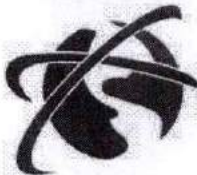


**ENERGY AUDIT REPORT
FOR
Geethanjali College of Engineering and Technology,
Cheeryal(V), Keesara(M),
Medchal(Dist.), Telangana**



For Year 2020

Carried Out By



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EXECUTIVE SUMMARY

Geethanjali College of Engineering & Technology has been structured to take head on the changing trends of technology. The idea of setting up the college emerged when no other college could cater to the needs of a student in his/her endeavor to acquire wholesome education. The very strength of Geethanjali lies in its principles of providing the right learning environment for the student who does not have to compromise throughout the learning process of becoming global citizen.

The college recognizes that the rapidly changing technological landscape would require young technocrats with an understanding of evolving technologies, but also with a global perspective. A major goal of Geethanjali is to impart a uniquely broad and interdisciplinary Engineering education of the highest academic quality. This is achieved through an integrated curriculum that consists of a highly diverse set of technical courses, interdisciplinary research projects, day-to-day interaction with industry, and preparation in entrepreneurship and personality development courses.

At Geethanjali learning pushes all boundaries of conventional thought in pursuit of understanding science in relation to the society. Every concept a Geethanjali acquires carries the inbuilt awareness of how it can be applied to render human life better.

Over the years since it was established, there has been dynamic progress at Geethanjali in all academic and research activities, and a parallel improvement in facilities and infrastructure, to keep it on par with the best institutions in India. The campus epitomizes the Geethanjali motto, "Striving towards perfection" in providing the best of infrastructure and ambience. Geethanjali keeps a keen eye on the current trends and innovations happening in the industry and offers learning methods, which are designed to meet the evolving requirements of the industry.

Electricity is supplied by Southern Power Distribution Company Of TS Limited and for backup powers supply DG Set of 125KVA and 200KVA are available.

Also solar power plant of capacity 250KW is installed in the college.



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Elion Technologies and Consulting Pvt Ltd team conducted the Detail Energy audit of the premises. The energy audit was carried out remotely by Narinder Khanna BEE Certified Energy Auditor (EA-1192).

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 GCET, Telangana 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 Detailed Energy audit of the premises.

This report is on the energy audit carried out M/S GCET, Telangana. 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 GCET, Telangana officials during the energy audit.

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


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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.

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CHAPTER – II **ACKNOWLEDGEMENT**

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to M/S GCET, Telangana 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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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 125KVA and 200KVA
- Solar Power Plant of 250KW

Consumption pattern for energy is given below:

ELECTRICITY CONSUMPTION PATTERN

125KVA			
Months	KWH	KVAH	Total amount Payable
Jan-20	7512	8404	81186
Feb-20	8628	9606	99625
Mar-20	6772	7630	69876
May-20	5777	6140	61159
Sep-20	4550	4872	59882
Nov-20	3886	4134	59472
Dec-20	4574	4822	59491

200KVA			
Months	KWH	KVA	Total amount Payable
Jan-20	13970	14425	152090
Feb-20	16484	17272	181543
Mar-20	12771	13460	150064
May-20	7613	8001	101984

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Sep-20	11705	11917	133339
Nov-20	14466	14697	140665
Dec-20	13364	13434	147196

*Running Hours of DG is low.

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*Running Hours of DG is low.



CHAPTER – IV LIGHTING SYSTEM

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

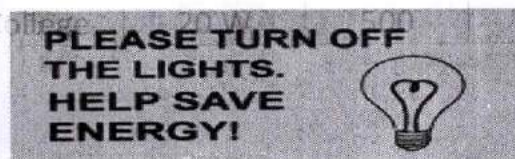
Type- LED/CFL/Conventional -Bulb/Tube Light	Location	Rating	Qty	Number of Hours being turned on
LED	Total College	22 W	200	6
CFL	Total College	18 W	60	6
Fluorescent Tube light	Total College	40 W	1100	6
Led Tube Light	Total College	20 W	500	6

Observation:

Most of the lighting used are Fluorescent Tube light. LED and Led Tube light are being used in certain location. It was informed that college has planned to replace CFL and Tube light in phased manner with replacement of faulty lights with LED.

Recommendation:

- Sticker to SWITCH OFF LIGHT and SAVE ENERGY to be displayed.
- CFL and 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:

- 5 HP – Pump 1.
- 5 HP – Pump 2.
- 5 HP – Pump 3.
- 5 HP – RO Water Pump.
- 5 HP – 8 Nos. of Motor in Electrical Lab.

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 Ductable AC's are used in facility for air conditioning. Temperature maintained is 25°C which is a good practice. Following is the summary of air conditioners installed:

Type Windows/Split/Package and Location	Capacity in Ton	Whether any star rating available	Set temperature	Running Hours	Whether AC performance is satisfactory Yes/No
Air Conditioners (2 Ton) Blue Star- Board Room	2	3	25	6	Yes
(2 Ton) Blue Star- Chairman Office	2	3	25	6	Yes
1Ton Blue Star-Accounts	1	3	25	6	Yes
1Ton Blue Star-Admin	1	3	25	6	Yes
(2 Ton) Blue Star Principal Office	2	3	25	6	Yes
(2 Ton) Blue Star Exam Branch	2	3	25	6	Yes
1Ton Blue Star Placement	1	3	25	6	Yes
(2 Ton) Blue Star- Placement	2	3	25	6	Yes
(2 Ton) Blue Star- Seminar Hall 2	2	3	25	6	Yes
(2 Ton) Blue Star- Seminar Hall 3	2	3	25	6	Yes
(2 Ton) Blue Star- Seminar Hall 3	2	3	25	6	Yes
1 Ton Carrier Air Conditioner-DSP LAB	1	3	25	6	Yes
1 Ton Carrier Air Conditioner-R&D Lab	1	3	25	6	Yes
(2 (2 Ton) Blue Star- Electrical Maintenance	2	3	25	12	Yes

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(2 Ton) Blue Star-R&D Lab	2	3	25	6	Yes
(2 Ton) Blue Star-Seminar Hall 4	2	3	25	6	Yes
(2 Ton) Blue Star-Guest Room	2	3	25	6	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 conditioner and regular annual services of AC should be carried out.
- Replacement of old 3 star rated ACs with energy efficient 5 star rated inverter ACs in a phased manner.


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CONCLUSION

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


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