POORNIMA
COLLEGE OF ENGINEERING
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CELEBRATING 25 YEARS OF EXCELLENCE

Reports on Environment and Energy Audits Submitted By the Auditing Agency

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ENVIRONMENT AUDIT REPORT
FOR
POORNIMA COLLEGE OF ENGINEERING
ISI - 6, RIICO INSTITUTIONAL AREA, GONER ROAD, SITAPURA, JAIPUR - 302022

Carried For
Academic Session
(2023-2024)

Carried Out By

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CONTENTS

ACKNOWLEDGEMENT

Elion Technologies and Consulting Pvt Ltd thanks the management of Poornima College of Engineering, Jaipur for assigning this important work of Environmental Audit. We appreciate the co-operation to our team for completion of study.

For giving us necessary inputs to carry out this very vital exercise of Environment Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

CONCEPT

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environmental Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:
"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The European Commission, in its proposed regulation on environmental auditing, has also adopted the ICC definition of Environmental Audit.

INTRODUCTION

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

Environmental Management Systems (EMS) is very popular in the industrial sector, but the general belief is that EMS is something pertaining to industries only. Other parts of the world have started adopting compatible environmental management systems either voluntarily or for promoting standards by external certification. International environmental standards do not suit the existing Indian educational system.

A very simple indigenized system has been devised to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance. This innovative scheme is user- friendly and totally voluntary. The environmental monitoring system helps the institution to set environmental examples for the community and to educate young learners. It can be adapted to urban and / or rural situations.

OVERVIEW OF INSTITUTE

Poornima College of Engineering, the pioneer institute of Poornima Group was established in 2000 with the aim of imparting pragmatic technical education. In its magnificent journey of 21 years, PCE has set benchmarks and reached new pinnacles in engineering education with dedication, perseverance and devotion. With student strength of approx. 2,500 studying ten specializations of engineering (CSE, CSE (AI). AI & DS, CSE (Cyber Security, CSE (Regional Language), ECE, EE, ME, Civil & IT), more than 3.5 Lacs square feet of built up area, highly qualified faculties, state of the art infrastructure, good placements and industry-led curriculum, PCE is marching ahead of others with tremendous growth since its inception.

PCE is spearheading its outstanding voyage with the motto 'Success is not a destination, it's a journey'. Poornima College of Engineering, Jaipur has been ranked 2nd under QIV Ranking of Rajasthan Technical University, Kota since 2017. The QIV Ranking is based on primarily upon Academics, University results, Placements & Alumni. PCE has implemented Outcome Based Education systems and processes to strategically monitor progress of every individual student right from the admission to exit. There are beyond curriculum contents and activities planned every year to bridge the gap between industry and academia. This has been demonstrated through continuous enhancement in placement number and package.

Vision

To create knowledge based society with scientific temper, team spirit and dignity of labour to face the global competitive challenges.

Mission

To evolve and develop skill based systems for effective delivery of knowledge so as to equip young professional &commitment to excellence in all spheres of life.

Quality Policy

To provide quality education through faculty development, updating of facilities and continual improvement meeting university norms and keeping stakeholders satisfied.

Elion Technologies and Consulting Pvt Ltd (Elion) team carried out remote audit of premises. The audit was carried out using online meeting platform google hangout, prior to Audit questionnaire and checklists was shared with the client. 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.

Campus Information

List of Course Offered by the institute

1. B. Tech Computer Engineering
2. B. Tech Computer Engineering (Regional course)
3. B. Tech Information Technology
4. B. Tech Civil Engineering
5. B. tech Mechanical Engineering
6. B. tech Electronics & Communication Engineering
7. B. Tech Electrical Engineering
8. B. tech Computer science and Engineering(Artificial Intelligence)
9. B. tech Computer science and Engineering(Artificial Intelligence and Data Science)
10. B. tech Computer science and Engineering(Cyber Security)

List of the Facility Building
Total Area: **6 acre**
Green Area: 30000 square feet approx.

Building Name	Areas (Sq. m)	Number of Floors
Admin Block	10355	5
Central Block	9751	5
Admission Block	1028	2
1st year Block	6400	5
Boys Hostel 1	2240	4
Boys Hostel 2	5326	6
Boys Hostel 3	2149	6
Boys Hostel 4(Guest House)	2240	5
Girls Hostel 1	2100	5
Girls Hostel 2	2880	5

List of personal interacted during audit:

Name	Designation
Dr. Pankaj Dhemla	Vice Principal
Mr. Girdhari	Estate in charge

Mr. Tara Chand	Executive (Infrastructure)
Mr. Amit Gupta	Chief Proctor

AUDIT OBJECTIVES

The broad aims/ benefits of the eco-auditing system would be –

- Environmental education through systematic environmental management approach
- Improving environmental standards
- Benchmarking for environmental protection initiatives
- Reduction in resource use
- Financial savings through a reduction in resource use
- Curriculum enrichment through practical experience
- Development of ownership, personal and social responsibility for the university campus and its environment
- Enhancement of university profile
- Developing an environmental ethic and value systems in young people

EXECUTIVE SUMMARY

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

This environmental audit of institute is for NACC affiliation; QS Program and doing their bid towards environmental protection and environmental awareness at local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.

AREA OF IMPROVEMENTS

- Air Quality monitoring programme should be implemented.
- Lights “switch off drill” shall be conducted at institute as per availableschedule.
- Environment Policy shall be adopted by the institute.

ENVIRONMENTAL AUDIT - QUESTIONARE

The areas of eco/environmental/green auditing to be followed/practiced by participating institutions:

I. Waste Minimization and Recycling
II. Greening
III. Energy Conservation
IV. Water Conservation
V. Clean Air
VI. Animal Welfare
VII. Environmental Legislative
VIII. General Practices

Does any Environmental Audit conducted earlier?
No, Environment Audit is not conducted previously.

What is the total permanent population of the Institute?

	Male	Female	Total
Students	1693	354	2047
Teachers	141	56	197
Non-Teaching Staff	81	15	96
Sub Total	1915	425	2340
Approximate Number of additional Visitors (Per day)			40
What is the total number of working days of your campus in a year?			260

Where is the campus located?
The campus is located in Sitapura, Jaipur.

Which of the following are available in your institute?

1	Garden area	-Yes
2	Playground	-Yes
3	Kitchen	-Yes
4	Toilets	-Yes
5	Garbage Or Waste Store Yard	-No
6	Laboratory	-Yes
7	Canteen	-Yes
8	Hostel Facility(numbers)	-Yes(06-Hostels)
9	Guest House	-Yes (1 No.)

Which of the following are found near your institute?

1	Municipal dump yard	-No
2	Garbage heap	-No
3	Public convenience	-Yes
4	Sewer line	-Yes
5	Stagnant water	-No
6	Open drainage	-No
7	Industry – (Mention the type)	-Education Institute
8	Bus / Railway station	-No
9	Market / Shopping complex / Public halls	-Yes

I WASTE MINIMIZATION AND RECYCLING

1.	Does your institute generate any waste? If so, what are they?	-Yes Dry Waste, Kitchen Waste, Left Over Food
2.	What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.)	-Dry Waste-90 Kg/month -Kitchen Waste-300 Kg/month -Left Over-470 Kg/month
3.	How is the waste generated in the institute managed? By 1 Composting 2 Recycling 3 Reusing 4 Others(specify)	-Kitchen waste and left over is collected by a company to compost the organic waste -Dry waste is collected by a vendor who is recycling and giving back in the form of stationary -All the dry waste is send to vendor for recycling
4.	Do you use recycled paper in institute?	Yes, send by vendor who collects paper waste
5.	Do you use reused paper in institute?	-Yes, printout for internal work is done only on one side use paper
6.	How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, Please specify.	By motivating staff and students through various activities. We have taken initiatives in the form of club “Helping hands” where students do various activities to spread the message
7.	Can you achieve zero garbage in your Institute? If yes, how?	Yes, For left over -We have put fine of Rs 100 which resulted significant reduction in in leftover Organic waste – Giving to vendor

		for composting Dry waste – giving to vendor for reuse and providing recycled stationary

II GREENING THE CAMPUS

1.	Is there a garden in your institute?	-Yes
2.	Do students spend time in the garden?	-Yes
3.	Total number of Plants in Campus	Tress-265
		Shrubs-416
		Plant-199
4.	Suggest plants for your campus. (Trees, vegetables, herbs, etc.)	Neem, Jamun, Guava, Tulsi, Sheesham, Bodhi, Tree, Babul, Asoca, Banana, Curry Tree, Wild date, Palm and pomegranate
5.	Is the college campus have any Horticulture Department	yes
	Number of Staff working in Horticulture Department	2+1
6.	Number of Tree Plantation Drives organized by college per annum.(If Any)	Once per year
7.	Number of Trees Planted in Last FY.	70
	Survival Rate	40%
8.	Plant Distribution Program for Students and Community	Yes, we are distributing indoor plants to delegates who are visiting campus as guest for an event. Students are distributing plants as an activity
9.	Plant Ownership Program	Yes, In some of the events, delegates are planting by their name.

III ENERGY CONSERVATION

1.	List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.	-Electricity -LPG -Solar
2.	Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some	-Yes Awareness to users to switch off when not in use
3.	How many CFL/LED bulbs has your institute installed?	CFL-220 LED-211
4.	Are any alternative energy sources employed / installed in your institute? (photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify.	Photovoltaic cells for Solar Energy
5.	Do you run “switch off” drills at institute?	yes
6.	Are your computers and other equipment’s put on power-saving mode?	-Yes (During Work Hours)
7.	Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes	- No, All are shut down after use at the day end.

	most of the time? If yes, how many hours?	

IV WATER CONSERVATION

1.	List four uses of water in your institute	1. Drinking 2. Gardening 3. Bathing 4. Cooking 5. Washing
2.	How does your institute store water? Are there any water saving techniques followed in your institute?	-Source of water is bore wells and tankers. -Temporary storage is done with help of underground tanks. -Sensors are used in all overhead tanks and awareness among users not to waste water.
3.	If there is water wastage, specify why and How can the wastage be prevented / stopped?	- No, specific wastage of water. Any leakage found will be immediately fixed.
4.	Locate the point of entry of water and point of exit of waste water in your institute. Entry- Exit-	Entry point – Bore well located in the campus and water from tankers coming from outside Exit point – STP tank via Septic tank and filter watered goes into overhead tank used only for WC

5.	Write down four ways that could reduce the amount of water used in your institute	1. Water less urinals 2. Drip irrigation for the garden 3. Sensor based wash basins 4. awareness through posters
6.	Record water use from the institute water meter for six months (record at the same time of each day). At the end of the period, compile a table to show how many liters of water have Been used.	Yes
7.	Does your institute harvest rain water?	-Yes
8.	Is there any water recycling System.	-Yes, STP

V CLEAN AIR

1.	Are the Rooms in Campus are Well Ventilated?	Yes			
2.	Window Floor ratio of the Rooms	-			
3.	What is the ownership of the vehicles used by your school? (Please Tick ⍰only one)	Yes			
		Operator-owned vehicles			
		College-owned vehicles			
		A combination of campus-owned and operator-owned vehicles			
4.	Provide details of school-owned motorized vehicles? Sold 10 buses more than 10 years old) we are buying new buses in phased manner	Buses 6	Cars 2	Vans 1	Other
	No. of vehicles	6	2	1	-

	No. of vehicles more than five years old	2	2	1	-
	No. of Air conditioned vehicles	-	2	-	-
	PUC done	Yes	Yes	Yes	-

5.	Specify the type of fuel used by your school's vehicles:	Buses	Cars	Vans	Other
	Diesel	Yes	-	-	-
	Petrol	-	Yes	yes	
	CNG	-	-	-	-
	LPG	-	-	-	-
	Electric	-	-	-	-
6.	Air Quality Monitoring Program (If Any)	-No			
7.	Students suffer from respiratory ailments? (If Any)	-No			
8.	Details of Genset	Sudhir 500KVA 2011 make			

VI ANIMAL WELFARE

1	List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)	Cats, Squirrels, Parrots, Peacock, Pigeon, Sparrow, other birds, lizards, insects etc.
2.	How many dogs in your area have undergone Animal Birth Control - Anti Rabies (ABC - AR)?	Nil
3.	Does your institute have a Biodiversity Programme or a KARUNA CLUB?	No

VII ENVIRONMENTAL LEGISLATIVE COMPLIANCE

1.	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes -Environment Related Provisions in the Indian Constitution (1) The Water (Prevention and Control of Pollution) Act, 1974 (2) The Air (prevention and control of pollution) act, 1981 (3) The Environment (Protection) Act, 1986 • The ozone-depleting substances (regulation and control) rules, 2000. • Coastal Regulation zone notification 2018: (4) The energy conservation act, 2001 (5) Biological diversity act 2002
2.	Does your institute have any rules to protect the environment? List possible rules you could include.	Yes, • Waste Water management • Saving of potable water Recycle and reuse of organic and inorganic waste
3.	Dose Environmental Ambient Air Quality Monitoring conducted by the Institute?	Yes
4.	Dose Environmental Water and Wastewater Quality monitoring conducted by the Institute?	Yes
5.	Dose stack monitoring of DG sets conducted by the Institute?	Yes
6.	Is any warning notice, letter issued by state government bodies?	No

7.	Dose any Hazardous waste generated by the Institute? If yes explain its category and disposal method	No
8.	Dose any Bio medical waste generated by the Institute? If yes explain its category and disposal method	No

VIII GENERAL PRACTICES

1.	Are You Aware Of Any Environmental Laws Pertaining To Different Aspects Of Environmental Management?	Yes
2.	Does Your Institute Have Any Rules To Protect The Environment? List Possible Rules You Could Include.	Yes, • Waste Water management • Saving of potable water Recycle and reuse of organic and inorganic waste
3.	Does Housekeeping Schedule In Your Campus?	Yes
4.	Are Students And Faculties Aware Of Environmental Cleanliness Ways? If Yes Explain	Yes
5.	Dose Important Days Like World Environment Day, Earth Day, And Ozone Day Etc. Eminent In Campus?	-Partial
6.	Dose Institute Participated In National And Local Environmental Protection Movement?	No
7.	Dose Institute Has Any Recognition/Certification For Environment Friendliness?	-Nil
8.	Dose Institute Using Renewable Energy?	-Yes, Solar Power Plant
9.	Dose Institution Conducts A Green/Environmental Audit Of Its Campus?	-Yes

10.	Has The Institution Been Audited / Accredited By Any Other Agency Such As NABL, NABET, TQPM, NAAC Etc.?	-No

RECOMMENDATIONS

- Air Quality monitoring programme should be implemented.
- Lights “switch off drill” shall be conducted at institute as per available schedule.
- Environment Policy shall be adopted by the institute.

CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. Overall, 30% of university campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for college team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important which if implemented would further strengthen the environment setting in the college.

REFERENCE

- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle
- Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Water [Prevention & Control of Pollution] Cess Act-1977 (Amended 2003) and Rules- 1978
- The Air [Prevention & Control of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices

ANNEXURE –
PHOTOGRAPHS OF ENVIRONMENT CONSIOUSNESS

Green Campus

Tree Plantation

Solar Power Plant

Garden Area

Playground

Sewage Treatment Plant

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Quality Policy

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Electricity is supplied by Jaipur Vidyut Vittaran Nigam Limited and for backup powers supply DG Set of 500KVA are available.

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Also solar power plant of capacity 184KW is installed in the college.

Elion Technologies and Consulting Pvt Ltd team conducted the detailed Energy audit for academic session 2023-2024. The energy audit was carried out remotely by Rajesh Kumar Singadiya BEE Certified Energy Auditor (EA-7271).

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

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CHAPTER – I
INTRODUCTION

M/S PCE, Jaipur evinced interest in availing the services of Elion Technologies and Consulting Pvt Ltd for conducting remote energy audit of their premises.

Elion Technologies and Consulting Pvt Ltd team conducted the Detail Energy audit for academic session 2022-2023.

This report is on the energy audit carried out M/S PCE, Jaipur. 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 PCE, Jaipur 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:

1. General information of the plant.
2. Baseline energy description.
3. Past energy consumption bills which includes electricity bills.
4. On site data collection
5. Energy analysis of different sectors.
6. 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 – II
ACKNOWLEDGEMENT

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to M/S PCE, Jaipur 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.

CHAPTER – III
PROCESS DESCRIPTION & ENERGY CONSUMPTION DETAILS

PROCESS DESCRIPTION

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

- Motors
- Air Conditioner
- Lighting

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

- Electricity supply from Power distribution company
- DG set of 500KVA
- Solar Power Plant of 184KW

Consumption pattern for energy is given below:

ELECTRICITY CONSUMPTION PATTERN

Month	KWH	KVAH	Total Amount Payable
July-23	71530	82175	847670
Aug-23	70625	79495	838999
Sep-23	46800	47585	578434
Oct-23	75180	75490	827087
Nov-23	39380	39565	513328
Dec-23	43625	43380	550719
Jan-24	41470	41405	522363
Feb-24	42465	42605	528071
Mar-24	37470	37300	478977
Apr-24	42460	42510	535329
May-24	79310	80244	951753
Jun-24	110070	110741	1185332

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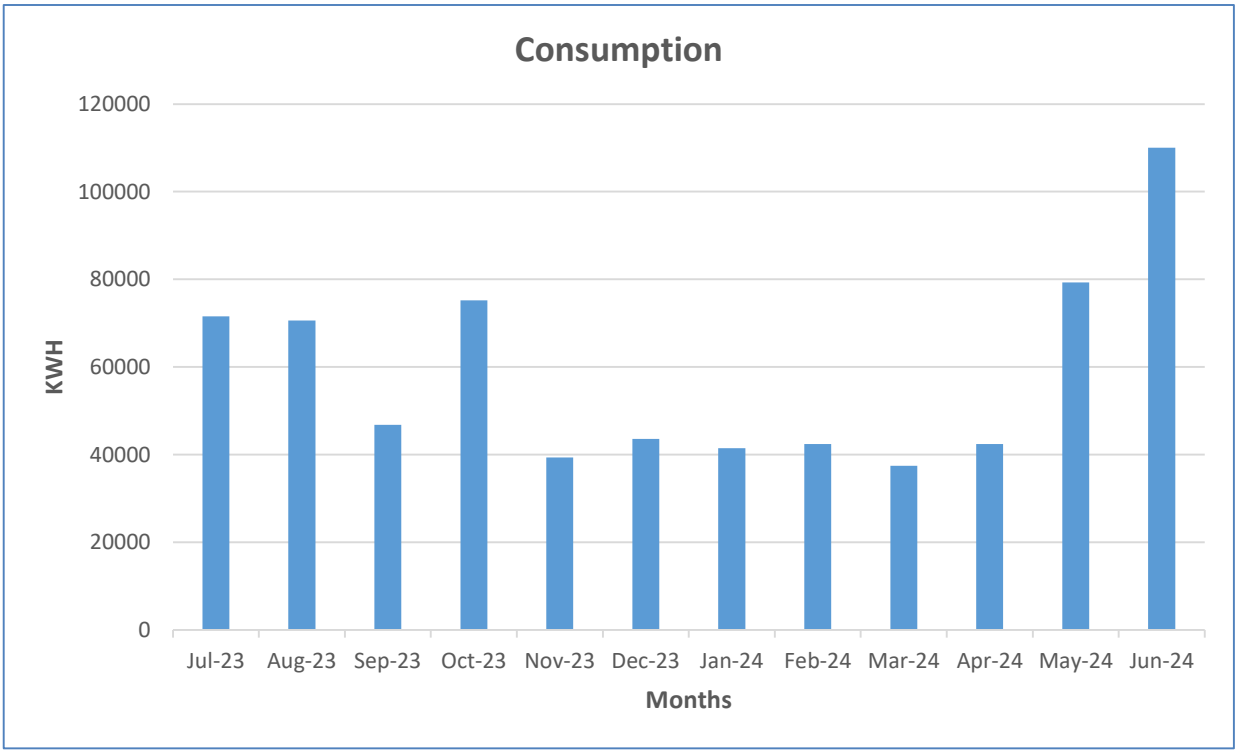

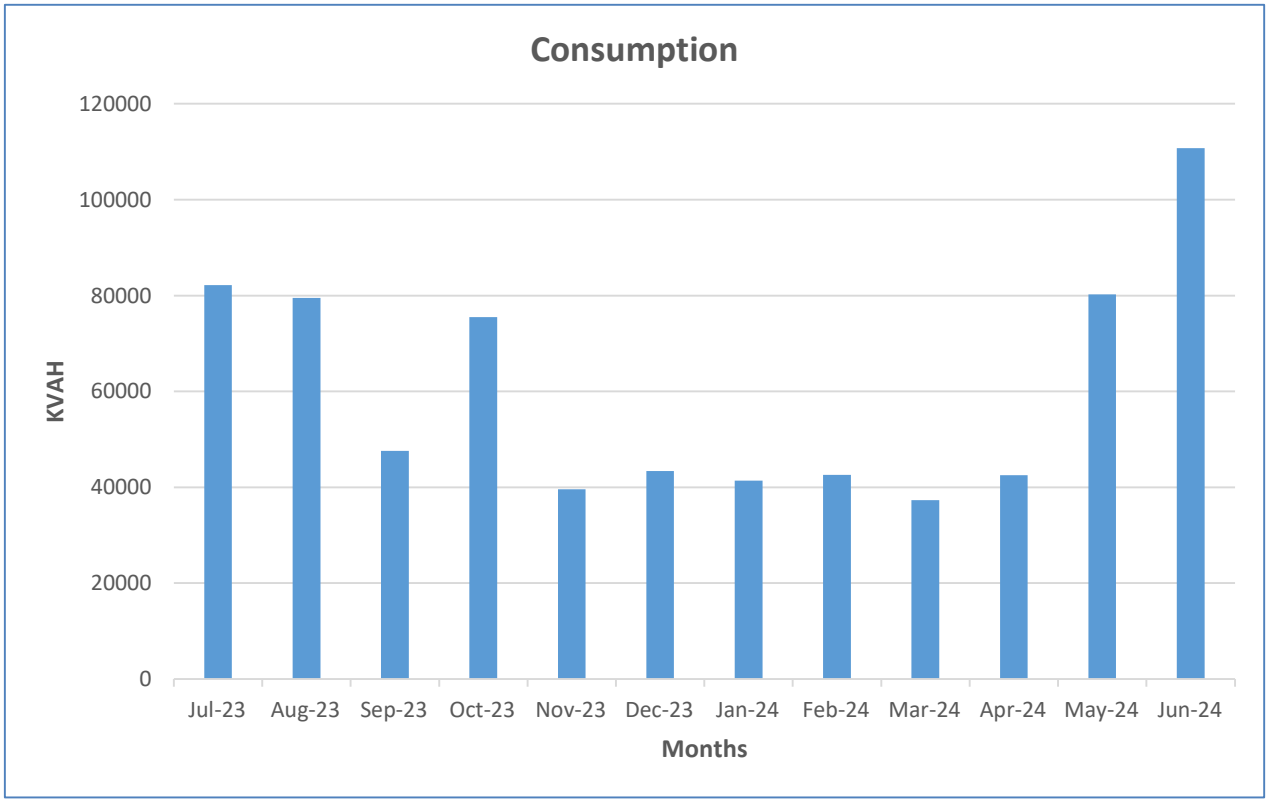

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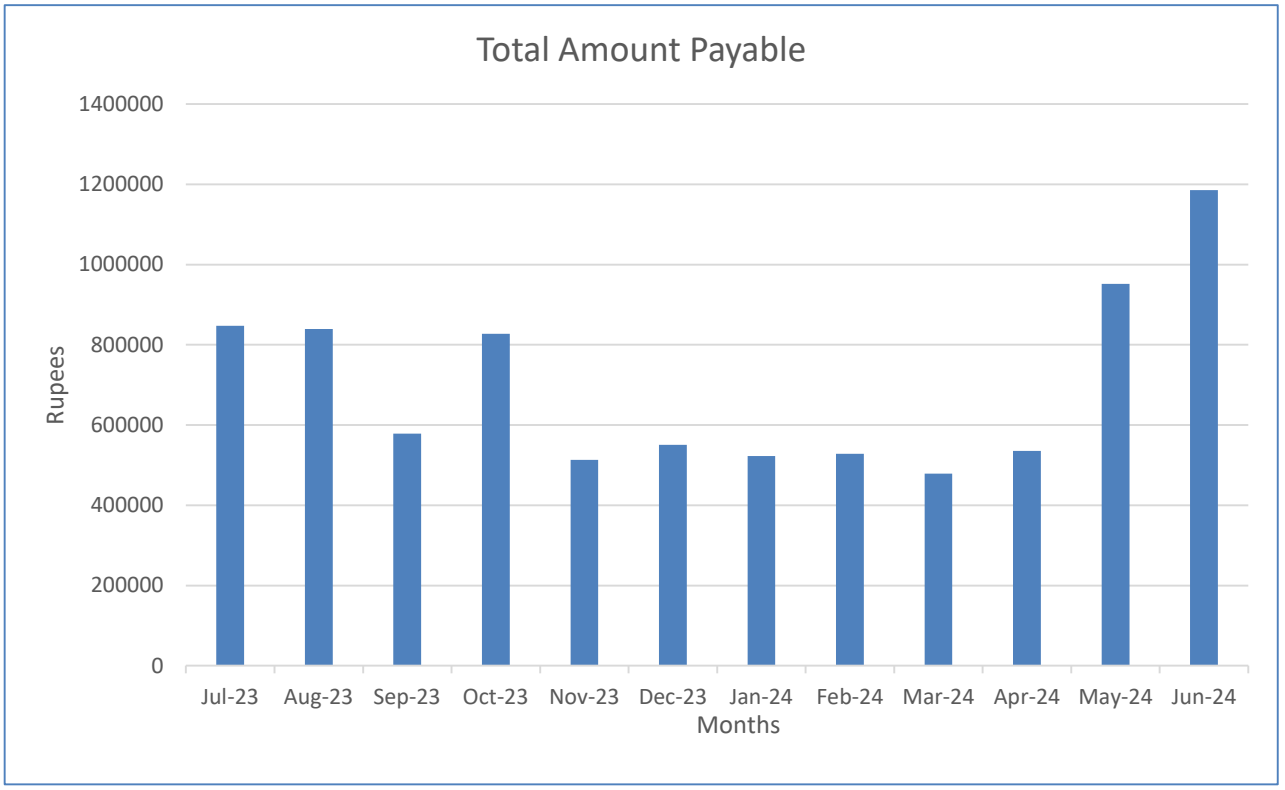

CHAPTER – IV
LIGHTING SYSTEM

The inventory of lighting was collected and following is the summary:

Type- LED/CFL/Conventional -Bulb/Tube Light	Building	Location	Rating	Qty	Number of Hours being turned on
Tube light	Admin	LGF	40W	108	6-8 hrs
Tube light	Admin	UGF	40W	53	6-8 hrs
Tube light	Admin	FF	40W	98	6-8 hrs
Tube light	Admin	SF	40W	58	6-8 hrs
Tube light	Admin	TF	40W	61	6-8 hrs
Tube light	Central building	LGF	40W	84	6-8 hrs
Tube light	Central building	UGF	40W	74	6-8 hrs
Tube light	Central building	FF	40W	101	6-8 hrs
Tube light	Central building	SF	40W	59	6-8 hrs
Tube light	Central building	TF	40W	89	6-8 hrs
Tube light	1st year Block	LGF	40W	57	6-8 hrs
Tube light	1st year Block	UGF	40W	46	6-8 hrs
Tube light	1st year Block	FF	40W	55	6-8 hrs
Tube light	1st year Block	SF	40W	52	6-8 hrs
Tube light	1st year Block	TF	40W	53	6-8 hrs
Tube light	Admission Block	GF	40W	26	6-8 hrs
Hostel 1-Tubelight	G+4	-	20	151	6-8 hrs
Hostel 2-Tubelight	G+4	-	20	151	6-8 hrs
Hostel 3-Tubelight	G+4	-	20	207	6-8 hrs
Hostel 4-Tubelight	G+4	-	20	81	6-8 hrs
Hostel 5-Tubelight	G+4	-	20	84	6-8 hrs
Hostel 6-Tubelight	G+4	-	20	89	6-8 hrs
LED	Admin	-	20	81	6-8 hrs
LED	Central building	-	20	73	6-8 hrs
LED	1st year Block	-	20	0	6-8 hrs
LED	Admission Block	-	20	57	6-8 hrs

Observation:

Most of the lighting used are tube light and LED are used in certain locations. It was informed by the college that they have stopped further purchasing of tube light. They are replacing all tube light in college in phased manner.

Recommendation:

- Tube lights to be changed to LED.

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CHAPTER – V
MOTORS AND PUMPS

Pumps are used for pumping of water. The details of the pumps and motors are given below:

PUMPS:

Name of Pump and make	Running Hours	No	Rated Capacity in HP	Flow Rate	Head	RPM
Submersible pump - Crompton	12 to 14 hrs	8	5	NA	NA	NA
Tube well pump - pluga	12 to 14 hrs	5	5	NA	NA	NA

MOTORS:

Name of Motor and make	Running Hours	No	Rated Capacity in HP	Efficiency	Ampere	RPM
Motor - Siemens	10-12 hrs in summer	2	10	NA	NA	NA
Motor - Siemens	10-12 hrs in summer	25	7.5	NA	NA	NA
Motor - Siemens	10-12 hrs in summer	2	5	NA	NA	NA
Motor - Centrifugal	10-12 hrs in summer	2	10	NA	NA	NA
Motor - Centrifugal	10-12 hrs in summer	22	7.5	NA	NA	NA
Motor - Centrifugal	10-12 hrs in summer	0	5	NA	NA	NA

Observation:

All pumps and motors are functioning properly and well maintained.

Recommendation:

Proper maintenance and upkeep of pumps and motors to be done.

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CHAPTER – VI
AIR CONDITIONING

Split and Window AC's are used in facility for air conditioning. Temperature maintained is around 24°C. Following is the summary of air conditioners installed:

S. No	Location	Capacity in ton	Star rating	Set temp	Running hours
1	Admin	1500	3 to 4	24	6-8 hrs in summer
2	Central building	2000	3 to 4	24	6-8 hrs in summer
3	1st year Block	2000	3 to 4	24	6-8 hrs in summer
4	Admission Block	1500	3 to 4	24	6-8 hrs in summer

Observation:

All air conditioners are found to be functioning properly and well maintained. The set temperature should be 24°C -26°C for efficient working.

Recommendation:

All doors to be kept closed while using the air conditioner and regular annual services of AC should be carried out.

CHAPTER – VII
FANS

Fans are installed in the institute in various blocks. Following is the summary of fans installed:

Type-LED/CFL/Conventional -Bulb/Tube Light	Building	Location	Rating	Quantity	Number of Hours being turned on
Fan	Admin	LGF	50-75	106	6-8 hrs
Fan	Admin	UGF	50-75	70	6-8 hrs
Fan	Admin	FF	50-75	59	6-8 hrs
Fan	Admin	SF	50-75	78	6-8 hrs
Fan	Admin	TF	50-75	83	6-8 hrs
Fan	Central building	LGF	50-75	87	6-8 hrs
Fan	Central building	UGF	50-75	82	6-8 hrs
Fan	Central building	FF	50-75	84	6-8 hrs
Fan	Central building	SF	50-75	74	6-8 hrs
Fan	Central building	TF	50-75	93	6-8 hrs
Fan	1st year Block	LGF	50-75	46	6-8 hrs
Fan	1st year Block	UGF	50-75	43	6-8 hrs
Fan	1st year Block	FF	50-75	59	6-8 hrs
Fan	1st year Block	SF	50-75	44	6-8 hrs
Fan	1st year Block	TF	50-75	57	6-8 hrs
Fan	Admission Block	GF	50-75	34	6-8 hrs
Hostel 1-Fan	G+4		50-75	124	6-8 hrs
Hostel 2-Fan	G+4		50-75	109	6-8 hrs
Hostel 3-Fan	G+4		50-75	179	6-8 hrs
Hostel 4-Fan	G+4		50-75	55	6-8 hrs
Hostel 5-Fan	G+4		50-75	65	6-8 hrs
Hostel 6-Fan	G+4		50-75	66	6-8 hrs

CONCLUSION

The energy audit conducted at M/S PCE, Jaipur has revealed that PCE is doing good work in having sustainable college. In house solar power plant is installed as recommended in previous report. The college is sustainable in energy consumption.To further reduce energy consumption, college should implement the recommendations made in the report.

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