



ENERGY AUDIT REPORT FOR ST. WILFRED'S PG COLLEGE



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Table of Contents

Content	Page No.
Acknowledgement	3
Site Information	4
Executive Summary	5
Chapter-01 Introduction	7
Chapter-02 Energy Consumption & Analysis	9
Chapter-03 Lighting System	13
Chapter-04 Pumps & motors	16
Chapter-04 Air Conditioning	17
Photographic Evidence	19
Conclusion	22
Disclaimer	23



Acknowledgement

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to St. Wilfred's PG College 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.



Site Information

Name of College	St. Wilfred's PG College
College Address	Sector-10, Meera Marg, Madhyam Marg, Mansarovar, Jaipur 302020
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	1 st August 2023
Year of Audit	2023 – 2024
Site Team who participated in the Study	Dr. Kapila Parihar (Principal)
Main Energy Consuming Machines/Equipments considered for Energy Audit	<ul style="list-style-type: none">• Lighting & Fans• Air Conditioners• Motors & Pumps• Desktops & Printers



Executive Summary

St. Wilfred's PG College has its campus in Jaipur the capital city of Rajasthan and the famous tourist and business city in north-western India. The campus is located around the prime location of Jaipur and is well connected with all parts of the city. St. Wilfreds is driven by the spirit of innovation-led research.

St. Wilfred's PG College offers a brilliant group of courses in all the fields. The new age of technology focuses on the changing needs of industry and jobs in preparing our students for successful careers by offering new age specializations.

St. Wilfreds has its campus in Jaipur the capital city of Rajasthan and the famous tourist and business city in north-western India. The Wilfreds campus combines unique classical architecture and thoughtful layout and landscaping to create a perfect learning ecosystem. The campus is located around the prime industrial and institutional hub of Jaipur and is well connected with all parts of the city. St. Wilfreds is driven by the spirit of innovation-led research. This is spelt out in infrastructure as well as practices. The multifaceted research encompasses subject-specific exploration as well as the contexts of the business environment in which our students will operate and perform. Wilfreds is known for a strong research culture and close industry linkages.

In order to empower the students with the latest & prevailing technological skills, we have collaborated with industry leaders like Google Cloud, Microsoft, Amazon Web Services. Through these alliances, we could not only get the industry experts on board, which is otherwise difficult to deploy for the education ecosystems, but also attained augmented innovation through knowledge exchange. Wilfreds aims at creating valuable resources for industry and society through its interventions in creation of research and innovative culture, academic and professional enhancement and cultural enrichment.

List of courses offered by the institute:

- B.A
- B.SC
- B.COM
- BBA
- BCA
- M.A.
- M.SC
- M.COM
- MHRM

ST. WILFRED'S PG COLLEGE

Madhyam Marg, Mansarovar, Jaipur
Energy Audit Report No: ENEA01082023



Electricity is supplied by Jaipur Vidyut Vitaran Nigam Limited and a solar power plant of capacity 6KW is present in the college.

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



Chapter 01: Introduction

St. Wilfred's PG College 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 Detailed Energy audit on 1st August 2023.

This report is on the energy audit carried out St. Wilfred's PG College. 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 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 St. Wilfred's PG College 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 includes electricity bills.



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- 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.



Chapter 02: Energy Consumption Details

List of equipments present in the campus:

Rating of Transformer (in KVA)	187
Year of installation of the Transformer	2015
Rating of DG Set (in KVA)	NA
Rating of Capacitor Bank (if present)	NA
Capacity of Solar Power Plant (if installed)	60KW

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

- Air Conditioners
- Lighting & Fans
- Desktops & Printers

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

- Electricity supply from Power Distribution Company.
- Solar Power Plant of capacity 60KW.

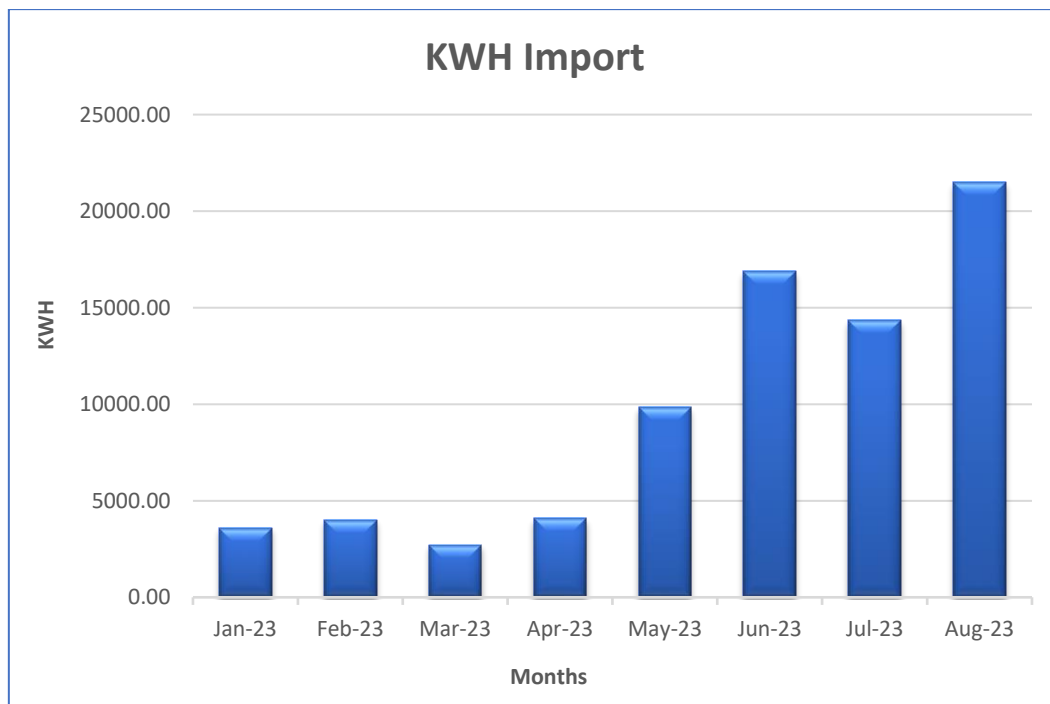
Consumption pattern for energy is given below:

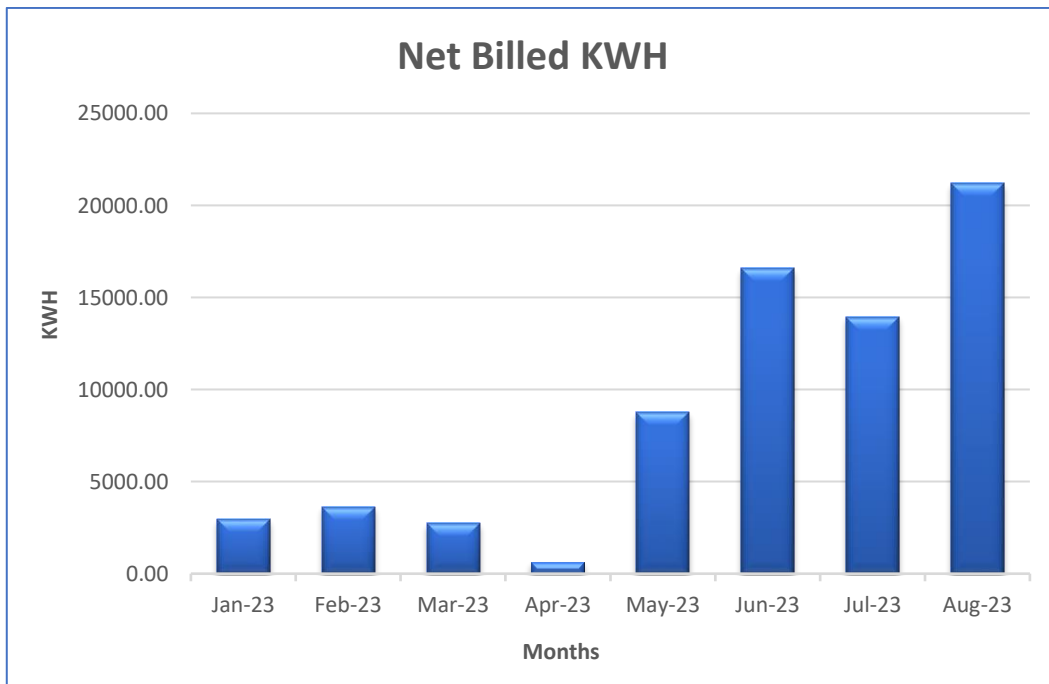
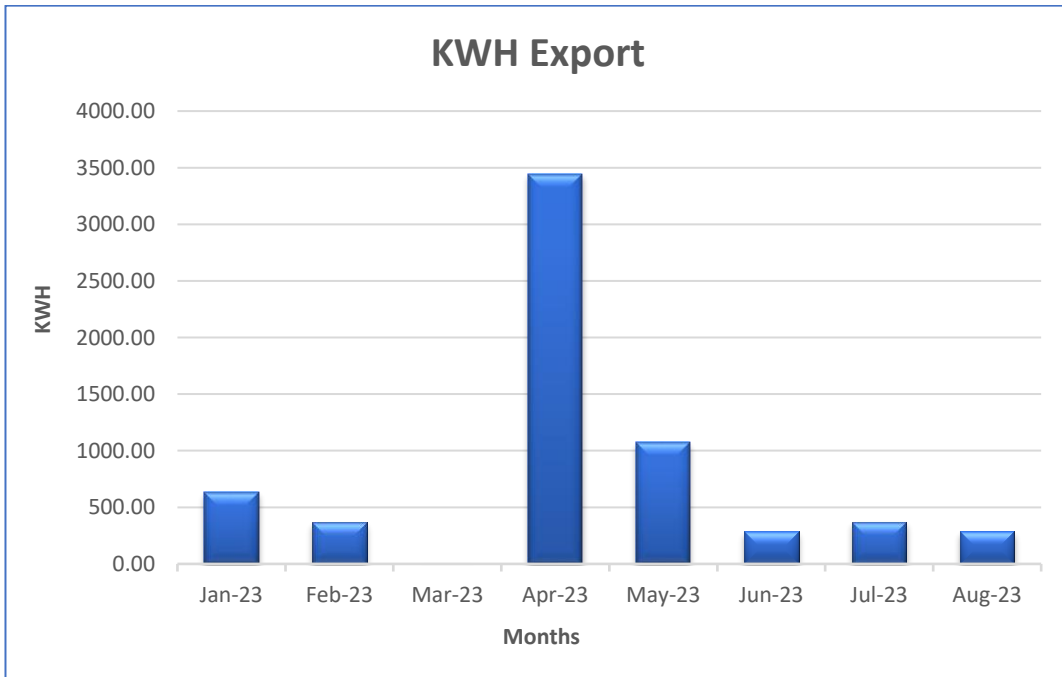
Available electricity bills for the past year were collected and following is the summary. Some of the electricity bills for the period are missing.

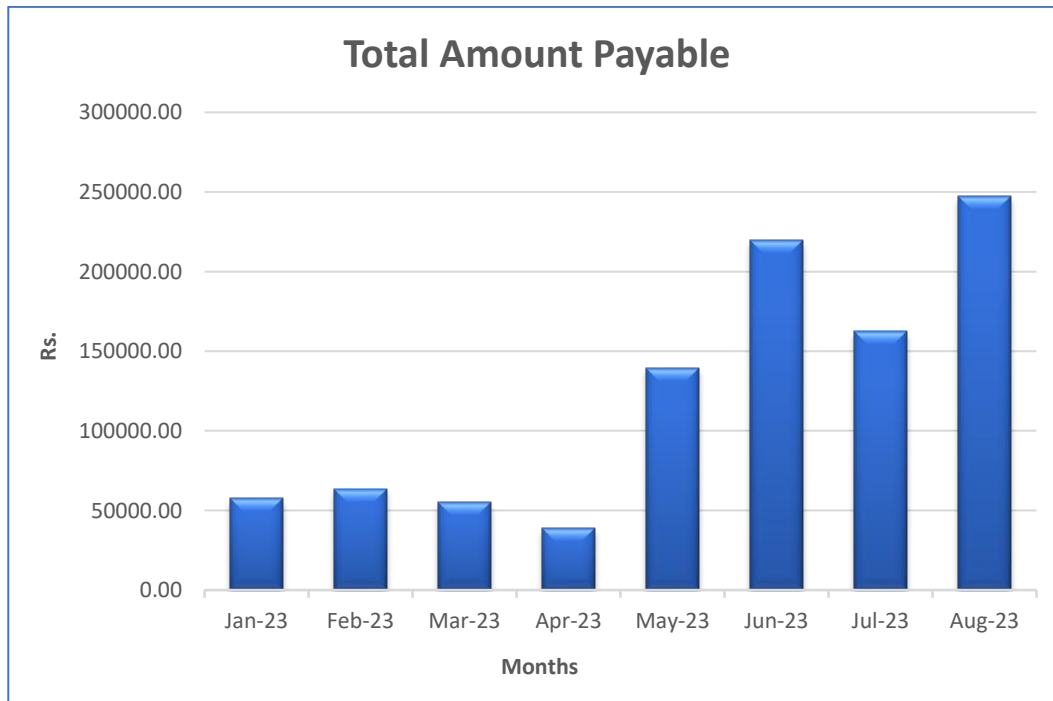


Months	KWH Import	KWH Export	Net Billed KWH	Total Amount Payable
Jan-23	3596.10	630.00	2966.10	57394.00
Feb-23	4009.50	366.00	3643.50	63065.00
Mar-23	2726.80	0.00	2726.80	54899.00
Apr-23	4086.00	3447.00	639.00	38738.00
May-23	9826.20	1074.00	8752.20	139601.00
Jun-23	16869.30	285.00	16584.30	219549.00
Jul-23	14325.00	372.00	13953.00	162630.00
Aug-23	21479.40	288.00	21191.40	247326.00

Average Net KWH Consumption	8807.04
Average cost of electricity per month (Rs.)	122900.25
Cost per Unit (Rs./KWH)	13.95









Chapter 03: Lighting System

Following is the list of lights installed in the campus at various locations:

Type Of Lights (Led/Cfl/Conventional Bulb/Tube Light)	Location	Rating	Quantity	Number Of Hours Being Turned On
Led Tube Lights	G1 Office	20w	4	8 Hrs
Led Tube Lights	G2 Office	20w	5	8 Hrs
Led Tube Lights	G3 Office	20w	6	8 Hrs
Led Tube Lights	G4 Sports Room	20w	5	6 Hrs
Led Tube Lights	Principal Office	20w	2	8 Hrs
Led Tube Lights	Vice Principal Office	20w	2	8 Hrs
Led Tube Lights	226	20w	2	6 Hrs
Led Tube Lights	227	20w	2	6 Hrs
Led Tube Lights	228	20w	3	6 Hrs 6 Hrs
Led Tube Lights	229	20w	3	6 Hrs
Led Tube Lights	230	20w	3	6 Hrs
Led Tube Lights	231	20w	3	6 Hrs
Led Tube Lights	232	20w	2	6 Hrs
Led Tube Lights	233	20w	3	6 Hrs
Led Tube Lights	234	20w	2	6 Hrs
Led Tube Lights	235	20w	3	6 Hrs
Led Tube Lights	236	20w	2	6 Hrs
Led Tube Lights	237	20w	2	6 Hrs
Led Tube Lights	238	20w	3	6 Hrs
Led Tube Lights	239	20w	2	6 Hrs
Led Tube Lights	240	20w	3	6 Hrs
Led Tube Lights	202	20w	3	6 Hrs
Led Tube Lights	203	20w	2	6 Hrs
Led Tube Lights	204 Comp. Lab	20w	5	6 Hrs
Led Tube Lights	205	20w	3	6 Hrs
Led Tube Lights	207	20w	3	6 Hrs
Led Tube Lights	209	20w	3	6 Hrs
Led Tube Lights	210 Comp. Lab	20w	3	6 Hrs
Led Tube Lights	211	20w	3	6 Hrs
Led Tube Lights	212 Comp. Lab	20w	5	6 Hrs
Led Tube Lights	301	20w	2	6 Hrs
Led Tube Lights	302	20w	2	6 Hrs

ST. WILFRED'S PG COLLEGE

Madhyam Marg, Mansarovar, Jaipur
 Energy Audit Report No: ENEA01082023



Led Tube Lights	303	20w	3	6 Hrs
Led Tube Lights	304	20w	3	6 Hrs
Led Tube Lights	305	20w	3	6 Hrs
Led Tube Lights	306 Geog Lab	20w	5	6 Hrs
Led Tube Lights	307 Geology Lab	20w		6 Hrs
Led Tube Lights	308 Psychology Lab	20w	4	6 Hrs
Led Tube Lights	310	20w	2	6 Hrs
Led Tube Lights	312	20w	3	6 Hrs
Led Tube Lights	401	20w	3	6 Hrs
Led Tube Lights	402	20w	2	6 Hrs
Led Tube Lights	403	20w	3	6 Hrs
Led Tube Lights	404	20w	3	6 Hrs
Led Tube Lights	406	20w	3	6 Hrs
Led Tube Lights	407	20w	3	6 Hrs
Led Tube Lights	408	20w	3	6 Hrs
Led Tube Lights	409	20w	3	6 Hrs
Led Tube Lights	410 Library	20w	10	6 Hrs
Led Tube Lights	411	20w	2	6 Hrs
Led Tube Lights	412	20w	3	6 Hrs
Led Tube Lights	413	20w	2	6 Hrs
Led Tube Lights	501	20w	3	6 Hrs
Led Tube Lights	502	20w	2	6 Hrs
Led Tube Lights	503	20w	2	6 Hrs
Led Tube Lights	504	20w	2	6 Hrs
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Led Tube Lights	514	20w	3	6 Hrs
Led Tube Lights	516	20w	3	6 Hrs
Led Tube Lights	517	20w	2	6 Hrs
Led Tube Lights	518	20w	2	6 Hrs
Led Tube Lights	519	20w	2	6 Hrs
Led Tube Lights	520	20w	3	6 Hrs
Led Tube Lights	207 Av Room	20w	5	6 Hrs
Led Tube Lights	Seminar Hall	20w	10	6 Hrs



Observation:

It was observed that energy efficient LED lights are installed in the campus. College management has replaced all the conventional lights such as fluorescent lights, CFL etc with LED lights which is a great initiative.

Recommendation:

- Sticker to SWITCH OFF LIGHT and SAVE ENERGY to be displayed.
- Regular cleaning of light fixtures to be done to get maximum lux level.





Chapter 04: Pumps and Motors

The details of the pumps used in the campus are given below:

Name of Pump and make	Running Hours	Any VFD	Rated Capacity in KW	Flow Rate	Head	RPM
AASHIRWAD	3	NA	2 HP	6 LPS	NA	2000

Observation:

All pumps and motors are functioning properly and well maintained.

Recommendation:

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



Chapter 05: Air Conditioning

Split and Window Air Conditioners are used in the 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- Principal Office	2	3	26	6 Hrs	Yes
Split- Principal Office	2	3	26	6 Hrs	Yes
Split- Windows G1	2	3	26	6 Hrs	Yes
Windows G2	2	3	26	6 Hrs	Yes
Windows G3	2	3	26	6 Hrs	Yes
Windows G4	2	3	26	6 Hrs	Yes
Windows - 226	2	3	26	6 Hrs	Yes
Windows - 227	2	3	26	6 Hrs	Yes
Windows - 228	2	3	26	6 Hrs	Yes
Windows - 229	2	3	26	6 Hrs	Yes
Windows - 230	2	3	26	6 Hrs	Yes
Windows - 231	2	3	26	6 Hrs	Yes
Windows - 236	2	3	26	6 Hrs	Yes
Windows - 202	2	3	26	6 Hrs	Yes
Windows - 203	2	3	26	6 Hrs	Yes
Windows - 204	2	3	26	6 Hrs	Yes
Split - 205	2	3	26	6 Hrs	Yes
Split - 207	2	3	26	6 Hrs	Yes
Windows - 210	2	3	26	6 Hrs	Yes
Windows - 211	2	3	26	6 Hrs	Yes
Windows - 212	2	3	26	6 Hrs	Yes
Split - 312	2	3	26	6 Hrs	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 to get desired efficiency and energy savings.
- 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 highly efficient.



Photographic Evidence



Transformers



Air Conditioners



Lighting



Conclusion

The energy audit conducted at St. Wilfred's PG College has revealed that college is doing good work in having sustainable college. To further reduce energy consumption, college should implement the recommendation made in report.

The recommended control measures were based on observation and experience of the energy audit team.

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.

No warranty, guarantee, or representation, either expressed or implied, is made as to the correctness or sufficiency of any representation contained herein. This report may not address every possible loss potential, violation of any laws, rules or regulations, or exception to good practices and procedures. The absence of comment, suggestion, or recommendation does not mean the property or operation(s) is in compliance with all applicable laws, rules, or regulations, is engaging in good practices and procedures, or is without loss potential. No responsibility is assumed for the discovery and/or elimination of hazards that could cause accidents or damage at any facility that is subject to this report.

Elion Technologies & Consulting Pvt Ltd

Certificate

This is to certify that Energy Audit at **St. Wilfred's PG College, Sector-10, Meera Marg, Madhyam Marg, Mansarovar, Jaipur, 302020** was carried out for the year **2023 - 24**.

It is found that sustainable measures are taken by the campus in reduction of its energy consumption. Several measures such as installation of solar power plant and installation of LED lights are taken by college management for promoting energy efficiency.

Audit Date – 01/08/2023
Valid Up to – 31/07/2024


Audit Officer



Certificate Number
EA/2023/SWPGC