Energy Audit Report

(2020-21)

For

Yarlagadda Annapurnamba College for Women

Chirala, Prakasam District, Andhra Pradesh

Preface

Data collection for energy audit of the YAGC for women, chirala, Prakasam.Dist, was concluded by team for period of academic year 2020-2021.

This Audit was over sighted to inquire about convenience to progress the energy competence of the campus. Energy Audit survey was completed by B.Sc. physics students under the guidance of their faculty members. All data conducted from each class room, laboratory,Digital class rooms,Virtual room, Office, JKC-Lab, MANA-TV hall, seminar hall, hostel, canteen. The work is completed by considering how many tubes, fans, A.C's, computers, generator, solar system, electronic instruments etc.., in campus. How much was participation of each component in total electricity consumption. The awareness was creating to student about energy audit, use renewable energy such as solar energy and their significance use for efficient energy saving and nature. Through this, we have been cleared the vision of Institution towards the green campus and save our green nature.

Main Building

Acknowledge

We are very much thankful to Principal Dr.Ch.Ramanamma and IQAC coordinator, for motivating us and giving us the opportunity for energy audit.

Annex Building

Summary

Objective:- Energy Audit was to study the energy consumption pattern of the facility, identify the areas where potential for energy/cost saving exists and prepare proposals for energy /cost saving.

- Electricity SOLAR grid connected solar plant(20KW)
- High Speed Diesel Generator(HSDG)

Electrical energy is used for various applications like:-

1. Computers.
2. Lighting.
3. Air-Conditioning.
4. Fans.
5. Laboratory Equipment.
6. Printers.
7. Xerox Machines.
8. CCTV.
9. UPS.
10. LDC projector.
11. Router system.
12. Pumping motor etc.,

Energy Audit

Objective:- It is to balance the total energy i/p its use and to identify the energy conversation opportunities in the stream. It also gives focused attention to energy cost and cost involved in achieving higher performance with technical and financial analysis.

General Details

S.No	Particulars	Details
1.	Name of the Institute	Y.A.G.C for Women,chirala,Prakasam Dist.,
2.	Address	Near Muncipal office,paparajuthota, Chirala.
3.	Year of Establishment	1966
4.	Courses offered	U.G.Courses:- 1. B.Sc(M.P.C) 2. B.Sc(M.P.C's) 3. B.Sc(B.Z.C) 4. B.Sc(M.Z.C) 5. B.Sc(B.H.C) 6. B.Sc(M.S.C's) 7. B.Sc(M.C.C's) 8. B.Com(General) 9. B.Com(Computers) 10. B.A(H.E.P) 11. B.A(T.T.M) P.G.Courses:- 1. M.Sc(Computers Science) 2. M.Com 3. M.Sc.(Organic Chemistry)
5.	Affilitation	Acharya Nagarjuna University,Nagarjuna Nagar,Guntur.

Energy Consumption Profile

Source of Energy:

1. High Speed Diesel Generator (HSDG)

KIRLOSKAR DIESEL GENERATOR(415V)

2. Electricity SOLAR Grid connected solar plant (20 kw)

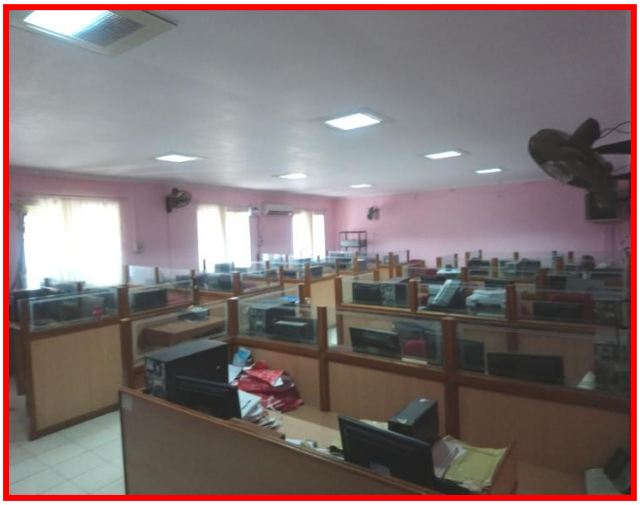
SOLAR Grid 20KW

Following are the major consumers of electricity in facility:-

- Computers
- Lighting
- Air-Conditioning
- Fans
- Other Lab Equipment
- Printers
- Xerox machines
- CCTV
- UPS
- LCD Projector
- Router system
- Pumping motor

Principal Office

Computer Lab



JKC Lab and UPS system

Office

Digital Class Room

Physics Lab

Chemistry Lab

Virtual Class Room


solis
POWER OPERATION ALARM
ESC UP DOWN ENTER
4G Series
GPS Map Camera
Chirala, Andhra Pradesh, India
R9H2+C8V, Muntha vari Centre, Chirala, Andhra Pradesh 523155, India
Lat 15.828635°
Long 80.350874°
21/06/23 11:43 AM GMT +05:30
Google

Energy Usage

Checklist of electrical electronical equipment in institution:-

No.	Devices	No	kWh
1	Number of Incandescent bulbs	11	0.96
2	Number of LED bulbs	34	0.58
3	Tube lights	130	19.2
4	Fans	148	17.4
5	ACs	06	4
6	Computers	79	30.3
7	Refrigerators	06	4.8
8	Printers	10	2.04
9	LCD projectors	5	5.25
10	Number of inverters	7	
11	Scanners	2	0.24
12	LCD television	5	6.97
13	OHP	2	250-350W

Electric Appliance Audit Sheet					
Appliance	**Power use (Watt)**	**Usage per day (Hours)**	**Number of appliances**	**Average kwh per day (watt x hours x no/ 1000)**	**Average kwh per month**
Incandescent bulbs	60	1	11	0.66	20.46
LED bulbs	9	5	34	1.53	45.96
Fans	60	8	148	71.040	2131.2

ACs	1000	4	06	24	720
Tube lights	60	19.2	130	149.76	4492.8
Computers	300	6	78	140.4	4212
LCD projector	350	1.5	05	2.625	78.75
Printers	120	1	10	1.2	36
Scanners	10	5	02	0.1	03
LCD television	91.5	15.25	05	6.97	209.3
Refrigerators	100	90	06	54	1620
Exhaust fan's	70	0.84	05	0.294	
Total					**13,569.47**

CHICKLIST OF LABORATORY EQUIPMENT

S.No	Instrument	kwh
1	Spectrophotofluorometer	220V/110V
2	Sodium vapour lamp	35w
3	Mercury vapour lamp	4u
4	Hot air oven(4)	1.5
5	Laminar air flow	0.45
6	Digital weighing machine	Less than 10 watts

The total energy utilization of the college for different purpose is approximately **13,569.47**kwh/month. A hybrid source of energy comprising solar and wind type of non-conventional category of energy will be a good energy management system for the college.

Electricity charges per month is Rs.18,237/-month. Energy saving through the replacement of incandescent bulbs to LED light may be a good energy management system for the college. Staff are encouraging to switch off their own lights, monitors and other equipment, the college administration staff should carry out a lock down of the building at the end of every day and switch off any lights or equipment that have been left on. All the incandescent bulbs have to be replaced by low energy bulbs. Lighting in the library should be predominately LEDs and energy saving bulbs. The college should improve its monitoring and reporting of energy usage and provide information to campus users.

Another important source of alternative energy source for college is solar power. No green house gas emission are released into the atmosphere when you use solar panels to create electricity because the sun provides more energy than will ever need, electricity from solar power is a very important energy source to clean energy production. Due to the usage of solar panels, our electricity charges came down. Older wiring if necessary, must be replaced.

WORK COMPLETION REPORT

Name of the Project : Energy Audit of YAGC for Women, Chirala, Bapatla Dist.,

This is to certify that **THOTAKURA SRINIVASA RAO**, **D**EPUTY **E**XCUTIVE **E**NGINEER , Chirala has successfully completed Energy Audit at YAGC(W) for Women, Chirala, Bapatla Dist., The work of energy audit is completed on 31/03/2022.

Audit report by: Deputy Executive Engineer
(Op.) C.P.D.C. of A.P. Ltd.,
CHIRALA