M.C. No. 38610

SHRI TULJABHAVANI ELECTRICAL
ENGINEERING COMPANY

GOVT. LICENCED ELECTRICAL CONTRACTOR

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Ref No. —

Date : 24/05/2023

Energy Audit Certificate

This certificate is awarded for 2021-22 and 2022-23 to the Esteemed Institution Shri. Shivaji Mahavidyalaya Barshi Dist: Solapur 413411. As part of the Institution's initiatives for a Healthy & Sustainable College the Energy audit was conducted. We appreciate the immense efforts taken by the college towards green initiative, energy management and conservation.

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Shri Tuljabhavani Electrical
Engineering Compa
MC.No - 3861

Energy Audit Report

Submitted to

SHRI SHIVAJI MAHAVIDYLAYA , BARSHI .
DIST: SOLAPUR

By

Tuljabhavani Electrical & Engineering Company,
Barshi.Dist –Solapur

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Preface

Data collection for energy audit of the Shri Shivaji Mahavidyalaya , Barshi Campus was conceded by team for the period of 1 July 2022 to 30 Jun 2023 . This audit was over sighted to inquire about convenience to progress the energy competence of the campus. To drop of energy utilization whilst cultivator humanizing comfort, health and safety were of prime anxiety. This audit required to recognize the mainly energy proficient appliances. Besides, several each day processes concerning common appliances have been provided which facilitate sinking the energy expenditure. The energy audit survey was completed by Department of Electronics, Shri.Shivaji Mahavidyalaya Barshi under Guidance of Tuljabhavani Electrical & Engineering Company, Barshi. All data collected from each classroom, laboratory, every room. The work is completed by considering, how much tubes, fan, A.Cs, electronic instruments, etc. in each room. How much was participation of each component in total electricity consumption.

Acknowledgement

Department of Electronics, Shri. Shivaji Mahavidyalaya Barshi is very much thankful to Principal Dr. Shaikh A.B. Sir, NAAC Coordinator Dr.Gurme V.M.Sir for motivating us for energy audit.

Introduction:

A nation is trying to advance in quantity and quality to the spread of education among the common India and development of their intelligence. In India the entire field of education and other fields of intelligent activities had been monopolized by a handful of men before independence. But today we are marching towards the desirable status of a developed nation with fast strides. But the development should be a sustained one. For achieving such an interminable development energy management is essential .As far as concerning electricity crisis, we are facing lack of electricity during office work. So, institutional management is taking design regarding production of electricity and saving electricity for eco-social aspect.

Energy requirement of India is growing and incomplete domestic fossil fuel treasury. The country has motivated strategy to enlarge its renewable energy resources and policy to establish the nuclear power plants. India increases the involvement of nuclear power to largely electrical energy development facility from 4.2% to 9%.India's industrial demand accounted for 35% of electrical power requirement, domestic household use accounted for 28%, agriculture 21%, commercial 9%, and public lighting and other miscellaneous applications accounted for the rest. Energy conservation means reduction in energy consumption without making any sacrifice of

quantity or quality. A successful energy management program begins with energy conservation; it will lead to adequate rating of equipment's, using high efficiency equipment and change of habits which causes enormous wastages of energy. By observing all these study lack of electricity and huge electricity demands. It is necessary to plan to be self-sufficient in electricity requirement.

In the present study, college electricity audit has been done. In this study considered practical laboratory, instrument, Fans, air conditioners, Computers etc are considered in this study. We have studied total budget of the college, total economic investment of college on the electricity and total generation electricity from the solar, wind, hybrid electricity generation unit. Also, we have studied total saving of electricity and money from solar wind generation and requirement of solar energy. Also, it is studied that exact contribution of bulb, fans, computer, instruments etc in the total requirement of electricity. We studied all these mentioned thinks by collecting exactly data form survey.

Experimental and data collection:

All required data is collected by Department of Electronics, Shri. Shivaji Mahavidyalaya, Barshi under Guidance of Tuljabhavani Electrical & Engineering Company,Barshi . In building, in every room, how much fans, tubes, fans, computer, printer, scanner, instrument AC, etc. will these is measured. According to survey following data is collected.

Shri Shivaji Shikshan Prasarak Mandal's

Shri. Shivaji Mahavidyalaya ,Barshi.

Building Electrical Audit (2022-23)

Sr. No.	Particulars	LED light/Tube	Fan	Projector	Computer	Scanner	Printer	Xerox	AC	Other
1	Principal Office	6	2	1	1				1	
2	Staff Rooms	4	2							
3	Administrative Office	15	10			4	10			
4	NAAC room	4	2	1					2	
5	Exam Department	6	4		2		2	2		
6	Auditorium Hall	10	6	1					6	
7	Department of Sr.Electronics	10	10		2					
8	Department of Sr.Physics	13	6		3					8
9	Department of Sr.Chemistry	37	12		2					26
10	Department of Sr.Botony	19	10							5
11	Department of Sr.Zoology	14	10		2					9
12	Department of Sr. Microbiology	22	18		5					12
13	Department of Sr. Computer Science	2	3		10					
14	Soil & Water Lab	5	4		2					3
15	Competitive Exam Guidance Center	10	10							

16	Department of English	12	5	1	20		1			1
17	Department of Marathi	2	1		1					
18	Department of Hindi	3	3							
19	Department of Geography	11	7		5		1			
20	Department of History & Poltics	1	1		2		1			
21	Department of Economics & psychology	1	1		1					
22	Department of Physical Education	5	2		2					
23	Department of Music	4	2		1					
24	Vice-Principal Office	4	2							
25	Department of Jr.Physics	10	7		1					
26	Department of Jr.Chemistry	8	4							4
27	Department of Jr.Biology	11	4							
28	Department of Jr.Electronics	6	4		1					
29	Department of Jr. Computer Science	4	4		25					
30	Department of Jr. I.T.	8	4							
31	Department of Jr.Crop , Horty , Fishry	12	8							3
32	Department of MCVC	10	5		1					
33	HALL NO. 9	6	6	1						
34	HALL NO. 15	4	2	1						
35	HALL NO. 16	4	2	1						

36	HALL NO. 17	4	2	1						
37	HALL NO. 20	2	2							
38	HALL NO. 21	6	4	1						
39	HALL NO. 29	6	6	1						
40	HALL NO. 35	6	6	1						
41	HALL NO.46	4	4							
42	HALL NO.47	4	4							
43	HALL NO.48	6	6							
44	HALL NO.50	4	4							
45	HALL NO.51	4	4							
46	HALL NO.66	6	6							
47	HALL NO.68	4	2							
48	HALL NO.69	4	2							
49	HALL NO.70	4	2							
50	Jr. Staff Room HALL NO.72	6	6	1						
51	HALL NO.73	4	4							
52	HALL NO.74	4	4							
53	HALL NO.75	4	4		1					
54	HALL NO.82	4	4							
55	HALL NO.83	4	4							

56	HALL NO.84	6	6							
57	HALL NO.85	4	2							
58	HALL NO.86	4	2							
59	HALL NO.87	4	2							
60	Boys common Room	4	4							
61	Girls common Room	4	4							
62	Boys Toilet	2	1							
63	Girls Toilet	2	1							
64	Staff Toilet (Gents & Ladies)	2	1							
65	Girls Hostel	120	120							
66	Drinking water filter									6
67	Submercible Pump & Motor									3
68	Store Room	2	1							
69	Campus	30			1					
Total		577	407	12	91	4	15	2	9	80

Shri Shivaji mahvidyalaya ,Barshi

Energy Consumption (2022-23)

Sr. No	Month	Consumption Unit (KW)						Total
		Main Building	Chemistry Building	Library	Hostel	Gymkhana	Garden	
1	Jul-22	2920	2532	2540	0	59	178	8229
2	Aug-22	1824	1642	1558	0	107	185	5316
3	Sep-22	1808	1608	1529	0	160	212	5317
4	Oct-22	2425	1777	1902	0	178	215	6497
5	Nov-22	2251	1793	1736	0	160	213	6153
6	Dec-22	2207	2417	2519	124	153	221	7641
7	Jan-23	3114	2512	2622	2186	100	100	10434
8	Feb-23	1236	2039	1646	1176	100	100	6097
9	Mar-23	1726	1180	1565	1584	100	100	6055
10	Apr-23	1673	951	0	1816	100	100	4440
11	May-23	2064	959	0	1798	100	100	4821
12	Jun-23	2685	1721	0	926	100	100	5332
Yearly Power Consumption		25933 KW	21131 KW	17617 KW	9610 KW	817 KW	1224KW	76332 KW
Average Monthly Power Consumption		2161KW	1761KW	1468KW	801KW	68KW	102KW	6361KW

Power Consumption as per Electricity Board:

FOR ACADEMIC YEAR 2022-23

Sr. No	Month	Consumption Unit(KWh)
1	Jul-22	8229
2	Aug-22	5316
3	Sep-22	5317
4	Oct-22	6497
5	Nov-22	6153
6	Dec-22	7641
7	Jan-23	10434
8	Feb-23	6097
9	Mar-23	6055
10	Apr-23	4440
11	May-23	4821
12	Jun-23	5332
Total Power Consumption (Yearly)		76332 KW
Average Power Consumption (Monthly)		6361 KW

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Shri Shivaji Shikshan Prasarak Mandal's

SHRI SHIVAJI MAHAVIDYALAYA, BARSHI

Energy Audit (2022-23)

Month	Instrument Utilized							Power Consumption			
	Projector	LED Light	Fan	Computer	Scanner /Printer /Xerox Machine	Other	AC	Total Power Consume in '1' hours (KWatt)	Total Power Consume in '2.5' hours (KWatt)	Total Instrument Power Consumption in month (KWatt)	MSEB Unit
	Qn	Qn	Qn	Qn	Qn	Qn	Qn				
Jul-22	12	557	407	91	15	81	9	109.59	273.975	8219	8229
Aug-22	12	410	183	70	10	60	5	70.84	177.1	5313	5316
Sep-22	12	410	183	70	10	60	5	70.84	177.1	5313	5317
Oct-22	12	435	368	65	10	70	5	86.64	216.6	6498	6497
Nov-22	12	438	309	65	10	70	5	82.04	205.1	6153	6153
Dec-22	12	557	407	91	15	81	9	109.59	273.975	8219.25	7641
Jan-23	12	557	408	80	14	81	9	139.07	347.675	10430	10434
Feb-23	12	423	307	65	10	70	5	81.28	203.2	6096	6097
Mar-23	12	287	368	65	10	70	5	80.72	201.8	6054	6055
Apr-23	12	219	315	38	6	35	5	59.21	148.025	4441	4440
May-23	12	230	341	40	10	40	5	64.28	160.7	4821	4821
Jun-23	12	400	191	70	10	60	5	71.08	177.7	5331	5332

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Conclusion

In conclusion, data generated in energy audit are useful for to understand the energy distribution and utilization of college.The college needs maximum **76332** KW of electricity per Year. In other words, college needs **6361** KWh per Month.

Recommendation:

1) Replace all CFL Tube light using LED Bulb, to save more Power
2) Make Automation to more Power consumable devices like Light , Fan to save Power
3) Replace CRT monitor using LED or LCD monitor.
4) Separate connection of office, Computer Lab.and classroom.
5) In future use more Renewable energy like Solar Electricity to decrease costing.

Results and discussion:

As far concerning the energy audit, electricity audit is main concern regarding educational institution. We have collected data by considering the tube light, fan, Projector, computer, printer, Xerox machine, A.C and Laboratory instruments.

For Academic year 2022-23The total required energy is **76332** KW **per year .**

Energy Consumption through all device **is 6361 KW per Month**

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