana Chouhan - Principal Mrs. Smita - Office Superintendent Mr. Nitin Soni - Professor Mr. Hemendra Pal Singh - Professor Mrs. Manita Acharya - Professor Mr. Gagan - Associate Professor Mr. Abhishek Dhamaniya - Assistant professor Mrs. Anjali Chaturvedi - Assistant Professor Mrs. Manila Bibin - Assistant Professor Mr. Ankur Sharma - Assistant Professor Ms. Jyoti Shukla - Assistant Professor Mrs. Charul - Nursing Tutor Mr. Manoj - HR Mr. Sarvesh Chandra - Electrician Mr. Ranjeet - Electrician Mr. Darmender - Gardener
Main Energy Consuming Machines/Equipment's considered for Energy Audit	<ul style="list-style-type: none"> • Lighting & Fans • Air Conditioners • Motors & Pumps • Desktops & Printers



Executive Summary

The Baba Educational Society was established in the year 1999 in Lucknow as a Registered Society under the Societies Registration Act (Reg. No. 1064/1999).

In the year 2000, a significant step was taken by the Baba Educational Society to setup a hospital, with an aim to serve the underprivileged section of the society. Hence, the hospital was setup in a small rural hamlet called Matiyari which is a part of Chinhat, Lucknow.

Under the umbrella of this society, 'Baba Educational Society, Institute of Paramedical Sciences, school of Nursing' was established in the year 2003 with aim to uplift the medical education among females and rural background.

Currently, Baba Education society has the following academic programs running under its scope:

- Nursing College
- Paramedical College
- Pharmacy Education
- Skill India programs

The Hospital attached under Baba Educational Society is 'Baba Hospital' which is a 350 super-specialty hospital registered under CMO and offers various charitable programs in the society.

Elion Technologies and Consulting Pvt Ltd (Elion) team carried out the remote audit of premises. During the audit Elion team carried out virtual visit of entire campus i.e. classrooms, library, washrooms, staff rooms, administration department, accounts department and hostels.

List of courses offered by the institute:

- M.Sc. Nursing (2 years)
- B.Sc. Nursing (4 years)
- General Nursing and Midwifery (GNM) (3 years)
- Auxiliary nurse midwife (ANM) (2 year)

Electricity is supplied by Madhyanchal Vidyut Vitaran Nigam Ltd. and for backup powers supply DG Set of 45KVA, 30KVA, 12KVA each is available.

Also, solar power plant of capacity 50KVA is installed in the college.

The energy audit included detailed data collection, analysis of data and identification of specific energy saving proposals.



Chapter 01: Introduction

Baba Educational Society Institute of Paramedical College of Nursing evinced interest in availing the services of Elion Technologies and Consulting Pvt Ltd for conducting energy audit of their premises.

Elion Technologies and Consulting Pvt Ltd team conducted the Detail Energy audit on 04th September 2023.

This report is on the energy audit carried out Baba Educational Society Institute of Paramedical College of Nursing. The detailed energy audit comprised of the following activities:

- Data collection of power consuming equipment's.
- A brief session on energy management was conducted to seek more inputs from the personnel engaged in operation and maintenance of electro mechanical services.
- Analysis of collected data.
- Discussion with the officials on the identified proposals.
- Discussion and reporting of the findings of energy audit with the Engineers and management staff.

All the identified energy savings proposals have been discussed with the executives concerned before finalizing the projects.

The contents of the report are based solely on the data provided by Baba Educational Society Institute of Paramedical College of Nursing officials during the energy audit.

The management should implement the suggestions made in the report after verifying requisite safety aspects.

Methodology for Energy Audit:

The following is a list of general procedure and information undertaken during the energy audit:

- General information of the site.



- Baseline energy description.
- Past energy consumption bills which include electricity bills.
- On site data collection
- Energy analysis of different sectors.
- Recommendation of energy conservation measures.

The primary goal of the energy audit was to identify sources and areas of potential energy savings and cost saving throughout the Plant by measures of optimization, replacement, retrofitting, and on the other hand, to also provide recommendations on operational and maintenance practices improvements.


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Chapter 02: Energy Consumption Details

List of equipment present in the campus:

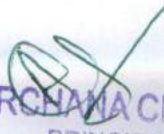
Rating of Transformer (in KVA)	63KVA
Year of installation of the Transformer	2020
Rating of DG Set (in KVA)	Kirloskar, DG, Generator (45 KVA, 30KVA, 12 KVA)
Rating of Capacitor Bank (if present)	NA
Capacity of Solar Power Plant (if installed)	50KVA

The main areas of energy consumption as observed during the audit are as follows:

- Air Conditioners
- Lighting & Fans
- Motors & Pumps
- Desktops & Printers

The main sources of energy to meet the required consumptions are as follows:

- Electricity supply from Madhyanchal Vidyut Vitaran Nigam Ltd.
- DG set of rating Kirloskar DG, Generator (45 KVA, 30 KVA, 12 KVA)
- Solar power plant of capacity 50KVA

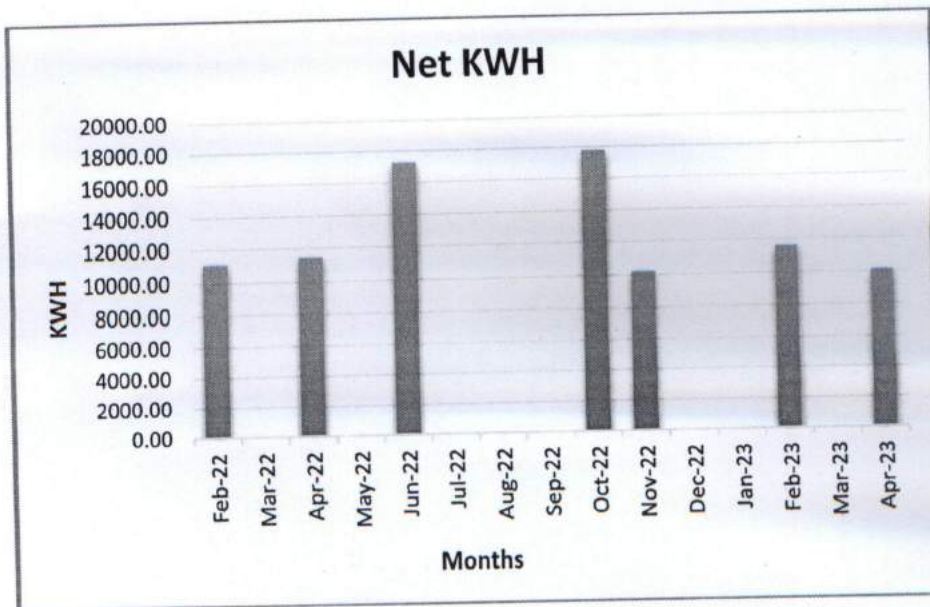

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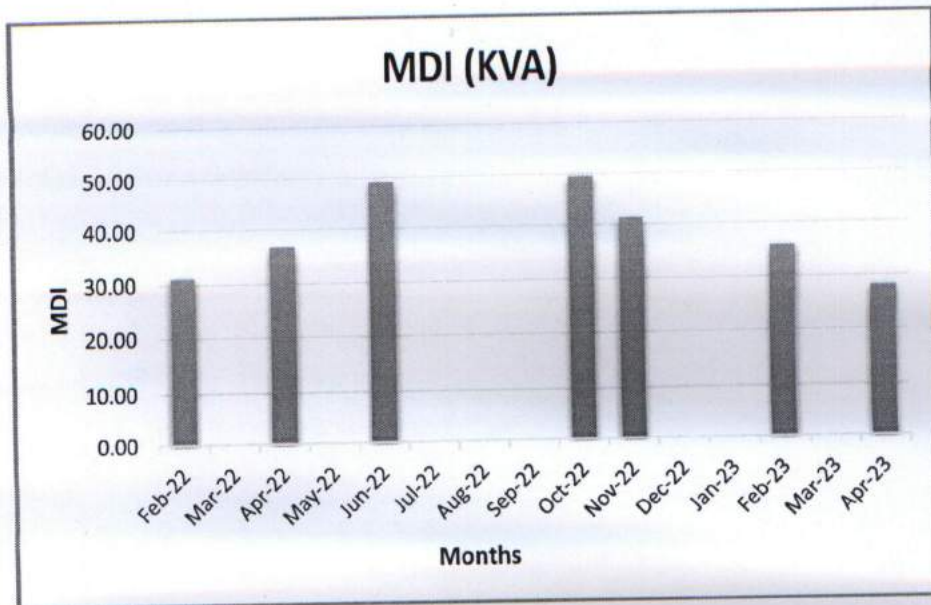
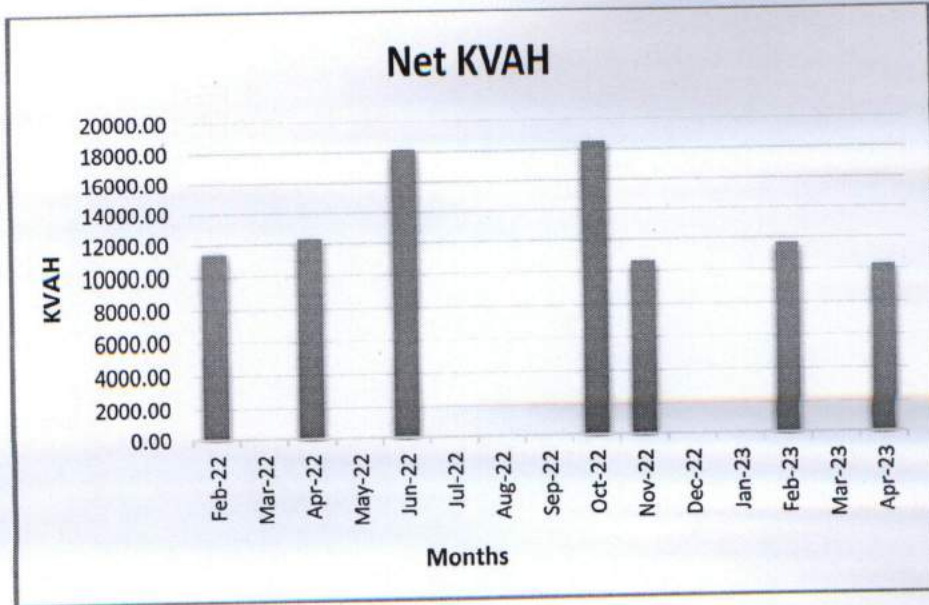
Consumption pattern for energy is given below:


Available electricity bills for the year were collected and following is the summary.

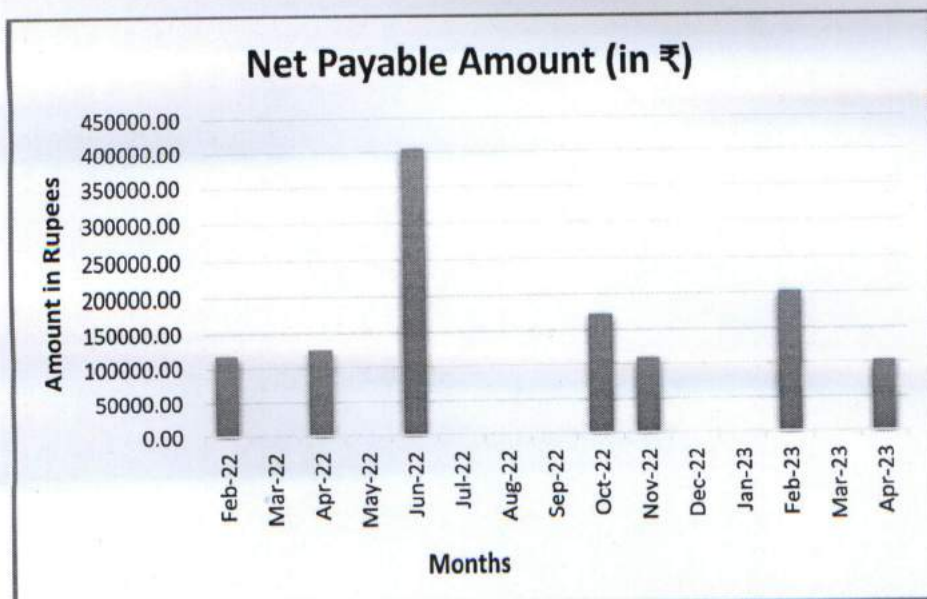
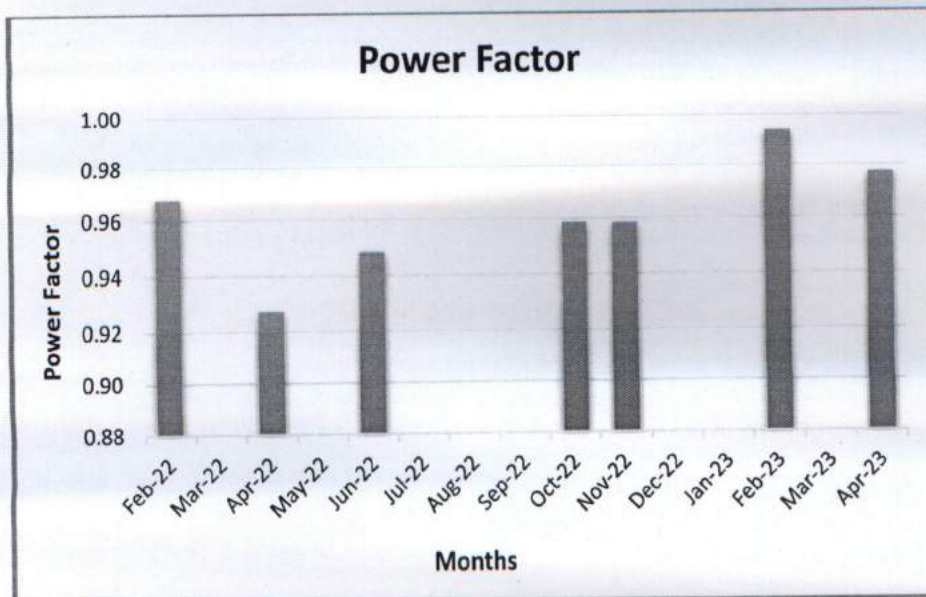
Months	Net KWH	Net KVAH	MDI (KVA)	Power Factor	Net Payable Amount (in ₹)
Feb-22	11090.40	11454.80	31.36	0.97	117257.00
Apr-22	11438.40	12338.60	36.72	0.93	125491.00
Jun-22	17213.20	18139.00	49.00	0.95	406093.00
Oct-22	17750.40	18518.00	49.56	0.96	174196.00
Nov-22	10226.80	10669.60	41.30	0.96	109511.00
Feb-23	11611.20	11682.80	35.82	0.99	204174.00
Apr-23	10078.80	10310.80	28.16	0.98	102888.00



(Signature)
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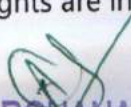
Chapter 03: Lighting System

Energy efficient LED lights and conventional lights are used in the campus. Following is the summary of lights installed in the campus:

Type of lights (LED/CFL/Conventional Bulb/Tube Light)	Location	Rating	Quantity	Number of Hours being turned on
LED BULB	Academic Block	80 W	5	8
		12 W	13	5
	Administrative Block	12 W	2	5
	Hostel/ Mess	09 W	127	16
		12 W	4	16
Simulation Lab	09 W	4	18	
LED TUBE LIGHT	Academic Block	20 W	39	6
	Administrative Block	20 W	26	16
	Hostel/Mess	20 W	42	16
TUBE LIGHT	Academic Block	40 W	39	8
	Administrative Block	40 W	20	12
	Hostel/ Mess	40 W	93	16
SODIUM LIGHT	Campus	100 W	6	12
CONCEALED LIGHT	Simulation Lab	12 W	134	6
	Administrative Block	12 W	82	8

Observation:

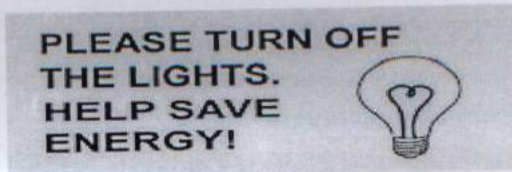
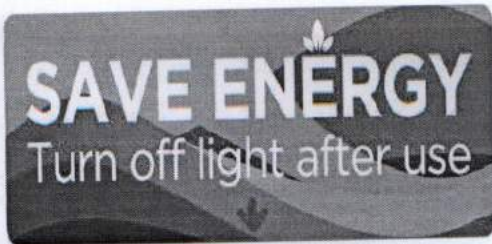
It was observed that energy efficient LED lights are installed in some parts of the campus.



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Recommendation:

- College management needs to replace all the conventional lights/Sodium Lights/Fluorescent Tube lights with LED lights.
- Sticker to SWITCH OFF LIGHT and SAVE ENERGY to be displayed.
- Regular cleaning of light fixtures to be done to get maximum lux level.




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Chapter 04: Pumps and Motors

Pump is generally used for pumping of ground water to the water tank. The details of the pumps are given below:


Name of Pump and make	Running Hours	Rated Capacity in KW	Flow Rate	RPM
Motor Pump – 04 Qty Varuna Hindustan	05	1.5	-	2820

Observation:

All pumps and motors are functioning properly and well maintained.

Recommendation:

Proper maintenance and upkeep of pump and motor to be done.


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Chapter 05: Air Conditioning

Windows and Split ACs are used in facility for air conditioning. Following is the list of ACs present in the campus:

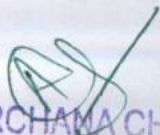
Type of AC (Windows/Split/Package and Location)	Capacity in Ton	Whether any star rating available	Set Temperature	Running Hours	Whether AC performance is satisfactory (Yes/No)
Split AC Director Office	2.5	5	22	NA	YES
Split AC Principal Office	1.5	0	24	24	Yes

Observation:

- All air conditioners are found to be functioning properly and well maintained.

Recommendation:

- All doors to be kept closed while using the air conditioners and regular annual service of AC's should be carried out.
- Set Temperature of Air Conditioner shall be maintained at 26°C.
- A reduction in 1°C set point temperature, the energy cost comes down by 5%. By carefully selecting the seasonal temperature in different areas as per requirement considerable saving on account of power consumption can be achieved.
- Whenever Air Conditioners are replaced in future, BEE 5 star rated air conditioners shall be considered which are energy efficient.

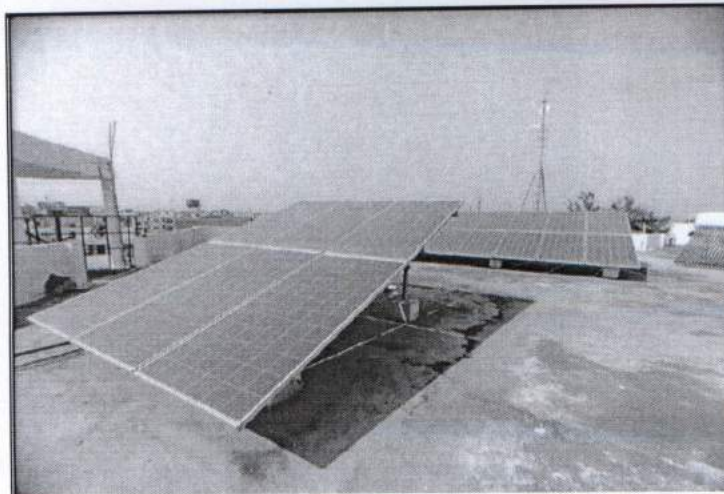

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Photographic Evidence

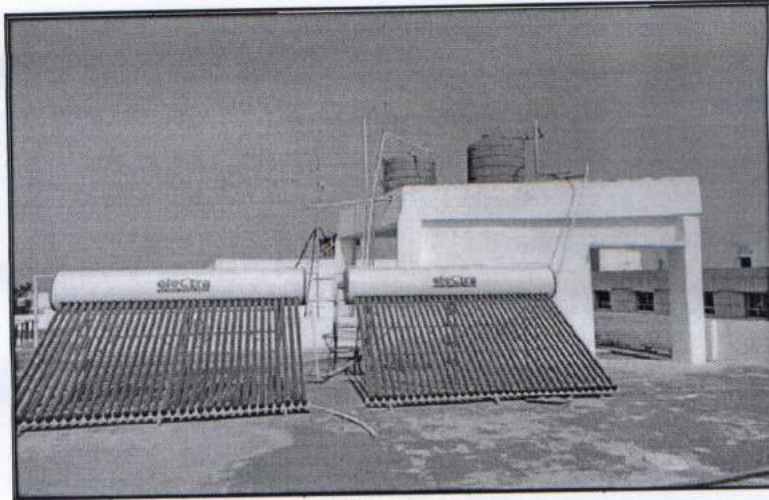


DG Set

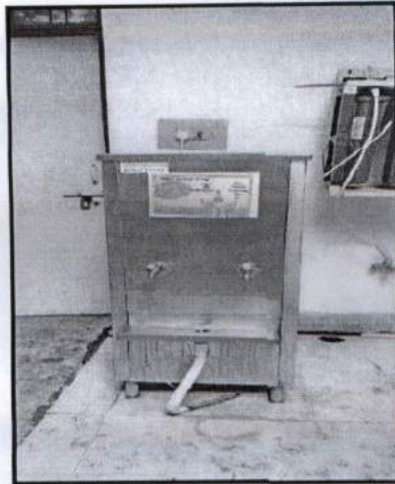


Solar Panel



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Solar Heater



Water Coolers


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Conclusion

The energy audit conducted at Baba Educational Society Institute of Paramedical College of Nursing has revealed that college is doing good work in having sustainable college. Energy efficient LED lights are installed in most of the campus. To further reduce energy consumption, college should implement the recommendation made in report.

End of Report

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DISCLAIMER

All information contained in this report is based on the data available and observations made during the audit. All recommendations made in this audit report should be duly evaluated by the management before implementation.

Elion Technologies and Consulting is not liable for any damages incurred by the organization through implementation of the energy saving proposals either to it or to any third party getting impacted by the implementation of this report.

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