

**ENERGY AUDIT REPORT
FOR
ACHARYA NARENDRA DEVA UNIVERSITY OF
AGRICULTURE & TECHNOLOGY
Kumarganj, Ayodhya-224229, Uttar Pradesh**



**Carried For
For Academic Year 2021 - 2022**

Carried Out By



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EXECUTIVE SUMMARY

Acharya Narendra Deva University of Agriculture and Technology (ANDUAT), formerly Narendra Deva University of Agriculture and Technology (NDUAT), is a university located in Kumarganj, Uttar Pradesh, India, established in 1975. It is named after the politician and educator Narendra Deva, who served as vice chancellor of the University of Lucknow and Banaras Hindu University. It has constituent colleges in Ambedkar Nagar district and Azamgarh district.

The foundation stone of was laid on 15 January 1974, by Prime Minister Indira Gandhi at Mashodha near Faizabad. Laxmi Narain Rai was the first officer on special duty, succeeded by A.S. Srivastava in October 1974 and by the first vice-chancellor, A.D. Pandey in October 1975. In the same year the government of Uttar Pradesh decided that the main campus of the university would be established at Kumarganj, (Faizabad) Ayodhya instead of Mashodha. The university started functioning in a borrowed building of Gram Swalambi Vidyalaya Acharya Nagar, Naka, Faizabad.

Electricity is supplied by Madhyanchal Vidyut Vitaran Nigam Limited and for backup powers supply DG Sets are available.

Also solar power plant of capacity 750KW is installed in the campus.

Elion Technologies and Consulting Pvt Ltd team conducted the Energy audit of the premises. The energy audit included detailed data collection, analysis of data and identification of specific energy saving proposals.



CHAPTER – I **INTRODUCTION**

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

This report is on the energy audit carried out M/S ANDUAT, Kumarganj. 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 ANDUAT, Kumarganj 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 campus.



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 ANDUAT, Kumarganj 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/Pumps.
- Air Conditioner.
- Lighting.
- AHU
- Advanced Machineries (Research Purposes)

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

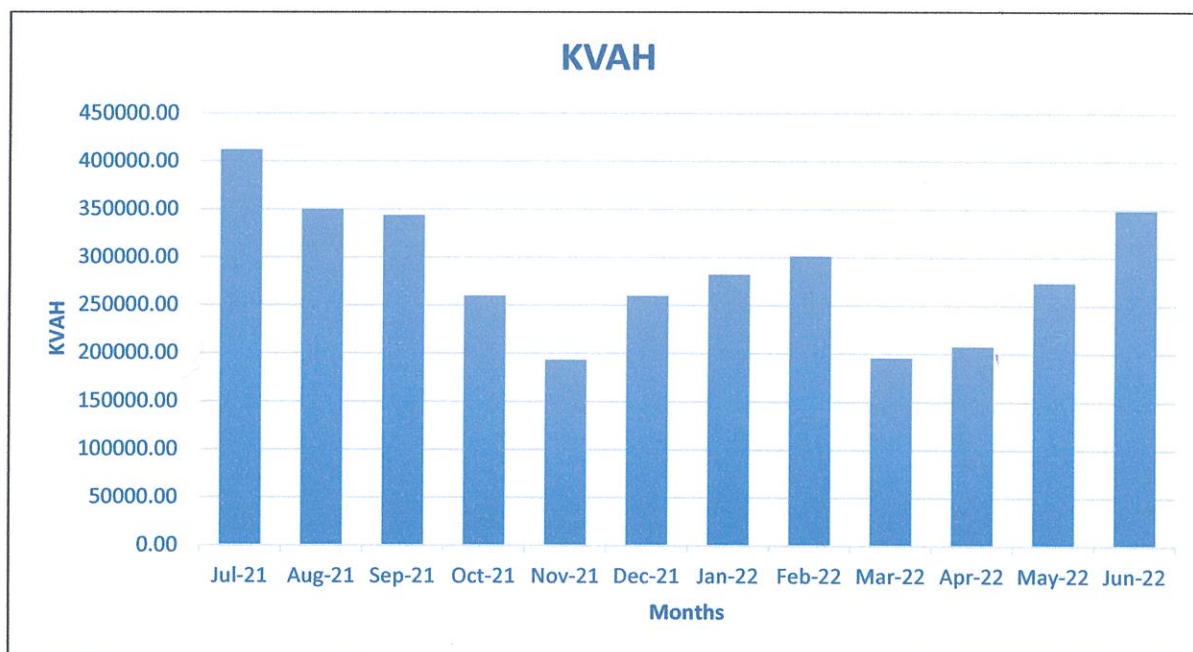
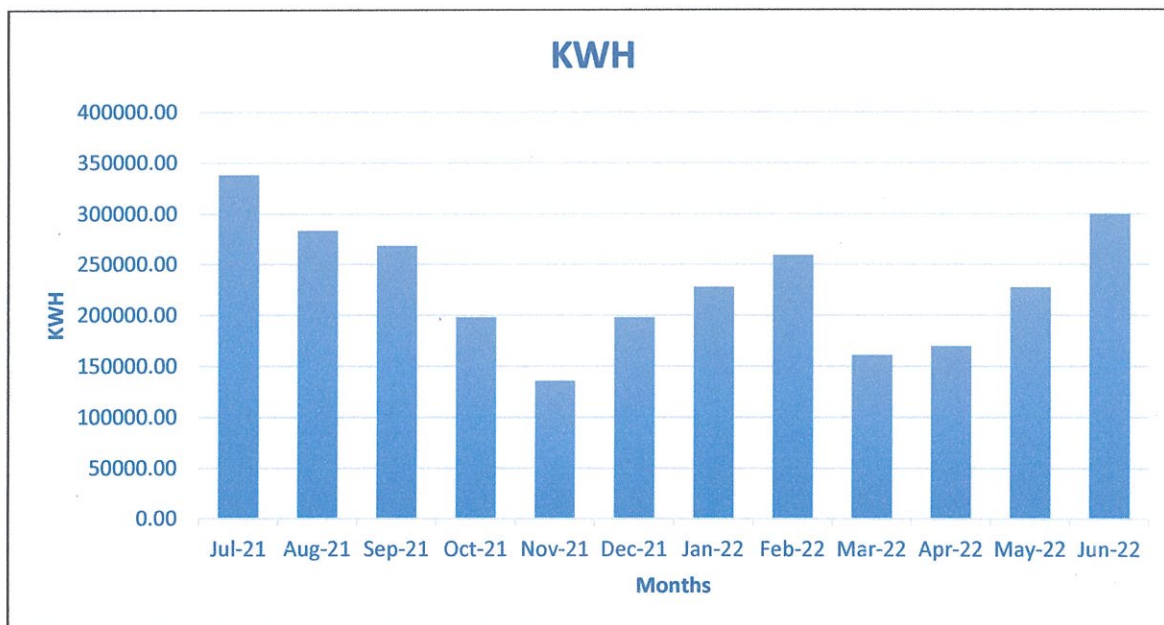
- Electricity supply from Power Distribution Company.
- DG sets.
- Solar Power Plant of 750KW.

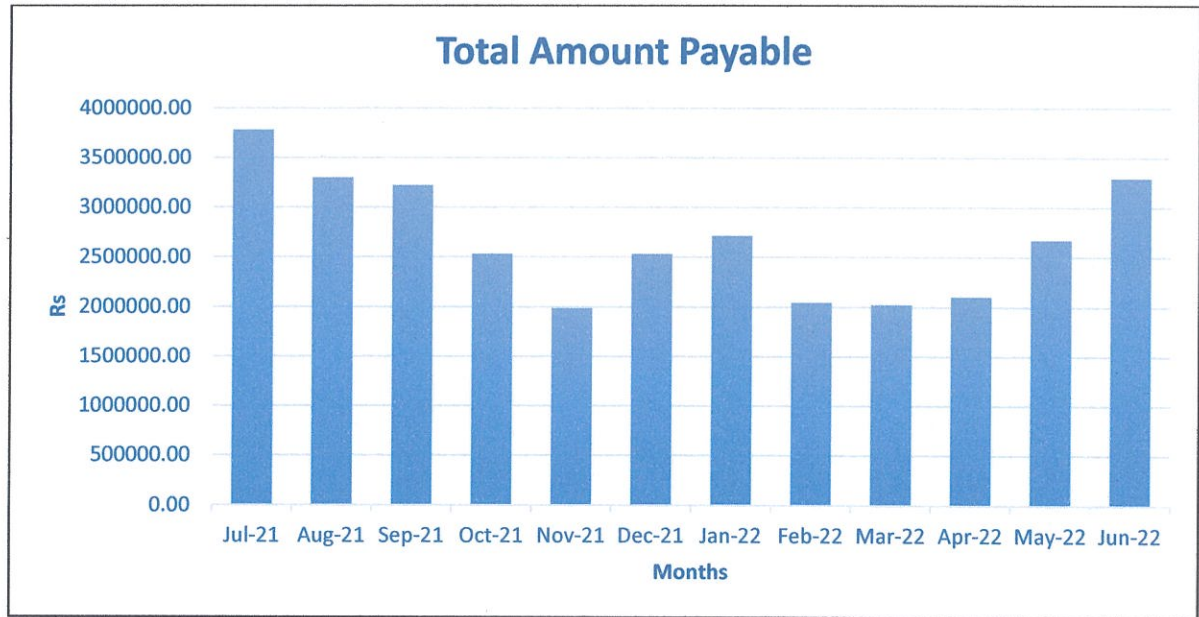
Consumption pattern for energy is given below:

ELECTRICITY CONSUMPTION PATTERN

S. No	Months	KWH	KVAH	Net Payable
1	Jul-21	337748.00	411888.00	3779725.00
2	Aug-21	283224.00	349659.00	3296712.82
3	Sep-21	268212.00	343512.00	3219008.00
4	Oct-21	197832.00	259380.00	2529083.66
5	Nov-21	135396.00	192948.00	1984308.00
6	Dec-21	197832.00	259380.00	2529083.56
7	Jan-22	227640.00	281592.00	2711233.03
8	Feb-22	259068.00	301242.00	2041999.29
9	Mar-22	160632.00	195276.00	2022209.59
10	Apr-22	170016.00	207336.00	2102297.00
11	May-22	227328.00	273480.00	2669543.20
12	Jun-22	299796.00	348612.00	3291448.33

Average Power Consumption per month is calculated at 285358.75KVAH or 230393.67KWH while the average amount payable per month is Rs. 2681387.62.







CHAPTER – IV

LIGHTING SYSTEM

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

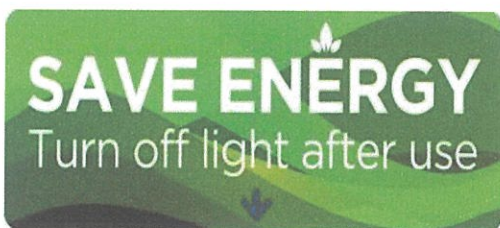
Type of Light	Location	Rating	Qty	Number of Hours being turned on
LED Tube Lights/CFL's	College of agriculture, College of veterinary, college of bio – technology, college of community science, college of agro business, college of fisheries, VIP guest house, International guest house, hostels etc.	15W/18W	10,000	6 - 8
LED Street Light	Compound Area	100W/75W	500	8

Observation:

Most of the lighting used are LED. CFL and Tube light are being used in certain location. It was informed that campus 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.





CHAPTER – V

MOTORS AND PUMPS

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

PUMPS/MOTORS:

S. No	Pump/Motor Rating	Quantity	Hours being used
1	20HP/15KW	8	6 - 7
2	6.70/5KW	12	6 - 7

*Bore wells are used for supply of water in campus.

Observation:

All pumps and motors are functioning properly and well maintained.

Recommendation:

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



CHAPTER – VI

AIR CONDITIONING

Split and Window AC's are used in facility for air conditioning. Temperature maintained is 24°C - 26°C which is a good practice.

- Total 500 numbers of air conditioners is installed inside the campus.
- Approximately 300 numbers of air conditioner are installed in residential quarters.
- Approximately 200 numbers of air conditioners are installed in offices, labs, VIP guest house and international guest house etc.
- Mostly 2 star and 3 star AC are installed but campus is in the process of replacing the old AC with new 5 star energy efficient AC's in phased manner.

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 2 star and 3 Star ACs with 5 Star Inverter ACs in a phased manner should be implemented.



CONCLUSION

The energy audit conducted at M/S ANDUAT, Kumarganj has revealed that campus 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.

