

2021

# Energy Audit Report



EcoShastra

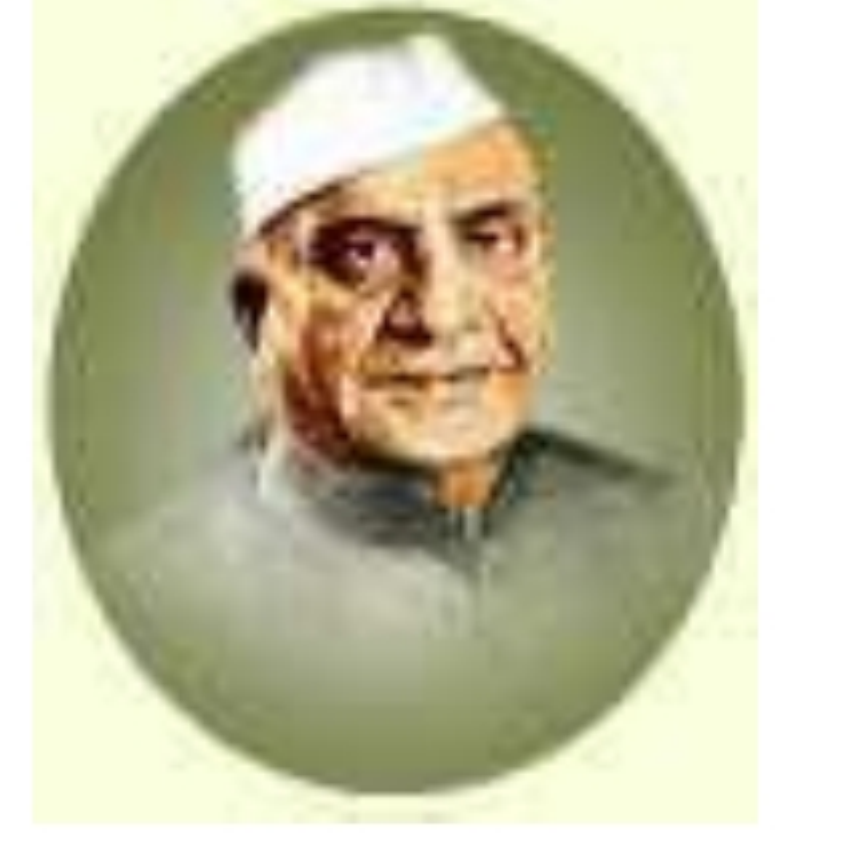
---



***This page is intentionally left blank***



Shri Shivaji Education Society Amaravati's



**Shri Shivaji College of Arts,  
Commerce and Science, Motala (MS)**

# Energy Audit Report

Submitted by



**EcoShastra**  
Consultancy & Services

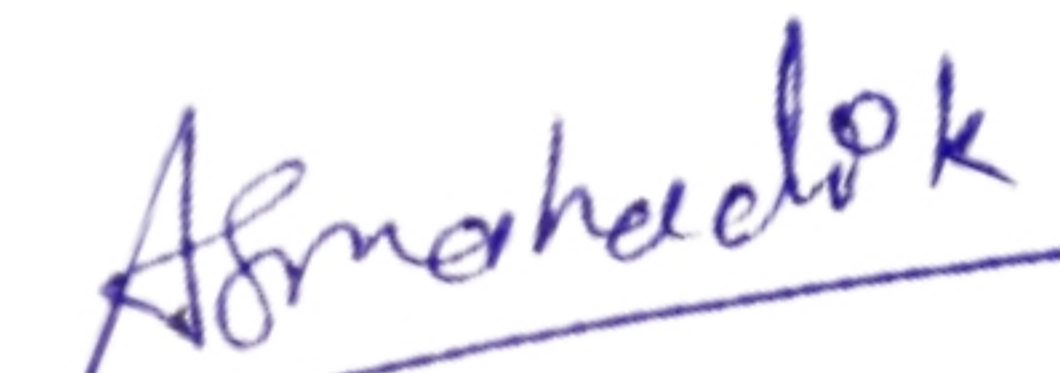


# Certificate


This is to certify that '**EcoShastra**', has conducted the Energy Audit of '**Shri Shivaji Arts, Commerce & Science College, Motala**'. It has been observed that the campus has taken initiatives to implement various Energy Efficiency Measures (ECM's) by identifying various energy Conservation Opportunities (ECO's) to conserve electrical energy.

Certified issued in: September 2021

Certificate valid till: August 2024

  
Amey S. Mahadik  
Energy Auditor



  
Dr. H. S. Patil  
Lead Auditor







***Shri Shivaji Education Society, Amravati's*****Shri Shivaji Arts, Science and Commerce College, Motala.**

Shri Shivaji Education Society, Amravati, was founded in 1932, by Late DR. Punjabrao Deshmukh, the first agriculture minister of independent India, and a member of the "Constitution Draft Committee" for the Government of India. It is one of the premier institutions of higher education in the Vidarbha region. It is worth mentioning that, under its canopy, there are in all 277 institutions including Medical, Agriculture, Engineering, Science, Law, Education as well as Higher Secondary Schools, High Schools, Middle Schools, and Primary Schools. The society has bagged many prestigious awards from the state government in recognition of its dedication to the field of education.

Shri Shivaji Arts, Science and Commerce College, Motala was established in 1990 under the guidance of a great visionary, academician and first agriculture central minister of independent India Dr. Panjabrao alias Bhausaheb Deshmukh. In the beginning it was providing only for maleducation in the faculty of Arts and Commerce. With the view to the importance of science and technology, the faculty of science was introduced in 2009 and in the same year the name of Arts and Commerce college was changed as Shri Shivaji Arts, Commerce and Science College Motala. Since the inception of science stream we started continuously taking serious efforts to provide education through science faculty to the poor and deprived students. It has very competent teaching staff in all departments as well as well-equipped science laboratories, computer department and rich and Central library, very beautiful neat and clean campus, women hostel, well developed oxygen park, botanical garden and 200m track for morning Walkers. The NCC and NSS unit which imparting the sense of social responsibility among all the students and also having Y.C.M.O.U. center. It always attempts to provide quality education to the students who are coming from all walks of life. Today it is the premier and multi- faculty educational center affiliated to Sant Gadge Baba Amravati University, Amravati.

EcoShastra



# Energy Audit Committee

Sr. No.	Name	Designation
1.	Dr. S. H. Pande	Chairman (Principal)
2.	Dr. H. S. Patil	Lead auditor
3.	Dr. D. B. Channekar	Coordinator
4.	Mr. P. M. Gaiki	Internal Energy Auditor
5.	Mr. A. S. Mahadik	External Energy Auditor
6.	Mr. P. A. Bramhankar	Energy Audit Expert



## *Energy Audit Report*

### **Introduction:**

Our nation has potential in intelligence but was on back foot in terms of quantity and quality of education. Today our nation is marching towards developed nation in numerous fields. Among these fields, we have to meet energy demand and to produce clean sustainable energy. Our world is now in energy crisis, we as world facing energy shortage, in future it may increase. This causes lack energy for institutional work. Thus, we need institutional management in saving electricity, using it in smart way and producing electricity effectively for socio-economical purpose.

For energy, our nation is entirely depending upon fossil fuels. India has huge potential in producing energy in renewable sector. In India, 35% electrical energy is used by industrial sector, 28% by domestic sector, 21% agriculture sector, 9% Commercial sector and rest of electricity is used by common public applications. Energy conservation is the solution to the energy crisis, meaning reduction in energy consumption without compromising quality and quantity of work. Energy Conserved is the start of energy management, it leads to adequate rating of equipment's, replacing it with efficient (high rating) and improving habits to save more energy. It will vital to being self-sufficient organization in terms electricity.

In the present study, energy audit has been done. For these audit laboratories, instruments, air conditioners, fans, lights, fans, computers and its peripheral devices are considered in the study. The study also include total economic budget of college for the electricity. We have calculated exact number



tubes, computer instruments etc. We studied all these mentioned things by collecting exactly data from survey.

### Experimental and data collection:

In building, in every room, how much fans, computers, instrument, AC etc. were measured. According to survey following data is collected.

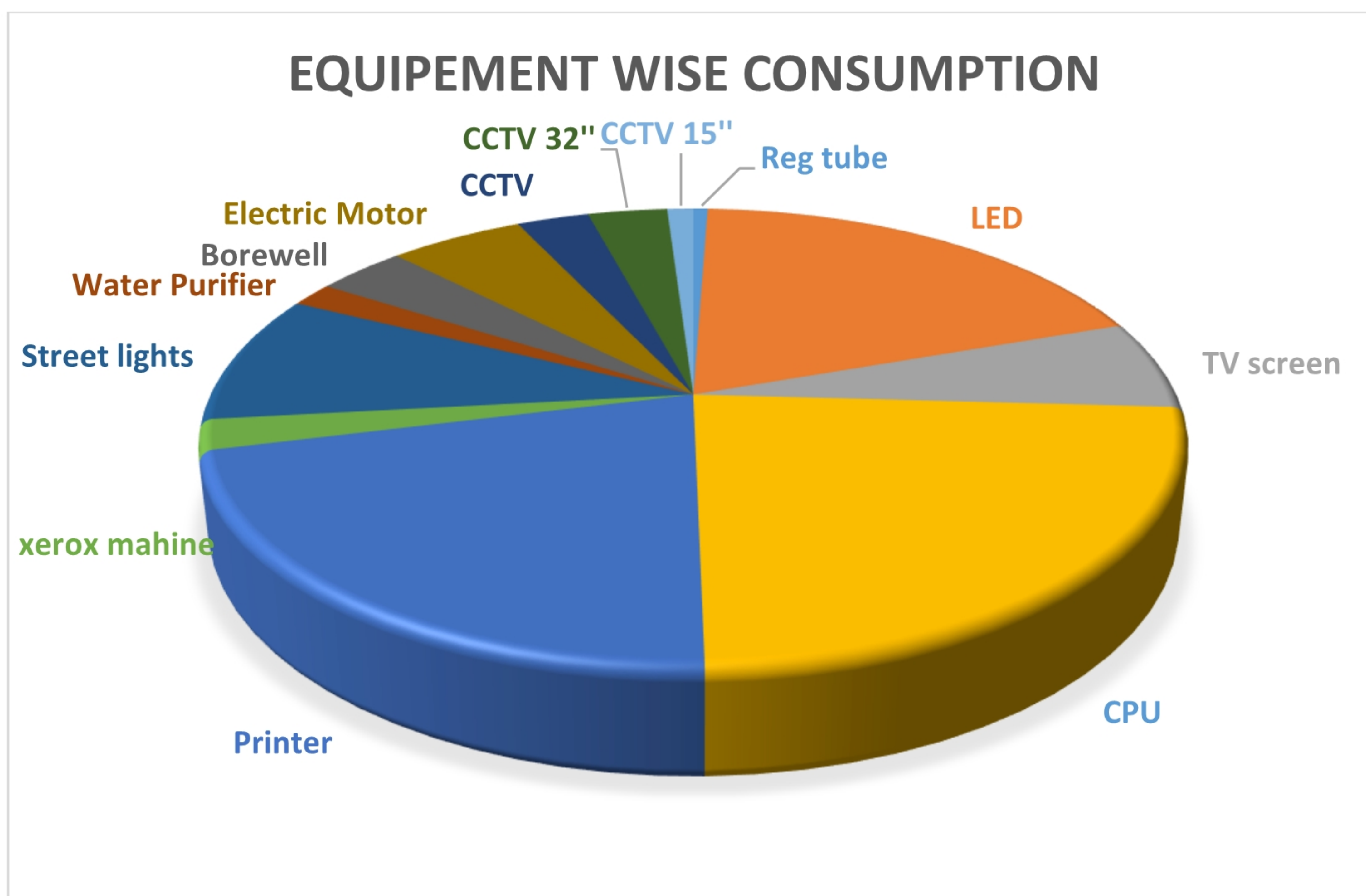
### Total Power requirement of various equipment:

Appliance	Total	Total Daily power
Regular tube	2	240
LED	80	8000
TV screen	2	2640
CPU	10	10000
Printer	12	9000
Xerox Machine	1	900
Street lights	10	3840
Water Purifier	1	720
Bore-well	1	1492
Electric Motor	2	2238
CCTV	02	1200
CCTV 32"	1	1320
CCTV 15"	1	432
<b>Total Monthly Consumption (KW)</b>		<b>1260.66</b>



**Consumption by various equipment**

According to given power consumed by different equipment.



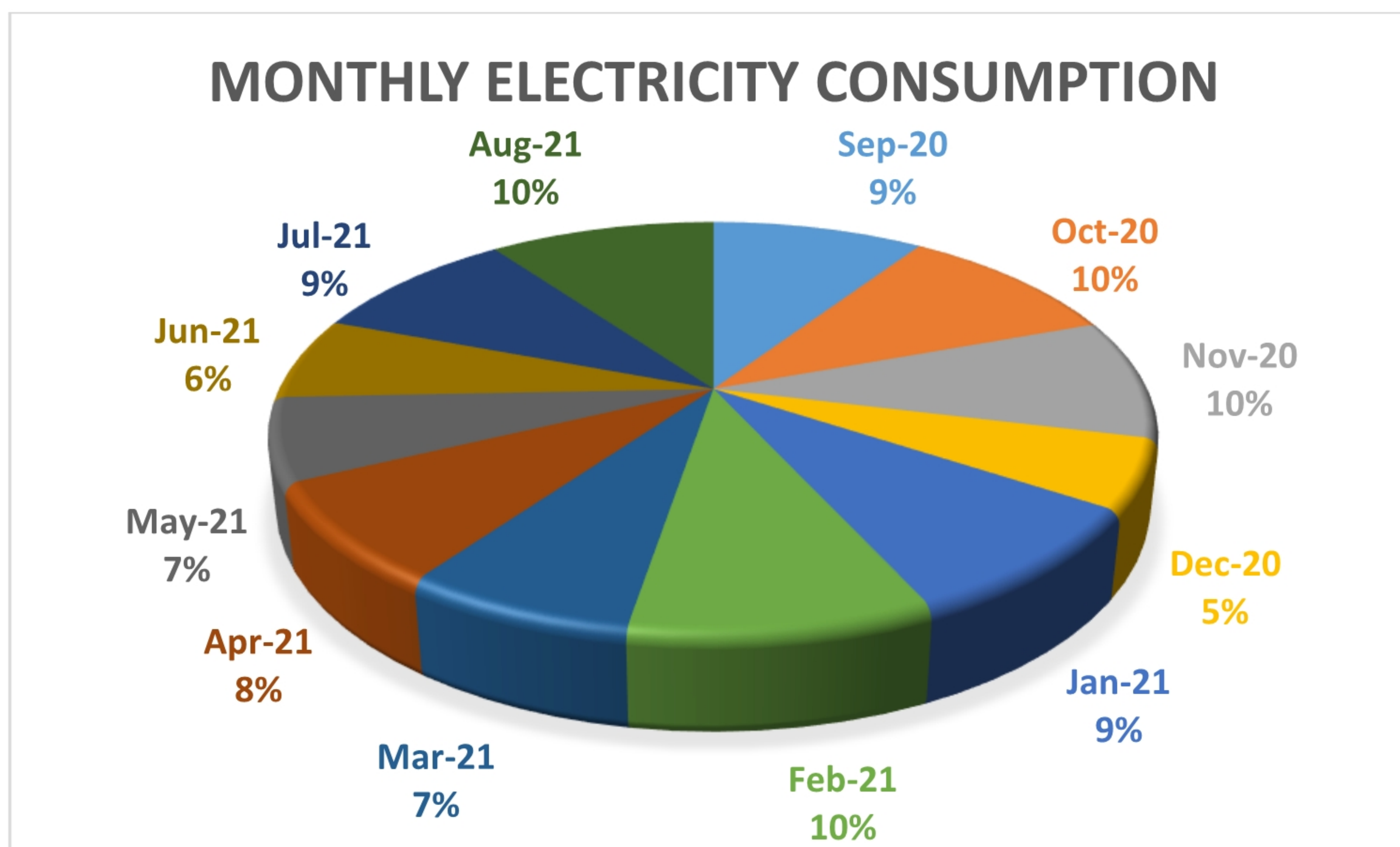
**Fig.** Power consumption by various equipments



Consumption Unit:

Sr. No.	Month	Consumption Unit (KW)
1	Sep-20	512
2	Oct-20	554
3	Nov-20	520
4	Dec-20	299
5	Jan-21	490
6	Feb-21	520
7	Mar-21	398
8	Apr-21	438
9	May-21	360
10	Jun-21	354
11	Jul-21	511
12	Aug-21	546
Total Power Consumption in Yearly (Units)		7780
Average Power Consumption in Monthly (Units)		648.3333





**Fig.** Graphical representation of contribution of various Instruments

### Recommendations:

1. Replace all regular tube light and CFL tube light using LED bulb, to save more power.
2. Use stabilizers for AC, Xerox and other heavy load machines.
3. Use N-computing instead of separate computer assembly.
4. Use Renewable energy sources like Solar, Wind for power Generation.

### Results and Discussion:

As per energy audit, electricity audit is done in Shri Shivaji of Arts, Commerce & Science College, Motala. We have collected data by considering tube light, fan, computers, printers and other instruments. The total energy required is 7780 KW.