

**ENERGY AUDIT REPORT**  
**B.C.S. Government PG. College Dhamtari**  
**Chhattisgarh**



**(2023-24)**

*Submitted*



To  
IQAC  
&

Principal  
B.C.S. Government PG. College Dhamtari Chhattisgarh

By  
(Energy Audit Committee)

  
Principal  
Dr. Shreedevi Choubey

Energy Audit Committee  
Kishor Kumar (In-charge)  
Abhishek Mishra (Member)  
Dineshwar Salam (Member)


# CERTIFICATE OF ENERGY AUDIT

This is certify that

**B.C.S. GOVT. P.G. COLLEGE, DHAMTARI,  
CHHATTISGARH**

has Conducted **"ENERGY AUDIT"** for the session  
**2023-24** to assess the Consumption of electricity with the use of  
renewable energy awareness activities.

The college has submitted the necessary data for this Audit.  
The data presented is Satisfactory to Allocate and Measure.

  
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O/O E.E.(O&M) Dr. C.S.P.D.C. DHAMTARI

## Preface

Billions of Indian households, industries, institutes etc. are facing an energy crisis. The steep increase in the cost of electricity means that it is more important than ever to find savings and to do this, it helps to focus on the things that use the most and cost more money.

Some electrical appliances use a lot of electricity, while others don't. Every appliance has a power rating, usually given in watts (W) or kilowatts (KW) ( $1\text{ KW}=1000\text{W}$ ) this is the amount of electricity it needs in order to work. Of course the amount of electricity it uses depends on how long it's on for.

Data collection for energy audit in B.C.S. govt. PG College, Dhamtari was done by the team. This audit was comprised of inquire about the management of the energy competence in the campus. We collected data from each classroom, laboratory, office room, and other rooms. The work is completed by considering how many tube Lights, Fans, A.C.s, etc. are in use. We work out to find the electricity consumption of each component as per their individual share of power consumed.

## Acknowledgement

Energy Audit In charge of B.C.S. Government P.G. College Dhamtari is  
Very much thankful to Principal Dr. Shreedevi Choubey, IQAC Coordinator  
NAAC for motivating us for Energy Audit. We thank all the members of  
auditing team. We also thank the office staff who helped us during the audit  
process.



Energy audit team



## INTRODUCTION

This table below shows what it cost to use a range of common appliance. We have taken an average power rating for each appliance; the actual power rating will depend on the size and specifications of the appliance.

### List of the power consumption of some typical electronic appliances

Appliance	Energy consumption(per hour)	Cost per hour (Rs)	Cost per day (Rs)
100 W light bulb (incandescent)	100W	0.37	8.88
60 W light bulb(incandescent)	60W	0.22	5.28
Air cooler	80W	0.30	7.2
Ceiling fan	70W	0.26	6.24
Computer monitor	30W	0.10	2.4
Desktop computer	450W	1.67	40.08
Home AC	4000W	14.8	355.2
Extractor fan	12W	0.40	9.6
Fridge	220W	0.81	19.44
Internet router	15W	0.06	1.44
Home phone	5W	0.02	0.48
Inkjet printer	30W	0.11	2.64
Laser printer	800W	2.96	71.04
Laptop computer	100W	0.37	8.88
LED light bulb	10W	0.04	0.96
Projector	270W	0.99	23.76
Tube light	22W	0.08	1.92
Wi-Fi Booster	2W	0.01	0.17
Wi-Fi Router	10W	0.04	0.96

The electricity is sold by the kilowatt hour (KWh) usually referred to as "units" on the electricity bill.

Let's say we have 500W (0.5KW) dehumidifier and we run it for a whole day (24h). It will use 12kwh of electricity (e.g. half a kilowatt per hour). The electricity now costs around 3.7 Rs per unit, so multiply 12kwh (12 units) by 3.7 and we get the total cost of humidifier using 24 hours.

#### **Chhattisgarh state tariff rate per unit**

**In Chhattisgarh, on consumption of 0 to 100 unit we have to pay 3.70 Rs. Per unit, for 100-200 unit, per unit charge will be 3.90 Rs for 201- 400 unit, it is 5.30 Rs per unit, for 401- 600 unit, the payable rate is 6.30 Rs per unit and above 600 units the per unit cost will be 7.90 Rs per unit.**

# BCS Govt. PG college Dhamtari (C.G.)

## Electronic Equipments in use

Year 2023-24

ROOM NO.	FAN	TUBE LIGHT	LED	PC	PRINTER	PHOTOCOPIER	AC	FRIDGE	WATER COOLER	EXHAUST	PROJECTOR	TV SCREEN
<b>MAIN BUILDING</b>												
OFFICE	9	5	12	2	1	1	-	-	-	-	-	-
EXAM CELL	2	-	2	1	1	-	-	-	-	-	-	-
IQAC	4	4	-	2	3	1	-	-	-	-	-	-
RN 1	5	1	3	-	-	-	-	-	-	-	-	-
RN 2	5	1	3	-	-	-	-	-	-	-	-	-
NCC	2	2	-	-	-	-	-	-	-	-	-	-
NSS	2	2	-	-	-	-	-	-	-	-	-	-
TOILET	-	2	-	-	-	-	-	-	-	2	-	-
STAFF TOILET	-	-	3	-	-	-	-	-	-	2	-	-
COMMERCE DEPT.	2	2	3	1	1	-	-	-	-	-	-	-
RN3	5	-	3	-	-	-	-	-	-	-	-	-
GEOGRAPHY DEPT	6	5	-	5	1	-	-	-	-	-	-	-
GEOGRAPHY ROOM	4	2	2	-	-	-	-	-	-	-	-	-
SMART CLASS	4	2	6	-	-	-	-	-	-	-	-	1
ECONOMICS DEPT	2	3	-	1	2	1	-	1	-	-	-	-
HINDI DEPT	2	1	4	1	-	1	-	-	-	-	-	-
GALLERY	1	-	2	-	-	-	-	-	-	-	-	1
PRINCIPAL ROOM	2	-	7	-	-	-	1	1	-	-	-	1
COMPUTER ROOM	1	-	3	2	1	1	-	-	-	-	-	-
RN 5	5	4	-	-	-	-	-	-	-	-	-	-
RN 6	5	3	-	-	-	-	-	-	-	-	-	-
RN 7	5	3	-	-	-	-	-	-	-	-	-	-
RN 8	5	3	-	-	-	-	-	-	-	-	-	-
RN 9	6	2	-	-	-	-	-	-	-	-	-	-
RN 10	5	3	-	-	-	-	-	-	-	-	-	-
PHYSICS DEPT	15	11	-	5	-	-	-	-	-	-	-	-
DARK ROOM	2	1	-	-	-	-	-	-	-	-	-	-
STAFF ROOM	5	4	1	-	-	-	-	-	-	1	-	-
SOCIOLOGY DEPT	1	1	-	1	-	-	-	-	-	-	-	-

BOTANY DEPT	7	7	-	1	1	-	-	-	-	-	-	-
ZOOLOGY DEPT	7	7	-	1	1	-	-	-	-	2	-	-
POL. SC.	1	1	-	1	-	-	-	-	-	-	-	-
ROOM NO.	FAN	TUBE LIGHT	LED	PC	PRINTER	PHOTOCOPIER	AC	FRIDGE	WATER COOLER	EXHAUST	PROJECTOR	TV SCREEN
IGNOU DEPT	5	2	-	1	1	-	-	-	-	-	-	-
IGNOU CO. DEPT	1	1	-	-	-	-	-	-	-	-	-	-
ENGLISH DEPT	1	1	-	1	1	-	-	-	-	-	-	-
PSYCHOLOGY DEPT	1	1	-	1	-	-	-	-	-	-	-	-
HISTORY DEPT				1	1	-	-	-	-	-	-	-
RN 11	3	2	-	-	-	-	-	-	-	-	-	-
RN 12	4	2	-	-	-	-	-	-	-	-	-	-
RN 13	7	5	-	-	-	-	-	-	-	-	-	-
RN 14	5	2	-	-	-	-	-	-	-	-	-	-
RN 15	6	2	-	-	-	-	-	-	-	-	-	-
RN 16	5	4	-	-	-	-	-	-	-	-	-	-
RN 17	6	3	-	-	-	-	-	-	-	-	-	1
RN 18	6	3	-	-	-	-	-	-	-	-	-	-
RN 19	8	4	-	-	-	-	-	-	-	-	-	-
RN 20	6	3	-	-	-	-	-	-	-	-	-	-
RN 21	5	6	-	-	-	-	-	-	-	-	-	-
HOME SC. DEPT	2	3	3	-	-	-	-	1	-	-	-	-
STORE ROOM	2	2	-	-	-	-	-	-	-	-	-	-
OTHER	3	2	2	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>203</b>	<b>130</b>	<b>59</b>	<b>28</b>	<b>15</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>7</b>	<b>-</b>	<b>4</b>

#### LIBRARY BUILDING

GROUND FLOOR	27	33	3	13	-	1	2	2	1	-	-	1
LAW DEPT	26	30	1	1	1	-	-	-	2	8	-	-
<b>TOTAL</b>	<b>53</b>	<b>63</b>	<b>4</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>-</b>	<b>1</b>

#### IT BUILDING

IT LAB	9	-	33	45	2	-	4	-	-	-	1	-
RN 1	2	1	1	-	-	-	-	-	-	-	-	-
RN 2	6	3	2	-	-	-	-	-	-	-	1	-
RN 3	2	-	2	-	-	-	-	-	-	-	-	-
STAFF ROOM	1	2	-	-	-	-	-	-	-	-	-	-
LIBRARY	1	1	-	-	-	-	-	-	-	-	-	-
TOILET	-	1	-	-	-	-	-	-	-	2	-	-
<b>TOTAL</b>	<b>21</b>	<b>8</b>	<b>38</b>	<b>45</b>	<b>2</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>2</b>	<b>-</b>



### NEW BUILDING

ROOM NO.	FAN	TUBE LIGHT	LED	PC	PRINTER	PHOTOCOPIER	AC	FRIDGE	WATER COOLER	EXHAUST	PROJECTOR	TV SCREEN
GALLERY GROUND	1	-	5	-	-	-	-	-	-	-	-	-
CHEM LAB	13	-	14	2	1	-	-	1	-	4	-	-
RN 3	5	-	6	-	-	-	-	-	-	-	-	-
RN 4	5	-	6	-	-	-	-	-	-	-	-	-
TOILET GRAOND	-	-	2	-	-	-	-	-	-	1	-	-
GALLERY 1 <sup>ST</sup> FLOOR	2	-	5	-	-	-	-	-	-	-	-	-
HALL	13	-	24	-	-	-	-	-	-	3	1	-
RN 5	5	-	6	-	-	-	-	-	-	-	-	-
RN 6	5	-	6	-	-	-	-	-	-	-	-	-
CHEM PG LAB	5	-	6	-	-	-	-	-	-	-	-	-
RN 4	6	-	8	-	-	-	-	-	-	-	-	-
RN 5	6	-	8	-	-	-	-	-	-	-	-	-
RN 6	6	-	8	-	-	-	-	-	-	-	-	-
GALLERY	3	-	4	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>75</b>	<b>-</b>	<b>108</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>

### GIRL'S HOSTEL

ROOM NO.	FAN	TUBE LIGHT	LED	PC	PRINTER	PHOTOCOPIER	AC	FRIDGE	WATER COOLER	EXHAUST	PROJECTOR	TV SCREEN
KITCHEN	-	1	-	-	-	-	-	-	-	-	-	-
STORE ROOM	-	1	-	-	-	-	-	-	-	-	-	-
HALL	6	2	1	-	-	-	-	-	1	-	-	-
LIVING ROOM	19	8	10	-	-	-	-	-	-	-	-	-
CORRIDOR	-	2	1	-	-	-	-	-	-	1	-	-
BATHROOM+TOILET	-	2	-	-	-	-	-	-	-	3	-	-
OTHER	-	-	1	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>25</b>	<b>16</b>	<b>13</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>4</b>	<b>-</b>	<b>-</b>
<b>GRAND TOTAL</b>	<b>377</b>	<b>217</b>	<b>222</b>	<b>89</b>	<b>19</b>	<b>6</b>	<b>7</b>	<b>5</b>	<b>6</b>	<b>21</b>	<b>2</b>	<b>5</b>

This table below shows the consumption of electricity by the appliances that are available in the college premises.

SN	APPLIANCES	TOTAL NO. OF APPLIANCES	CONSUMPTION OF ELECTRICITY PER HOUR (UNIT)	CONSUMPTION OF ELECTRICITY PER DAY (UNIT)	CONSUMPTION OF ELECTRICITY PER MONTH (UNIT)
1.	FAN	377	26.39	633.33	19000
2.	TUBE LIGHT	217	4.77	114.57	3437.28
3.	LED	222	2.22	53.28	1598.4
4.	PC	89	40.05	961.2	28836
5.	PRINTER	19	0.57	13.68	410.4
6.	PHOTOCOPIER	6	4.8	115.2	3456
7.	AC	7	28	672	20160
8.	FRIDGE	5	1.1	26.4	792
9.	WATER COOLER	6	0.48	11.52	345.6
10.	EXHAUST	21	0.24	5.76	172.8
11.	PROJECTOR	2	0.54	12.96	388.8
12.	TV SCREEN	5	0.53	12.72	381.6
	<b>TOTAL</b>	<b>976</b>	<b>109.69</b>	<b>2632.62</b>	<b>78978.9</b>

**Note:** These data are provided for the consumption of electricity in units on the basis of the 24 hours run time of the appliances. Note that in college premises the electronic equipment is not in 24 h in use. The approximate run time of the most of electronic equipment here in the premises is below 7 hours.

# BCS GOVT. PG COLLEGE DHAMTARI (C.G.)

Electricity bill of the college premises for the academic year 2023-24

SN	MONTH	MAIN BUILDING 1000926990		NEW BUILDING 1005220930		LIBRARY BUILDING 1006481471		IT BUILDING 1004177502		HOSTLE 1007194576		TOTAL	
		UNIT	COST (RS)	UNIT	COST (RS)10 140	UNIT	COST (RS)	UNIT	COST (RS)	UNIT	COST (RS)	UNIT	COST (RS)
1.	Jul 23	2277	21810	1345	8010	181	2520	922	3940	50	-	4775	36280
2.	Aug 23	2277	21310	1137	10140	373	3700	1164	5980	0	-	2951	41130
3.	Sep 23	2277	21100	1039	8480	373	3820	1037	8220	100	-	4826	41620
4.	Oct 23	2277	21100	1027	7430	337	3580	835	7260	100	140	4576	39510
5.	Nov 23	2277	42510	858	7430	136	5810	525	7260	-	-	3796	63010
6.	Dec 23	2277	19960	786	20130	90	1620	501	12900	238	560	3892	55170
7.	Jan 24	2277	20370	705	5090	80	1620	447	1940	4	1380	3513	30400
8.	Feb 24	2277	20440	1041	4560	93	1690	666	1710	0	170	4077	28570
9.	Mar 24	2277	21060	1081	7310	488	6250	609	3410	0	420	4455	38450
10.	Apr 24	2270	20480	1030	7910	30	1530	631	3070	93	430	4054	33420
11.	May 24	2277	20890	1131	7340	78	380	786	3140	0	-	4272	31750
12.	Jun 24	2277	21340	1418	7960	204	2490	759	4030	177	-	4835	35820
AVERAGE		2277	22697	1050	8482	136	2917	740	5238	63	516	4168	37452

## **Conclusion:**

The above data shows the average consumption of electricity and average expenditure on the same. These data are based on monthly consumption of unit of the electricity bill provided by the college management. The college premises need on an average 4168 units of electricity per month to run successfully.

## **RECOMENDATION**

### **Steps to Save Energy**

1. LED bulbscan be used instead of tube lights and CFL.
2. High power rated appliances can be used to save more power.
3. College management should replace years old devices and appliances with the modern one.

## **APPRECIABLE**

Total Campus area of our college is approximately 27Acre. And all the five buildings of our college are constructed with Wide space and have Excellent Ventilation system in every Classroom, staff room, laboratory room and other rooms.

Students and Teachers are Responsible to Switch On and switch off Electrical Equipments per need.

From the Office of The Principal there is a strict Order to Switch off the equipment after the Class is over.



# ENERGY AUDIT REPORT 2023-24

In this report the team has taken the data based on the consumption of electricity by the electronic equipment. The college premises have a good management of electricity. There are more to be done to improve the electric consumption and the team has suggested that could be done in the future so the energy could be utilized in a more efficient way than ever. In this way we can reduce the loss of the electricity as well as the cost.



**Principal**

**Dr. Shreedevi Choubey**  
B.C.S. GOVT. PG CPLLEGE DHAMTARI

## Energy Audit Committee



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