ସରକାରୀ ସ୍ୱୟଂଶାସିତ ମହାବିଦ୍ୟାଳୟ, ରାଉରକେଲା
GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA
Sundargarh, Raghunathpali, Rourkela, Odisha

GOVERNMENT AUTONOMOUS COLLEGE

ENERGY AUDIT REPORT

2022 - 2023

PREPARED BY
EHS ALLIANCE SERVICES

CONTENTS

CERTIFICATE

EHS alliance

CERTIFICATE

PRESENTED TO

GOVERNMENT AUTONOMOUS COLLEGE

Raghunathpali, Rourkela, Odisha 769004

Has been assessed by EHS Alliance Services for the comprehensive study of Energy Audit on institutional working framework to fulfill the requirement of

ENERGY AUDIT

ACADEMIC YEAR 2022-23

The energy-saving initiatives carried out by the institution have been verified in the report submitted and were found to be satisfactory.

The efforts taken by management and faculty towards all types of energy used in the institution and sustainability are highly appreciated and noteworthy.

EHS ALLIANCE SERVICES GURGAON

SIGNATURE

15.07.2023
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
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ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Government Autonomous College for assigning this important work of Energy Audit. We appreciate the co-operation to the teams for completion of assessment.

We would also like to thank ***Dr. Pratap Kumar Swain (Asst. Professor - Department of Chemistry) – Audit Coordinator***, for his continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Smt. Rameshwari Bhoi, Asst. Professor - *Department of Political Science*

Dr. Lichita Patro, Asst. Professor - *Department of Botany*

Mr. C. P. Ranjan, Asst. Professor - *Department of Political Science*

Last but not the least, we would like to thank ***Dr. Bijaya Kumar Behera - Principal,*** for giving us an opportunity to evaluate the environmental performance of the campus.

DISCLAIMER

EHS Alliance Services Energy Audit Team has prepared this Energy Audit Report for Government Autonomous College based on input data submitted by the representatives of college complemented with the best judgment capacity of the expert team.

While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

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EHS ALLIANCE SERVICES GURGAON

Vijay Singh
Lead Auditor EMS & Energy

Dr. Uday Pratap
Co-Auditor EMS & Energy

ABBREVIATION

A	**Amps**
AC	**Air Conditioner**
AC	**Alternating Current**
AMET	**Academy of Maritime Education and Training**
CFL	**Compact fluorescent lamp**
CIP	**Comprehensive Inspection Programme**
DC	**Direct Current**
HSD	**High Speed Diesel**
Hz	**Hertz**
kg	**Kilogram**
kVA	**kilo-volt-ampere**
kW	**kilo Watts**
kWh	**kilowatt hour**
kWp	**Kilowatt peak**
LED	**Light Emitting Diode**
LPG	**Liquefied Petroleum Gas**
MMS	**Module mounting structure**
MPPT	**Maximum Power Point Tracker**
NAAC	**The National Assessment and Accreditation Council**
SEC	**Specific Energy Consumption**
SPV	**Solar Photovoltaic**
STC	**Standard Test Condition**
TV	**Television**
V	**Volts**
W	**Watts**
W/m2	**watt per square metre**

INTRODUCTION OF THE COLLEGE

The College started as Rourkela Science College from 16th August, 1961 and was taken over by Government Odisha on 01-07-1963. With the vertical academic growth of the College was conferred with autonomous status in 2002. In the year 2002 the College was accredited by NACC with Grade-B. The College offer variety of Courses at different levels. Besides Art, Science and Commerce at Higher Secondary and Degree levels the College also offers Master Degree in 17 subjects and M. Phil in 03 subjects i.e. Botany, English and Odia. M.Sc in Computer Science, Master in Commerce, Degree Courses in Computer Science, Electronics and Tele-Communication (ETC), Mathematics with Computer MTC), PGDCA, PGDCH come under Self-finance courses. The College also offers various Degree and P. G. level Courses under Odisha State Open University. The College has been also provided separate Rooms for IGNOU Study Centre. As per the Circular of the Department of Higher Education Government of Odisha the College now stands Bi-furcated in to the Government Autonomous College, Rourkela with effect from Academic Session 2001- 2002.Ironically the number of staff both teaching and non-teaching have gone-down after it was Autonomous. There by the Classes are engaged by Guest faculty who are engaged time to time.

The College has not received any UGC grant for last three years. Remuneration for non-teaching is paid from the fee collected from the students, as there is no special grant for the Government for this purpose. This has been a hindrance in achieving our mission of academic excellence to make this premier Institute, a center of quality learning by training the students to be creative and competitive enough to face the challenges of the new millennium.

MISSION & VISION

MISSION

To achieve Academic Excellence by giving impetus and adapting to measures for Enhancing Effective Quality Sustenance and Progression on all key facets of Education. Providing a Dynamic and Conducive Environment for all in order to Inculcate, Infuse, Imbibe, Equip and Disseminate Value Oriented Learning, Creativity, Innovation, Societal Consciousness to achieve Sustainable Livelihood.

VISION

To achieve Academic Excellence by giving impetus and adapting to measures for Enhancing Effective Quality Sustenance and Progression on all key facets of Education. Providing a Dynamic and Conducive Environment for all in order to Inculcate, Infuse, Imbibe, Equip and Disseminate Value Oriented Learning, Creativity, Innovation, Societal Consciousness to achieve Sustainable Livelihood.

Facilities in the campus

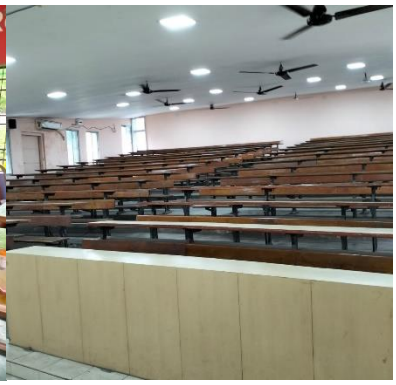
Amenities at Government Autonomous College provide far more than academic and administrative facilities on campus. It is dedicated to provide students with an exceptional infrastructure for learning as well as facilities for simplifying the procurement of fundamental skills. To accomplish the goal, Government Autonomous College offers the following:

GREEN CAMPUS: The Institute has an impressive and pollution-free campus with panoramic green surroundings, elegant landscaping and beautiful flowerbeds.

SPORTS ACTIVITIES: Spending quality time is never a problem in the Institute. Evenings find students enjoying the pleasure of these sports as players and audience.

MESS: The institute has its huge mess, which serves healthy and nutritious cuisines to its students.

CANTEEN: The institute has its own canteen, which serves healthy and nutritious food to its students at subsidized rates. The menu varies from spicy samosas, wafers to full-meals.



CAFETERIA AUDITORIUM

Geo Location
Geo Coordinates from Google maps:
22.2263719, 84.8062211

AUDIT PARTICIPANTS

On behalf of college

Name	Designation
Dr. Bijaya Kumar Behera	*Principal*
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Mr. Choudhury Pardosh Ranjan	*Asst. Professor - Department of Political Science (IQAC Coordinator)*
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Dr. Bijaya Kumar Behera	*Principal*
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On behalf of EHS Alliance Services

Name	Position	Qualifications
Mr. Vijay Singh	Lead Auditor	*M.Sc. M. Tech (Environment Science & Engineering), Energy Auditor, Post Diploma in Industrial Safety Management*
Dr. Uday Pratap	Co-Auditor	*Ph.D., EMS: Lead Auditor ISO14001:2015, QCI–WASH*

EXECUTIVE SUMMARY

The purpose of this Energy Audit was to seek opportunities to improve the energy efficiency of the Government Autonomous College. Reducing the energy consumption despite improving the human comfort, health and safety were of primary concern.

Beyond just identifying the energy consumption pattern, this audit sought to detect and categorize the most energy efficient appliances. Additionally, some daily practices relating common appliances have been shared which may help reducing the energy consumption. Data collection for energy audit of the campus was carried out by the EHS Alliance Team. The Energy Audit Report accounts for the energy consumption patterns of the institution on actual survey and detailed analysis during the audit.

The work comprehends the area wise consumption traced using suitable equipment. The analysis was carried out by our team with the support of the staff members from Government Autonomous College. The report provides a list of possible actions to preserve and efficiently access the available source, resources and their saving potential was also identified. We look forward towards optimization that the authorities, students and staff members would follow the recommendations in the best possible way. The report is based on certain generalizations including the approximations wherever necessary. The views conveyed may not reveal the general opinion. They merely represent the opinion of the team guided by the interviews of clients. We are happy to submit this Energy audit report to the Government Autonomous College.

ENERGY AUDIT - ANALYSIS

1. ENERGY CONSUMPTION

To understand the Energy Consumption trends and for analyzing the average monthly consumption we have collected electricity energy bills from July 2022 to June 2023

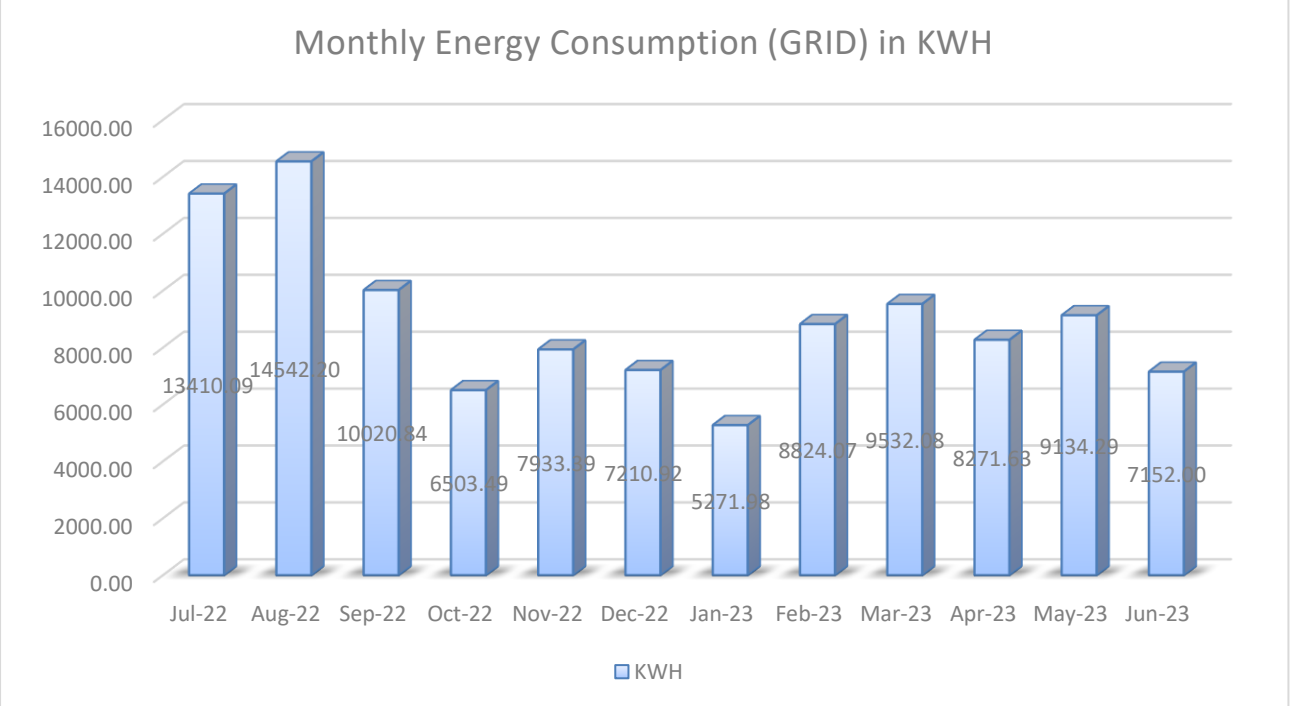
The details of **"Meter Connection"** at **"Government Autonomous College"** are as follows-

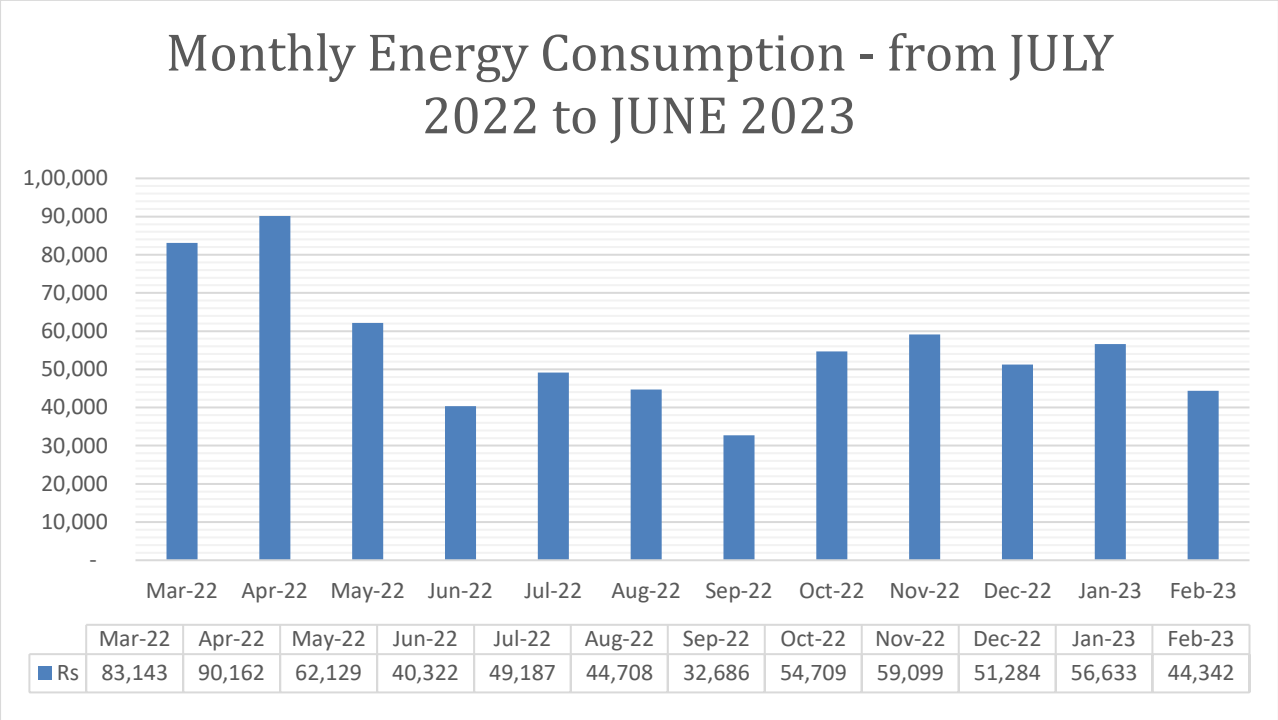
Name	CA No.
PG Department of Odia	814001120164
Principal Govt. College	814001080004
Principal Govt. College	814001080003
PG Department of Computer Science	814001120166

1.1 Summary of Monthly Electricity Consumption and Total Bill Amount

To understand the Energy consumption trend and for developing the baseline parameter we have collected monthly energy bill for the 12 months i.e. from July 2022 to June 2023

Month	Grid Units	Rate	Amount
Jul-22	13410.09	6.20	83,143
Aug-22	14542.20	6.20	90,162
Sep-22	10020.84	6.20	62,129
Oct-22	6503.49	6.20	40,322
Nov-22	7933.39	6.20	49,187
Dec-22	7210.92	6.20	44,708
Jan-23	5271.98	6.20	32,686
Feb-23	8824.07	6.20	54,709
Mar-23	9532.08	6.20	59,099
Apr-23	8271.63	6.20	51,284
May-23	9134.29	6.20	56,633
Jun-23	7152.00	6.20	44,342
Sum	**107806.97**		**668403**



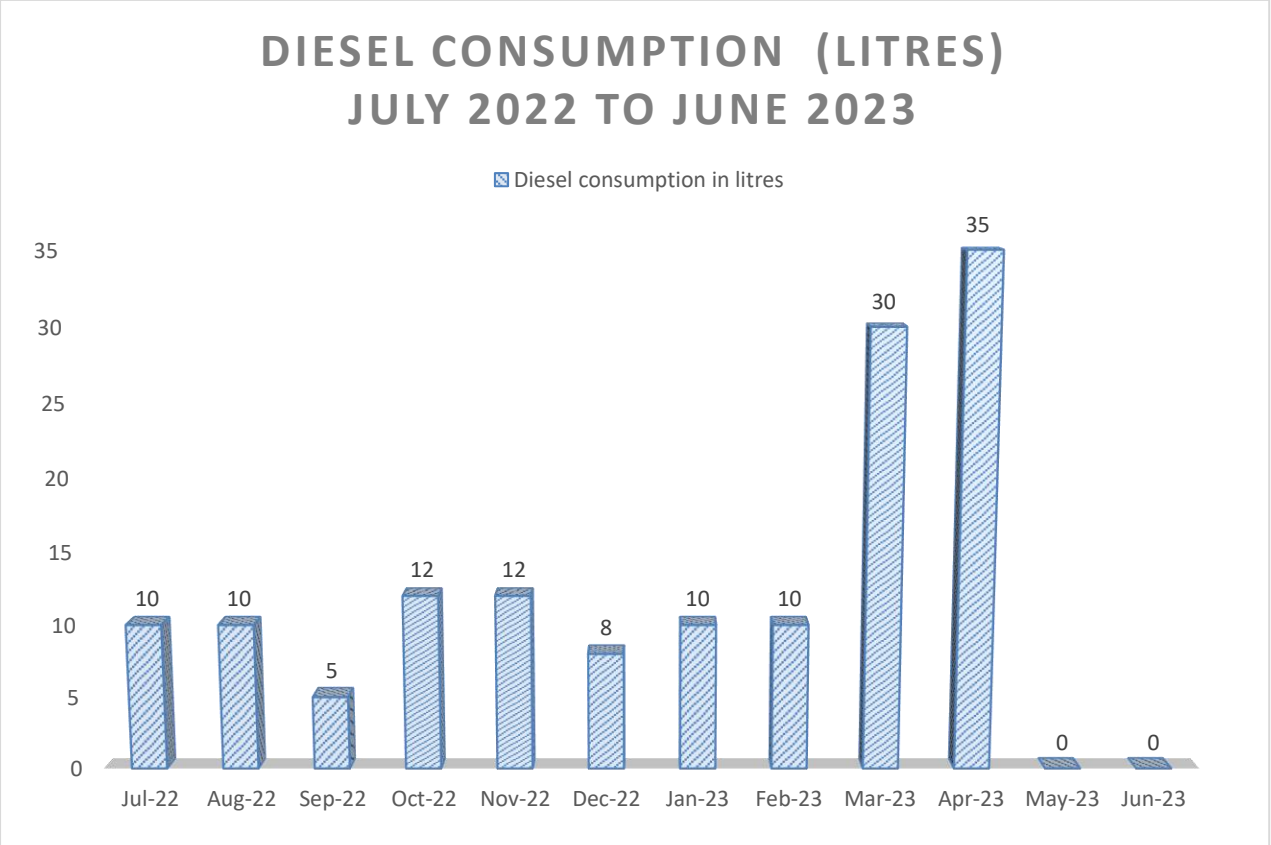


	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
Rs	83,143	90,162	62,129	40,322	49,187	44,708	32,686	54,709	59,099	51,284	56,633	44,342

2. DIESEL CONSUMPTION

Below is the diesel consumption details in litres from July 2022 to June 2023.

Period	Diesel consumption (in litres)
Jul-22	10
Aug-22	10
Sep-22	5
Oct-22	12
Nov-22	12
Dec-22	8
Jan-23	10
Feb-23	10
Mar-23	30
Apr-23	35
May-23	0
Jun-23	0
Total	**142**



3. ANALYSIS OF DG SETS

In the campus, there is only one Diesel Generator (DG) set for its electrical power needs in case of Grid power failure. DG sets capacity is 125 kVA.

DG Set Design Details			
Description	***Unit***	***DG at Station 1***	***DG at Station 2***
Rated capacity	kVA	62.5 KVA (3Phase)	62.5 KVA (3Phase)
Hz		50	50
Sl No.		N4F18TC-06876	N4H18TC-07080
Make		Mahendra & Mahendra	Mahendra & Mahendra
Volts	Volts	415	415
PF		0.8	0.8
Phase		3	3
RPM		1500	1500
Amps	Amps	87	87
Mfg.		2018	2018

DG Set Operation details		
Operating hours during testing	Hours	0.50
% Loading	%	62.98
Energy Generation	kWh	32.23
Load	kVA	89.32
Fuel consumption during testing	Litre	7
Specific energy generation	kWh/litre	3.21

Observation and Suggestions: -

Soundproof silent generators are an efficient tool to keep both noise and vibration at low levels. For the power backup of the institution, the soundproof model is installed in the institution.

As per the trial taken during the energy audit the percentage loading of DG set is 62.98% which is ok and specific energy consumption of DG Sets 3.21 kWh/Litre which is satisfactory because as per manufacturer recommendation, best practices for SEC in DG sets range from 3.0 to 3.5 kWh/Litre and above.

We recommend college to initiate stack monitoring of DG set through authorized lab.

Silent generator

4. AC SYSTEM

Energy Efficiency Ratio (EER): The performance of smaller chillers and rooftop units is frequently measured in EER rather than kW/ton. EER is calculated by dividing a chiller's cooling capacity (in Btu/h) by its power input (in watts) at full-load conditions. The higher the EER, the more efficient the unit. The cooling effect produced is quantified as tons of refrigeration (TR). The above TR is also called air-conditioning tonnage.

There are Split ACs installed in Government Autonomous College in various areas of various capacity which detail is given below: -

Sl No.	Location/Identification	Type(Window/Split)	Quantity	AC TR	Room Temp. (°C)	AC-Tout (°C)	AC-Tin (°C)	Room-RH (%)	Area (m2)	Air velocity (m/s)	Enthalpy Hout	Enthalpy Hin	Heat Load in TR	KW supplied	(Eff.)Power per Ton (KW/TON)	EER
1	Commerce	S	1	1.5	24	11	20	52	0	2	22	38	0	1	2	2
2	Mathematics	S	2	1.5	24	12	20	52	0	2	25	38	0	1	2	2
3	Statistics	S	1	1.5	24	11	19	52	0	3	24	37	0	1	2	2
4	Computer Science	S	2	1.5	24	10	18	52	0	2	24	37	0	1	2	2
5	Computer Science	S	7	2.0	23	12	20	52	0	2	25	38	0	1	2	2
6	Computer Science	W	3	1.5	23	11	19	52	0	2	22	37	0	1	2	2
7	Chemistry	S	1	2.0	23	13	20	52	0	2	26	38	0	1	2	2
8	Physics	W	6	1.5	23	12	20	52	0	2	25	38	0	1	2	2
9	Hindi	S	2	1.5	23	12	19	52	0	2	24	37	0	1	2	2
10	English	S	2	1.5	24	11	20	52	0	2	22	38	0	1	2	2
11	Economics	S	1	1.5	24	12	20	53	0	3	25	38	0	1	2	2
12	Political Science	S	1	1.5	24	12	20	53	0	2	25	38	0	1	2	2
13	Odia	S	6	1.5	23	12	20	52	0	3	25	38	0	1	2	2
14	Autonomous 1st Floor	S	5	1.5	23	13	20	52	0	3	26	38	0	1	2	2
15	Autonomous Ground Floor	S	4	1.5	23	12	20	52	0	3	25	38	0	1	2	2
16	Autonomous Ground Floor	S	1	2.0	23	11	19	53	0	2	22	38	0	1	2	2
17	Office	S	9	1.5	22	12	22	52	0	2	23	43	0	1	2	2
18	SAMS	S	1	1.5	23	11	21	52	0	2	24	40	0	1	2	2
19	Library	S	1	1.5	22	10	19	52	0	2	20	37	0	1	2	2

20	Bosy'S Hostel-1	S	8	1.5	24	11	20	52	0	2	22	38	0	1	2	2
21	Boys Hostel-2	S	7	2.0	24	12	20	52	0	2	25	38	0	1	2	2
22	Boys Hostel-3	W	3	2.0	24	11	19	52	0	3	24	37	0	1	2	2
23	Girl's Hostel-1	S	7	1.5	24	10	18	52	0	2	24	37	0	1	2	2
24	Girl's Hostel-2	S	1	2.0	23	12	20	52	0	2	25	38	0	1	2	2
25	Girl's Hostel-3	S	8	1.5	23	11	19	52	0	2	22	37	0	1	2	2
26	Quarter	S	12	1.5	23	13	20	52	0	2	26	38	0	1	2	2

Remarks: - We have checked the Energy Efficiency Ratio of AC's and EER of AC's is fairly OK. But in the future, you should purchase 5-Star rated invertor-based split AC's because the power consumption of inverter-based BEE 5-Star rated AC's is less than non-star rated AC's.

Also, we recommend Government Autonomous College to organize periodic maintenance schedules and take corrective actions for insulating of AC's refrigerant lines in order to protect against energy losses.

5. FANS ANALYSIS

In the Government Autonomous College, there are 831 fans installed. Based on fan type and wattage, summary is as follows.

Fan Type	Watt	Quantity
Ceiling Fan	50W	302
Ceiling Fan	60W	218
Ceiling Fan	70W	305
Pedestal Fan	60W	6
Total number of fans		831

Location wise fan details

Sl No.	Location/ Identification	Ceiling Fan-50W	Ceiling Fan-60W	Ceiling Fan-70W	Pedestal Fan 60W
1	History	4			
2	Commerce	30			
3	Mathematics	16			
4	Statistics	8			3
5	Zoology			33	
6	Botany			38	
7	Education	6			
8	Computer Science			29	
9	ETC	3			
10	Psychology	10			
11	Chemistry			16	
12	Physics			20	
13	Hindi		60		
14	English			12	
15	Economics			2	
16	Political Science			2	
17	Odia		31		
18	Sociology			4	
19	Logic & Philosophy			2	
20	Autonomous 1st Floor		7		
21	Autonomous Ground Floor		6		
22	Office		10		1
23	SAMS		1		
24	Library		12		
25	Boy's Hostel-1	93			
26	Boy's Hostel-2		25		
27	Boy's Hostel-3		25		
28	Girl's Hostel-1			58	
29	Girl's Hostel-2			70	
30	Girl's Hostel-3	132			2
31	Quarter		41	19	
	TOTAL	**302**	**218**	**305**	**6**

The observation and suggestion are given below.

Total no of Ceiling Fans (50W)	=	302	Nos.
Total no of Ceiling Fans (60W)	=	218	Nos.
Total no of Ceiling Fans (70W)	=	305	Nos.
Total wattage of existing Ceiling Fans	=	49530	Watt
Total wattage of BEE 5 Star rated Fans (30W)	=	24750	Watt
Total saving in Wattage after replacement	=	24750	Watt
Operating hours per day	=	8	Hours
Operating days per annum	=	283	Days
Energy charges per unit in Rs.	=	6.20	INR
Saving in Rs./annum	=	347831.9	INR
Investment INR	=	2227500	INR
Payback period	=	6.4	Years

Observation and Suggestions: -

In the college, existing ceiling fans are of 60, 70, and 50 W but BEE 5 Star Rated of 30W Ceiling Fans are present in the market. We recommend replacing existing fans to BEE 5 Star rated 30W fans. The college should initiate the replacement of 70W in the first phase

Note:- Energy savings will increase or decrease if the operating hours of the machine /equipment are increased or decreased and the payback period will also increase or decrease if the cost of investment (Cost of machine/equipment/accessories of the machine) will increase or decrease because cost of investment is taken on a tentative basis.

6. ANALYSIS OF LIGHTING SYSTEM

6.1 Brief description of the existing system

For assessing the energy efficiency of the lighting system, an Inventory of the Lighting System has been noted/collected, with the aid of a lux meter, measurement and documentation of the lux levels at various locations at the working level have been done.

6.2 Inventory of Lighting

Sl. No.	Location/ Identification	200W-LED High Mast	100W LED Street light	10W LED	10W LED	18W LED Light	12 W LED Round	36W LED	36W Tube light	20W LED
1	History			2		7				
2	Commerce			2		21				
3	Mathematics			2		26				
4	Statistics			2		8				
5	Zoology			2		30				
6	Botany			2		58				
7	Education			2		6				
8	Computer Science			2		80				
9	ETC			2		6				
10	Psychology			2		9				
11	Chemistry			2		48				
12	Physics			2		42				
13	Hindi			2						
14	English			2		32		5		
15	Economics			2		3				
16	Political Science			2		2				
17	Odia			2		30				
18	Sociology			2		4				
19	Logic & Philosophy					2				
20	Autonomous 1st Floor					10				
21	Autonomous Ground Floor					10				
22	Office					29				
23	SAMS					4				
24	Library					24				
25	Bosy'S Hostel-1	7			251					56
26	Boys Hostel-2	2			9					51
27	Boys Hostel-3	3			15	26				92
28	Girl's Hostel-1				43					63
29	Girl's Hostel-2				50					
30	Girl's Hostel-3				343				195	
31	Quarter		2		106	22	28			
	TOTAL	**12**	**2**	**20**	**817**	**539**	**28**	**5**	**195**	**262**

6.3 Lux Measurement

Description	Lux	Remark
Class Rooms	120 to 235	Acceptable
Offices	130 to 240	Acceptable
Corridors	35 to 90	Acceptable
Washrooms	45 to 76	Acceptable
Outdoor	36 to 95	Acceptable
Computer Lab	150 to 289	Acceptable
Parking area	45 to 94	Acceptable
Canteen	69 to 185	Acceptable

Observation

College has replaced more than 90% of conventional tube lights to LED-based lighting solutions. LEDs save energy, the life span is much greater, and emit virtually no heat. We recommend replacing the tube lights with LEDs.

Additionally, we recommend installing motion sensor-based lights in common areas such as libraries, washrooms, corridors, etc.

We also recommend using solar lights for open areas like parking, ground, street lights, etc., and motion sensor lights for common areas such as libraries, corridors, washrooms, etc. The table below shows the performance characteristics comparison of all luminaries.

Table - Luminous Performance Characteristics of Commonly Used Luminaries					
Type of Lamp	Lumens/Watt		Colour Rendering Index	Typical Application	Typical Life
	Range	Avg.			
Incandescent	8-18	14	Excellent (100)	Homes, restaurants, general lighting emergency lighting	1000
Fluorescent lamps	46-60	50	Good w.r.t coating (67-77)	Offices, shops, hospitals, homes	5000
Compact fluorescent Lamps (CFL)	40-70	60	Very Good (85)	Hotels, shops, homes, offices	8000-10000
High-pressure mercury (HPMV)	44-57	50	Fair (45)	General lighting in factories, garages, car parking. floodlighting	5000
Halogen lamps	18-24	22	Excellent (100)	Display, flood lightening, stadium exhibition grounds, construction areas	2000 - 4000
High-pressure sodium (HPSV) SON	67-121	90	Fair (22)	General lighting in warehouses, factories, street lighting	6000 - 12000
Low-pressure sodium (LPSV) SOX	101-175	150	Poor (10)	Roadways, tunnels, canals, street lighting	6000 - 12000
Metal halide lamps	75-125	100	Good (70)	Industrial bays, spotlighting, floodlighting, retail stores	8000
LED Lamps	30-50	40	Good (70)	Reading lights, desk lamps, night lights, spotlights, security lights, signage lights, etc.	40000 - 100000

7. OTHER POWER CONSUMPTION

7.1 Inventory of IT Infrastructure

Sl No.	Location/ Identification	Desktop	Laptop	Printers	Scanners	Servers
1	History	0	1	1	1	
2	Commerce		1	1	1	
3	Mathematics	32	1	1	1	
4	Statistics	1	1	1	1	
5	Zoology	2	1	1	1	
6	Botany	1	1	1	1	
7	Education		1	1	1	
8	Computer Science	71	1	2	2	
9	ETC	10	1	1	1	
10	Psychology	1	1	1	1	
11	Chemistry	1	1	1	1	
12	Physics	3	1	2	2	
13	Hindi		1	1	1	
14	English	4	1	1	1	
15	Economics		1	1	1	
16	Political Science		1	1	1	
17	Odia	3	1	1	1	
18	Sociology		1	1	1	
19	Logic 7 Philosophy		1	1	1	
20	Autonomous 1st Floor	4		3	3	
21	Autonomous Ground Floor	6		5	5	1
22	Office	8		4	4	1
23	SAMS	3		1	1	1
24	Library	3		1	1	
25	Boys Hostel-1	1		1	1	
26	Boys Hostel-2	1		1	1	
27	Boys Hostel-3	1		1	1	
28	Girl's Hostel-1	1		1	1	
29	Girl's Hostel-2	1		1	1	
30	Girl's Hostel-3	1		1	1	
	TOTAL	**159**	**19**	**41**	**41**	**3**

7.2 Water pump details

Description	Rated Power of Motor	Motor Eff.	Discharge Head	Suction Head	Pump Type
Unit	KW	%	m	m	Submersible /Monoblock /Centrifugal Etc.
Pump No.-1	1.5	2	4	3	Submersible
Pump No.-2	2		29	43	Submersible
Pump No.-3	2		29	43	Submersible
Pump No.-4	0.75		29	49	Submersible
Pump No.-5	1.5	2	4	3	Submersible
Pump No.-6	2		29	43	Submersible
Pump No.-7	2		29	43	Submersible
Pump No.-8	1.5	2	4	3	Monoblock
Pump No.-9	0.75		29	49	Submersible
Pump No.-10	5		15	20	Monoblock

7.3 Other Loads

Sl No.	Location/Identification	60W Exhaust Fan	160W Exhaust Fan	Water Cooler-200W
1	History			2
2	Commerce			
3	Mathematics			
4	Statistics			
5	Zoology			2
6	Botany	3		
7	Education			
8	Computer Science	1		
9	Psychology			
10	Chemistry	12		
11	Physics	2		
12	Hindi			
13	English			
14	Economics			
15	Political Science			
16	Odia	2		
17	Sociology			
18	Logic & Philosophy			
19	Autonomous 1st Floor	1		
20	Autonomous Ground Floor	1		
21	Office	4		

22	SAMS			
23	Library	4		
24	Bosy'S Hostel-1	1	1	1
25	Boys Hostel-2	3		
26	Boys Hostel-3	6	1	
27	Girl's Hostel-1		3	
28	Girl's Hostel-2	1		
29	Girl's Hostel-3	14		
30	Quarter	21		11
	TOTAL	**76**	**5**	**16**

ANALYSIS

There should be regular maintenance schedule of equipment like pumps, exhaust fans and IT equipment. Electronics such as computers, printers, scanners, etc. more than 3 year or 5 years (as per their life) should be replaced with new computers/laptops. Ideal Temperature should be maintained for all electronic appliances.

7. OTHER POWER CONSUMPTION

N/A

***** **END OF THE REPORT** ******