

## Seth Kesarimal Porwal College of Arts & Science & Commerce, Kamptee

### Energy Audit Report 2020 – 2021

Data collection for energy audit of the S. K. Porwal College of Arts and Science and Commerce, Kamptee was conceded by team. All data collected from each classroom, laboratory, every room. The work is completed by considering how many tubes, fan, A.Cs, electronic instruments, etc in each room. How much is participation of each component in total electricity consumption.

Sr. No.	Name of Department	Power Consumption/day (Watt)
1	Principal Office	11400
2	SPM office, SPM cabin, Waiting room, principal P.A. room	13588
3	Record room, Ground floor, Second floor, Outer	4600
4	Library Hall, Circulation Section, Reading room, Library back side	13395
5	Registrar office	8720
6	Room. No. 7, Cash counter	17880
7	Vice principal cabin	732
8	Mathematics, IQAC, Sociology	19097
9	Biochemistry	11430
10	Chemistry	12540
11	Microbiology	95620
12	Botany	23750
13	Zoology	925
14	Physics	9360
15	Pol. Science, Economics, Marathi, Hindi	2790
16	History	4810
17	Urdu	1510
18	Commerce	2036
19	Exam room	2720
20	English and Functional Lab.	3250

21	Classrooms(18,19,20,23,25,33A,33,34,35,36,37,38,39)	11040
22	Physical Education	1682
23	Computer science & IT	19074
24	Electronics	2290
25	NCC,NSS,YCMOU	960
26	Home Science	13100
<b>Total</b>		<b>308299</b>

### Data for Energy Audit

**Name of Department: Principal Office**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	20	10	200	5	1000
2	Fan	60	2	120	5	600
3	PC	100	1	100	5	500
4	Printer	60	1	60	5	300
5	A.C.	1500	1	1500	5	7500
6	LCD	300	1	300	5	1500
<b>Total</b>						<b>11400</b>

**Name of Department: SPM office, SPM cabin, Waiting room, principal P.A. room**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	20	21	420	5	2100
2	Fan	60	07	420	5	2100
3	PC	100	04	400	5	2000
4	Printer	60	03	180	5	900
5	Xerox machine	800	01	800	¼ Hr	200
6	Inverter	600	02	1200	5	6000
7	A.C.	1500	01	1500		
8	Biometric machine	12	01	12	24	288
<b>Total</b>						13588

**Name of Department: Record room, Ground floor, Second floor, Outer**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	20	16	320	5	1600
		50	06	300	10	3000
2	Water cooler		02			
<b>Total</b>						4600

**Name of Department: Library Hall, Circulation Section, Reading room,  
Library backside**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	40	26	1040	5	5200
		20	26	520	5	2600
2	Fan	26	60	1560	2	3120
3	PC	150	05	750	3	2250
4	Printer	300	3	900	¼ Hr	225
5	Scanner	2.5	1	2.5		
6	Projector	150	1	150		
7	Cooler	300	2	600		
<b>Total</b>						13395

**Name of Department: Registrar office**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	20	3	60	5	300
2	Fan	60	1	60	5	300
3	PC	100	1	100	5	500
4	Printer	60	1	60	2	120
5	A.C.	1500	1	1500	2	3000
6	Inverter	600	1	600	5	3000
7	LCD	300	1	300	5	1500
<b>Total</b>						8720

**Name of Department: Room. No. 7, Cash counter**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	20	13	260	6	1560
2	Fan	60	9	540	6	2520
3	PC	100	11	1100	6	6000
4	Printer	60	11	660	1	600
5	Inverter	600	2	1200	6	7200
<b>Total</b>						17880

**Name of Department: Vice Principal cabin**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	12	6	72	6	432
2	Fan	60	1	60	5	300
<b>Total</b>						732

**Name of Department: Mathematics, IQAC, Sociology**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	40	6	240	6	1440
2	Fan	75	3	225	5	1125

3	PC	200	3	600	2	1200
4	Printer	250	2	500	1	500
5	Inverter	672	1	672	6	4032
<b>Total</b>						19097

**Name of Department: Biochemistry**

Sr. No.	Name of Appliance	Power Rating (Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	20	6	120	5 hr.	600
2	Fan	60	5	300	4 hr.	1200
3	PC	100	1	100	3 hr.	300
4	Printer	60	1	60	¼ hrs.	15
5	Xerox machine	180	1	180	¼ hrs.	45
6	Projector	300	1	300	2	600
7	Cooler		nil		-----	
8	Instrument					
	i. Colorimeter	10	1	10	2 hrs.	20
	ii. pH meter	50	1	50	1 hrs.	50
	iii. Clinical Centrifuge	120	1	120	1 hrs.	120
	iv. Oven	2000	1	2000	1hr.	2000
	v. Incubator	120	1	120	24 hrs.	2,880
9	Refrigerator	150	1	150	24	3600
<b>Total</b>						11430

**Name of Department: Microbiology**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light LED	40 12	21 04	840 48	2	1680 96
2	Fan	70	14	980	2	1960
3	Exhaust fan	50	05	250	2	500
4	PC	150	04	600	2	1200
5	Printer	300	02	600	0.3	180
6	Projector	100	01	100	0.1	10
7	Cooler	350	01	350	0.1	35
8	Refrigerator	300	04	1200	24	28800
9	Deep freeze	290	01	290	24	6960
10	BOD Incubator	720	02	1440	24	34560
11	Incubator	250	02	500	24	12000
12	Shaking Incubator	250	01	250	12	3000
13	Centrifuge	180	01	180	0.1	18
14	Cooling Centrifuge	300	01	300	0.1	30
15	Nephelometer	60	01	60	0.1	6
16	Photoflurometer	60	01	60	0.1	6
17	Weighing balance	12	01	12	0.1	1.2
18	Magnetic stirrer	100	01	100	0.1	10
19	Autoclave	2000	02	4000	1	4000
20	Water bath	1480	01	1480	0.1	148
21	Spectrophotometer	260	01	260	0.1	26

22	Light microscope	60	04	2400	0.1	240
23	PCR	7.6	01	706	0.1	70.6
24	Gel documenta. System	150	01	150	0.1	15
25	Laminar air flow	200	01	200	0.1	20
26	Microwave Oven	500	01	500	0.1	50
<b>Total</b>						95,621.8

**Name of Department: Chemistry**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	40	33	1320	2	2640
2	Fan	70	17	1190	2	2380
3	PC	150	04	600	2	1200
4	Printer	300	03	900	0.3	270
5	Projector	100	01	100	0.1	10
6	Cooler	300	03	900	0.1	90
7	Microwave	500	01	500	0.1	50
8	Vacuum oven	1000	01	1000	0.1	100
9	Hot air oven	2000	01	2000	0.1	200
10	Centrifuge	220	01	220	0.1	22
11	Water bath	220	01	220	0.1	22
12	Homozinizer	220	01	220	0.1	22
13	pH meter		01	5	0.1	0.5
14	Muffle furnace	4000	02	8000	0.1	800
15	Conductometer	5	06	30	0.1	3
16	Potentiometer	5	06	30	0.1	3
17	Suction pump	100	01	100	0.1	10



18	Calorimeter	2	02	4	0.1	0.4
19	Magnetic stirrer	500	05	2500	0.1	250
20	Ultrasonicator	100	01	100	0.1	10
21	Weighing balance	17	04	68	0.1	6.8
22	Hot plate	1500	02	3000	0.1	300
23	Refrigerator	2000	01	2000	2	4000
24	UV Visible spectrophotomet er	1500	01	1500	0.1	150
<b>Total</b>						12539.7

**Name of Department: Botany**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	30W	6	180	6hr	1080W
2	Fan	70W	6	420W	6hr	2520W
3	PC	AC230V	1	230W	4to 5 hrs	920W-1150W
4	Printer	220- 240vAC	1	220W	1hr	220W
5	Cooler	230W	1	230W	2-3hr	450-490W
6	Instrument: Fridge Oven Incubator	232 240 300	1 1 1		Countinuo us	5520W 5760W 7200W
<b>Total</b>						23750

**Name of Department: Zoology**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	40	2	80	5 hours	400
2	Fan	60	1	60	5hours	300
3	PC	100	1	100	2hours	200
4	Printer	100	1	100	15 minutes	25
<b>Total</b>						925

**Name of Department: Physics**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	40	22	880	5	4400
2	Fan	60	15	900	5	4500
3	PC	100	2	200	2	400
4	Printer	60	2	120	½ Hr	60
<b>Total</b>						9360

**Name of Department: Pol. Science, Economics, Marathi, Hindi**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	6	9	54	5	270
2	Fan	60	7	420	5	2100
3	PC	100	2	200	2	400
4	Printer	60	2	120	10 Min.	20
<b>Total</b>						2790

**Name of Department: History**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	20	02	40	5	200
2	Fan	60	01	60	5	300
3	PC	100	01	100	3	300
4	Printer	60	01	60	10 min.	10
5	Inverter	800	01	800	5	4000
<b>Total</b>						4810

**Name of Department: Urdu**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	20	03	60	5	300
2	Fan	60	03	180	5	900
3	PC	100	01	100	3	300
4	Printer	60	01	60	10 min.	10
<b>Total</b>						1510

**Name of Department: Commerce**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	40	01	40	05	200
		20	03	60	05	300
2	Fan	60	04	240	05	1,200
3	PC	150	01	150	02	300
4	Printer	240	01	240	0.15	36
<b>Total</b>						2036

**Name of Department: Exam room**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	20	05	100	6	600
2	Fan	60	02	120	6	720
3	PC	150	02	300	3	900
4	Printer	100	01	100	1	100
5	Xerox machine	800	01	800	½ Hr	400
6	Cooler	300	01	300		
<b>Total</b>						2720

**Name of Department: English and Functional Lab.**

<b>Sr. No.</b>	<b>Name of Appliance</b>	<b>Power Rating(Watt)</b>	<b>Quantity</b>	<b>Power Consumption (Watt)</b>	<b>Usage per Day (Hr)</b>	<b>Power Consumption/day (Watt)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E=C X D</b>	<b>F</b>	<b>G=E X F</b>
1	Light	20	05	100	1	100
2	Fan	75	05	375	2	750
3	PC	200	12	2400	1	2400
4	Printer	50	2	100	00	00
5	Projector	300	01	300	00	00
<b>Total</b>						3250

Name of Department: Classrooms(18,19,20,23,25,33A,33,34,35,36,37,38,39)

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	40	35	1400	3	4200
2	Fan	60	38	2280	3	6840
<b>Total</b>						11040

Name of Department: Physical Education

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	20	07	140	3	420
		18	03	54	3	162
2	Fan	60	05	300	3	900
3	PC	100	1	100	2	200
4	Printer	50	2	100	00	00
5	Cooler	300	01	300	00	00
<b>Total</b>						1682

**Name of Department: Computer Science & IT**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	30	20	600	5	3000
2	Fan	80	17	1360	5	6800
3	PC	CRT 60	6	360	5	1800
		TFT 40	24	960	5	4800
4	Printer	100	4	400	5	2000
5	Projector	258	1	258	3	774
6	Cooler	500	1	500	Not in Use	
7	Modem	6	1	6	5	30
8	Switches	7	1	7	5	35
9	Router	7	1	7	5	35
<b>Total</b>						19074

**Name of Department: Electronics**

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption /day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	20	6	120	5	600
2	Fan	60	6	360	3	1080
3	PC	100	3	300	2	600
4	Printer	60	1	60	10 min	10
5	Cooler	500	01	500	Not in use	00
6	Inverter	600	01	00	Not in use	00
<b>Total</b>						2290

Name of Department: NCC, NSS, YCMOU

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption/day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	40	8	320	1	320
2	Fan	80	6	480	1	480
3	PC	100	1	100	1	100
4	Printer	60	1	60	1	60
5	Cooler	500	01	500	Not in use	00
<b>Total</b>						960

Name of Department: Home Science

Sr. No.	Name of Appliance	Power Rating(Watt)	Quantity	Power Consumption (Watt)	Usage per Day (Hr)	Power Consumption /day (Watt)
A	B	C	D	E=C X D	F	G=E X F
1	Light	40	7	280	5	1400
2	Fan	60	7	420	5	2100
3	Fridge	200	2	400	Continuous	9600
<b>Total</b>						13100



## General Recommendations:

1. All Class Rooms and labs to have Display Messages regarding optimum use of electrical appliances in the room like lights, fans, computers and projectors. Save electricity. Display the stickers of save electricity, save nature everywhere in the campus. So that all should be encouraged to save the electricity.
2. Most of the time, all the tube lights in a class room are kept ON, even though, there is sufficient light level near the window opening. In such cases, the light row near the window may be kept OFF.
3. All projectors to be kept OFF or in idle mode if there will be no presentation slides.
4. All computers to have power saving settings to turn off monitors and hard discs, after some interval of time as per user requirement.
5. The comfort/Default air conditioning temperature to be set between 24°C to 26°C.
6. Need to use power saver circuits for AC.
7. Need to replace FTL by smart LED Tube
8. Need to replace ordinary bulb by LED bulb.
9. Need to replace ordinary CRT monitor by LED.
10. Need to replace ordinary refrigerator by BEE power saver refrigerator, if possible.

20<sup>th</sup> August 2021

Prof. Rajesh K. Parate

Convener

Energy Audit Committee



  
Principal  
Seth Kesarimal Porwal College of  
Arts & Science & Commerce, Kamptee