पूज्य साने गुरुजी विद्या प्रसारक मंडळाचे
औषधनिर्माणशास्त्र महाविद्यालय
पो. बॉक्स नं. ४१
शहादा, जि. नंदुरबार,(महाराष्ट्र)४२५४०९

॥ उत्तिष्ठत जाग्रत प्राप्यवरान्निबोधत ॥

Poojya Sane Guruji Vidya Prasarak Mandal's
COLLEGE OF PHARMACY
P. O. Box. No.41
Shahada, Dist.: Nandurbar, (M.S.) 425 409

Approved by AICTE & PCI New Delhi ● Permitted by Govt . of Maharashtra ● Affiliated to KBC, NMU Jalgon
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Bapusaheb Dipak Patil
(B.Com.)
President

Smt. Kamaltai P. Patil
Hon. Secretary

Dr. Sunil P. Pawar
(M.Pharm., Ph. D.)
Principal

7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures
Use of LED bulbs/ power efficient equipment

The Institution is conscious about electricity conservation right from the beginning. All the buildings are constructed to provide ample natural light during the day time. This saves considerable amount of electricity. Earlier tube lights were used in the laboratories and staff rooms. These have been replaced as and when the need arose by LED lights thereby reducing the consumption of electricity by almost 40 percent. These measures have been practiced since last years.

The electricity bills are collected annually and audited by an authentic agency to monitor the consumption of electricity and develop measures to save the consumption from time to time. Sensor based lights will be installed in the office shortly as a measure to be taken to save more electricity. Save electricity posters are placed in every laboratory and in the campus.

In microbiology and other subject practicals the autoclave has to be run almost daily for practical and project work for sterilization of media. Also the hot air oven is used for sterilization of glassware. The department has made it mandatory to use the equipment in such a way that all the sterilization work of the entire classes is done, simultaneously only once a day. This prevents the recurring use of the equipment and thereby saves electricity. All the heavy duty instruments are put off when they are in out of use state. A strict monitoring of switching off the lights and fans as well as other appliances is done in the campus and vigilance of the same is maintained before leaving the laboratories, classrooms and staff rooms in the campus.

P.S.G.V.P.M's SHAHADA Dist.NDR. COLLEGE OF PHARMACY

PRINCIPAL
P.S.G.V.P.Mandal's, College of Pharmacy
SHAHADA-425409,Dist.NANDURBAR

ENERGY AUDIT

2019-20 & 2020-21

AUDIT REPORT

Studied for

Poojya Sane Guruji Vidya Prasarak Mandal's

College of Pharmacy

Shahada, Dist - Nandurbar,

Maharashtra, Pin Code: 425409, India

Analysed by

Greenvio Solutions

05 April 2022

Background reference image Janko Ferlic on pexels

Disclaimer

The Audit Team has prepared this report for the **Poojya Sane Guruji Vidya Prasarak Mandal's College of Pharmacy,** located at *Shahada, Dist - Nandurbar, Maharashtra, Pin Code: 425409, India* based on input data submitted by the College analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the Hon'ble Management and College. The warranty or undertaking, expressed 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.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who has completed audits of multiple Institutes including Technical, State University, Private University and Single Faculty Colleges for a total of more than 45 lakhs+ sq. ft. of Built-up area audited till date Pan India as an Accredited and Certified Green Building Professional-Architect; ISO Certified IA (IMS) Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

Sustainable Academe is our department for conducting Audits

Palghar District, Maharashtra- 401208

sustainableacademe@gmail.com

Acknowledgement

The Audit Assessment Team thanks the **Poojya Sane Guruji Vidya Prasarak Mandal's College of Pharmacy, Shahada District, Maharashtra** for assigning this important work of Energy Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **Shri. Dipak Purushottam Patil,** President; **Shri. Jagdish Girdhar Patil,** Vice President; **Smt. Kamaltai Purushottam Patil,** Hon. Secretary; **Shri. Makarand Nagin Patil,** Coordinator (Academics & Gen.Admin.); **Shri. Pandurang Ramdas Patil,** Coordinator (Finance and Construction) and **everyone from the Management.**

Our heartfelt thanks to Chairperson of the entire process **Dr. Sunil Pandit Pawar,** Principal for the valuable inputs.

We are also thankful to **College's Task force the faculty members - Dr. Ghanshyam Chavan** for the excellent coordination; **Mrs. Sulbha Mahajan, Mr. Yogesh Rokade,** and **Mr. Roshan Chaudhari; Mr. Hasni Sayyed Hamid Yahiya,** Academic Incharge; **Mr. Sandip Amarsing Tadvi,** Exam Incharge and **Mr. D. D. Patil,** Office Superintendent

We highly appreciate the assistance of the Clerks - **Mr. Kalpesh Patil, Mr. Yogesh Patil** and the **entire Teaching, Non-teaching and Admin staff** for their support while collecting the data.

Sustainable Academe
Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

Contents

1. Introduction

1.1 About Poojya Sane Guruji Vidya Prasarak Mandal

Established in the year 1969, the Mandal has been serving the sacred cause of education in the remote, mofisil part of the State of Maharashtra. Though the jurisdiction of the Mandal is entire Maharashtra, it has concentrated on the Shahada Tehsil of the State and this tehsil is 450 kilometers away from the state capital (Mumbai), adjoining the confluence of Gujarat to the North side and Madhya Pradesh to the East.

This area is mainly populated with the economically socially backward, poor peasants & the landless adivasis. To educate the young generation of such poor section of society. The Mandal has the privilege to run Colleges of Arts, Commerce, Science, Education, Engineering streams and Polytechnic, Industrial Training Center, Pharmacy are the other units which the Mandal conducts.

The students have an opportunity to secure degrees like M.Phil. and Ph.D. in various subjects, B.A., B.Com., B.Sc., M.A., M.Com., M.Sc., B.E., B.Ed., B.Pharm., B.Sc. (Agri.) etc.

1.2 Statements of the Institution

Vision - To mould young generation to new technology of high order that can meet the challenges in fast developing technological world & to be prepare for the legal civic & moral responsibilities of the profession by shaping discipline, competence & character of the pharmacists.

Mission - To become center of excellence of pharmacy education & research to provide world class professionals & serve humanity at large.

1.3 About the Institution

P. S. G. V. P. Mandal's College of Pharmacy was established in the year 1994 by Honorable Sahakar Maharshi Shri. Annasaheb P. K. Patil with the objective *to educate, motivate and uplift the vocational skills of young generation of peasants and the landless workers.* This helps to upgrade the quality educational facilities in almost all the disciplines.

The College is a premier academic institution in this region, located in 200 acres sprawling

campus absolutely serene such that a student automatically turns himself to learning with full concentration and devoid of diversions.

The College provides for instruction in various under-graduate and post-graduate courses in the faculties of in the faculties of pharmacy. Today more than 400 students registered for pharmacy. The teaching faculty consists of 18 learned faculty members and experts in their own subject discharging their duties with a sense of dedication and devotion.

The aim of the College is *"Not only to prepare the undergraduate and post graduate students for their future success in life through a host of up-to-date courses in Pharmacy."*

The motto of the College is *"To create positive stress-free environment for students as well as for staffs and produce awareness regarding maintenance of pollution free environment."*

The objective of the College is *"To develop good human and moral values and create divine thought of national integrity among students and staffs."*

The College offers the following courses.

- **Diploma in Pharmacy (D. Pharmacy)**
  - Approved by PCI & AICTE, New Delhi,
  - Recognized by DTE & Govt. of Maharashtra
  - Affiliated by MSBTE, Mumbai (Maharashtra)
- **Bachelor of Pharmacy (B. Pharm.) - Departments (Pharmaceutics, Pharmaceutical Chemistry, Pharmacognosy and Pharmacology)**
  - Approved by PCI & AICTE, New Delhi,
  - Recognized by DTE & Govt. of Maharashtra
  - Affiliated by KBC NMU Jalgaon (Maharashtra)
- **Masters of Pharmacy (M. Pharm.)**
  - Approved by PCI & AICTE, New Delhi,
  - Recognized by DTE & Govt. of Maharashtra
  - Affiliated by KBC NMU Jalgaon (Maharashtra)

The College works towards training young men and women to be competent, committed and compassionate, and lead in all walks of life.

1.4 The surrounding premises around the Institution

The Premises is situated amidst the landscape serene of **Shahada district of Maharashtra State** with immense peace and calmness in the surroundings. *The College is locate very close to the Gomati river and has a huge ground adjacent to its location, it is situated amidst the Sister Institutes of the Mandal.*

The College is surrounded by Educational Buildings, huge open areas, Residential and Commercial areas on the macro front from all the sides. There is a frontal approach which provides quite a beautiful appreciation space while approaching the premises; this area is surrounded by huge trees which positively complement the background-foreground aspect in terms of Natural space and built-form Architecture. It also provides ample shade which enhances the micro climate of the region. The location of College is feasible to the nearby essential amenities such as Public Health Center, Fire Station, Civic body-Public administrative buildings, Recreational gardens and Police Station.

1.5 Assessment of the College

1.5.1 Approval

The College has received the relevant approvals from the following:

- **Pharmacy Council of India (P.C.I) -** A statutory body of government of India constituted under the Pharmacy Act, 1948, responsible for regulation of pharmacy education and practice of profession in the country for registration as a pharmacist.
- **All India Council for Technical Education (AICTE) -** A national-level Apex Advisory Body to conduct a survey on the facilities available for technical education and to promote development in the country in a coordinated and integrated manner.

1.5.2 Affiliations

The various courses provided by the College are affiliated to the following bodies:

- **Maharashtra State Board of Technical Education (MSBTE), Mumbai Maharashtra** - An autonomous Board of Government of Maharashtra mandated to regulate matters pertaining to Diploma Level Technical education in the state.
- **Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon,**

Maharashtra - A university situated in Jalgaon, Maharashtra. Formerly North Maharashtra University was established on 15 August 1990 after separating it from the parent University of Pune.

1.5.3 Recognition

The courses provided by the College are recognized by **Directorate of Technical Education (D.T.E.) and Govt. of Maharashtra.**

2. Institution overview

2.1 Populace analysis for Academic year 2019-20

2.1.1 Students data

The student data (shared by the College) shows there were a total of **212 Boys and 195 Girls** students thus **a total of 407 students** in the premises.

2.1.2 Staff data

Type	Male	Female	Total
Admin Staff	04	00	**04**
Teaching Staff	13	07	**20**
Non-Teaching Staff	16	00	**16**
Total Staff Members	**33**	**07**	**40**

Table 1: Staff data of the Institution for 2019-20

The staff data shows the premises had a total of **40** Staff Members.

2.2 Populace analysis for Academic year 2020-21

2.2.1 Students data

The student data (shared by the College) shows there were a total of **251 Boys and 211 Girls** students thus **a total of 462 students** in the premises.

2.2.2 Staff data

Type	Male	Female	Total
Admin Staff	04	00	**04**
Teaching Staff	13	06	**19**
Non-Teaching Staff	15	00	**15**
Total Staff Members	**32**	**06**	**38**

Table 2: Staff data of the Institution for 2020-21

The staff data shows the premises had a total of **38** Staff Members.

2.3 Total College Area & College Building Spread Area

The **total site area is 8 acres** and the **total Built-up area of College is 1,02,203.30 sq. ft.** for **a total of 500 footfalls.**

2.4 College Infrastructure

2.4.1 Establishment

The College is located pretty close to nature and hence has very fresh environment which is absolutely pollution free and healthy. The Building is a Reinforced Cement Concrete (RCC) framework building. **Overall the Infrastructure of the Building is excellent in terms of the Architecture Design and Green Building Design. The Premises covers quite a few of the requirements for a Green Habitat.**

2.4.2 Spatial Organisation

The overall ambience of the College is warm and inviting. The classrooms and other spaces have ample natural ventilation in the form of clear glass windows with fresh air ventilation. The architecture of the building is quite well designed. The colour palette not just helps the building to stand out but also provides an Institutional arena. It balances with the local architecture with the natural landscapes of huge trees all around. The design emphasis on providing calmness to the built form and gradually merges with the serene landscape. The floor to floor height is more than 10 feet. There is no provision for lifts in the premises, whereas there are amenities such as CCTV, Fire extinguishers, Library and first aid box.

2.4.3 Operation and Maintenance of the premises

The interview session with the staff regarding the operation and working hours is summarized in the table. The Institutions are open Monday to Saturday for full day.. The detail wise timing for each is mentioned below.

S. No.	Section	Spaces	Time	Hours/ day	Days in a year
1	Main Institutional College	Student areas and Teaching faculty	Monday to Saturday (10:00 a.m. to 05:00 p.m.)	7	280
2	General areas	Admin areas and library, Passage, staircase, toilet	Monday to Saturday (09:00 a.m. to 05:00 p.m.)	8	300

Table 3: Schedule of the timings of the premises

3. Green Building Study Audit

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution a sustainable and healthy premises for its inhabitants.

3.2 Analysis for the Green Building Study Audit

The procedure included detailed verification for the following:

Energy Audit

- Analysis of the Lights, Fans, AC, Equipment
- Renewable energy
- Scope for reducing the current energy bills if any
- Improvement in the thermal comfort of the campus

Green Audit

- Green initiatives
- Hygiene audit
- Water Audit - Analysis of the current water consumption of campus; Scope to include Rain water harvesting and Waste water treatment in campus
- Waste Audit - Current waste produced, its segregation and usage; Strategies to be adopted for waste management and awareness

Environmental Audit

- Analysis of the current landscape + hardscape of campus
- Analysis of the flora and fauna of campus
- Strategies adopted at present to enhance vegetation
- Measures that can be adopted for ecological improvement of the premises.

3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collected and preparation of the Report.

3.4 Timeline of the activities for Green Building Study Audit

- 17 January 2021 – Discussion with the College
- 19 January 2021 – Allotment and Initiation by the College
- 25 January 2022 – Survey of the Student and staff submitted
- 27 February 2022 – Data submitted by College
- 05 April 2022 – Submission of the Report

4. Energy Audit

4.1 Sources of Energy consumption

The premise uses following sources of energy consumption.

4.1.1 Primary sources

Electrical (Metered) – Light, Fans, AC, Equipments, Pumps are major consumers.

4.1.2 Secondary sources

1. **UPS –** There are 2 UPS used in the premises, whenever necessary amount is spent only towards the repairs.
2. **Gas cylinders –** There are 4 gas cylinders required in a year and around Rs. 7,600/- is spent towards the same.

4.2 Site investigation analysis

The Site investigation observations and interviews with the Maintenance staff, Electrical department in charge are summarised below:

- The **switch-off drills are practised at present,** the maintenance staff and Lab Attendants put off switches of all equipments regularly.
- All the **computers are shut-off after use** and also put on power saving mode.
- There are **display boards encouraging staff and students to save energy are put up in the classrooms and laboratories**.
- There are **no Ultra-violet lights and any other harmful lights used** in the premise.

4.3 Actual Electrical Consumption as per Bills

The admin department had shared the bills for Meter which is connected to all Buildings and is main source of energy supply. The supplier is Maharashtra State Electricity Distribution Company Limited (MSEDCL).

4.4 Survey Results

An online survey was conducted to analyse the student and staff views about the Energy management practices adopted in College, following is the result received.

4.4.1 Participation

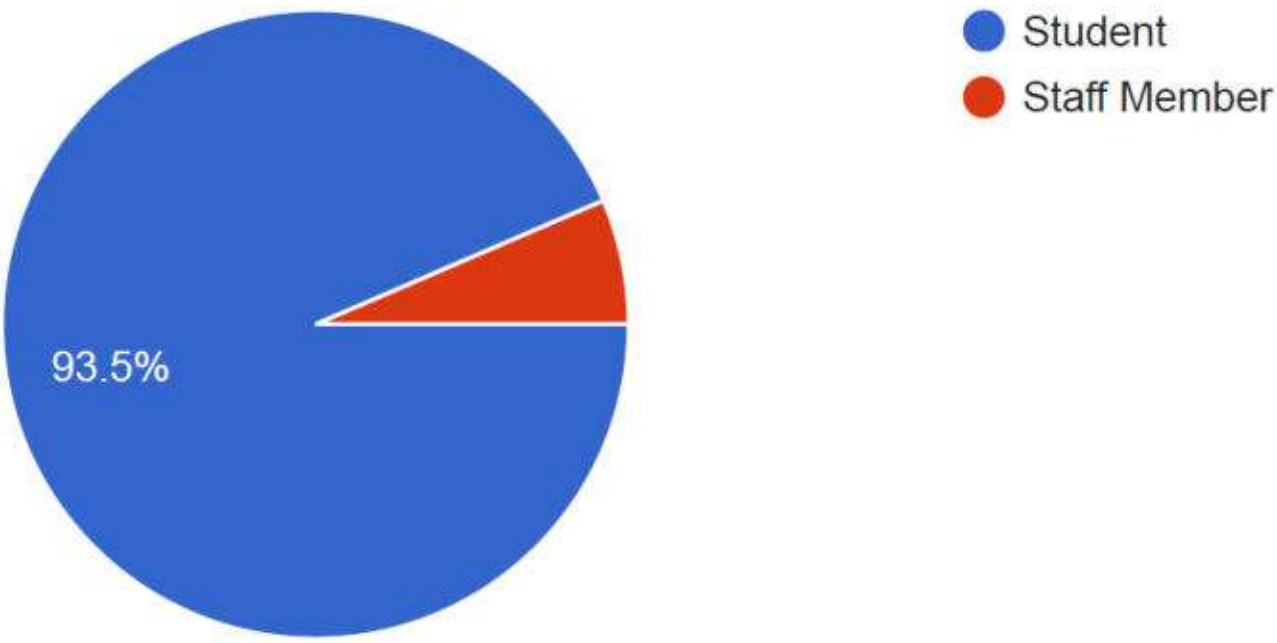

Figure 1: Participation analysis in the survey

A total of **217 responses** were received out of which 94% were students.

4.4.2 Review of the Energy management practices in the premises

Note: The Participants were asked to review the practice on a scale of 1-5 with scale components as follows:

- Scale 1 – Poor
- Scale 2 – Satisfactory
- Scale 3 – Good
- Scale 4 – Very good
- Scale 5 – Excellent

The figures in each of the columns of graph depict the Number of participants responses in numerical (Percentage of the participant response) – For example 101 responses

(44.5%)

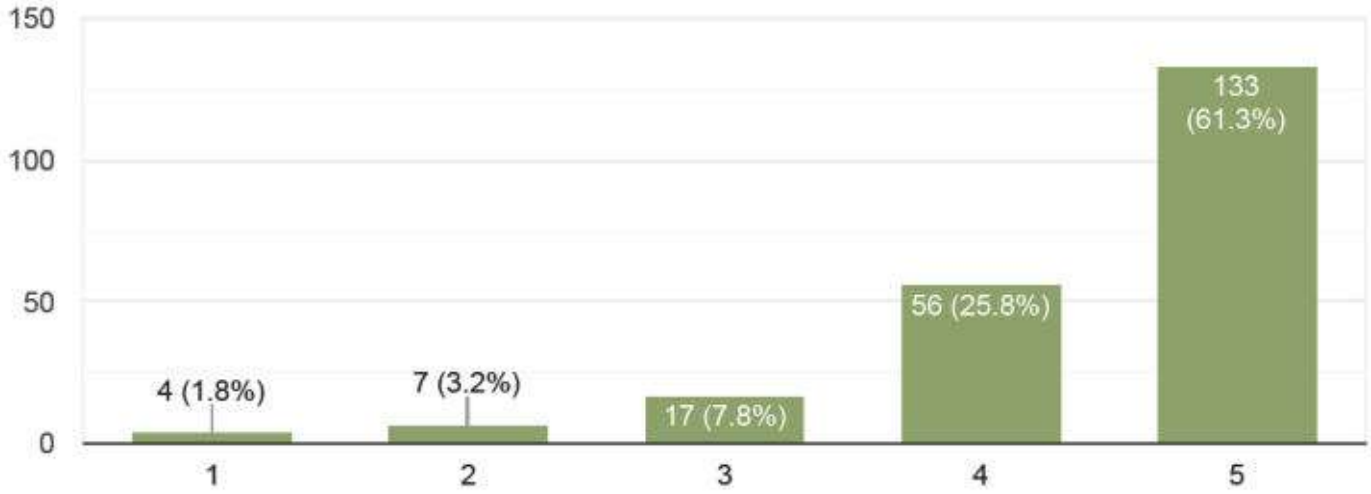

Figure 2: Energy management practices in College

The students, staff **(almost 61%) of the responses found the practices to be excellent** and **26% of the responses found practices to be good.**

4.5 Calculated Electrical Consumption as per inventory

The electricity bills provide actual consumption data. The following is the calculated consumption. It is done to understand the percentage of energy usage in the premises by various applications. It is based on the inventory collected and interviews with the staff. The additional data such as wattage is taken from market research. In terms of electrical consumption, the main sources are lights, fans, ac, equipment. The inventory and data collection for sources of energy consumed in the premise in summarised in the following sections.

Note: The following analysis is combined for entire premise taking into considerations the duration before pandemic to understand the consumption pattern as post pandemic the premise is used only for a few hours.

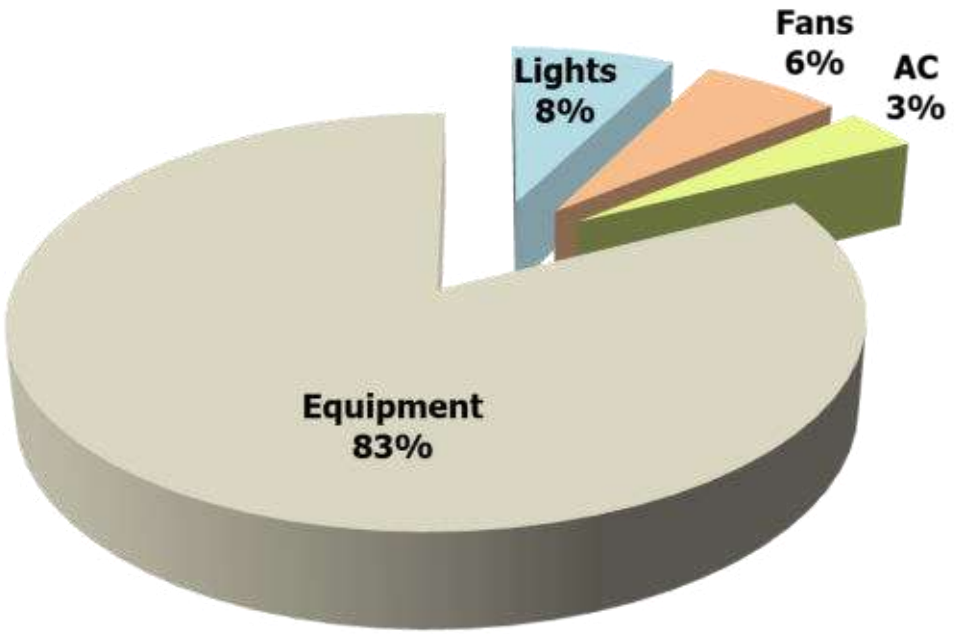

Figure 3: Summary of the calculated electrical consumption as per inventory

The above graph shows that equipment consume 83% followed by lights at 8% the fans at 6% and the air conditioners consume 3% of the total calculated electrical energy.

4.6 Lights

4.6.1 Types of lights

There are a total of **123 lights in the premises;** the following table shows the various types of lights in the premises.

S. No.	Type	Nos.
1	CFL	4
2	Non-LED	83
3	LED	36
Total		**123**

Table 4: Summary of the types of lights in premise

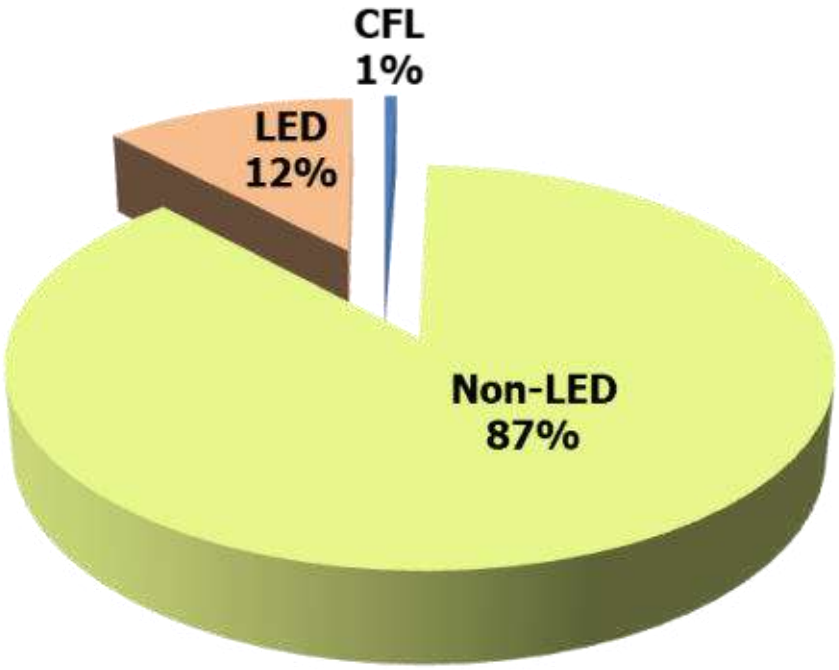

Figure 4: Energy consumed by types of lights in the premise based on the usage study

The analysis of the types of lights in premises shows **Non-LED lights 87%** followed by **LED lights consuming 12%** and **CFL lights consume 1%**

4.6.2 Block-wise consumption analysis

The energy consumption of lights is **3,565 kWh** of energy; the following graph shows the block wise consumption.

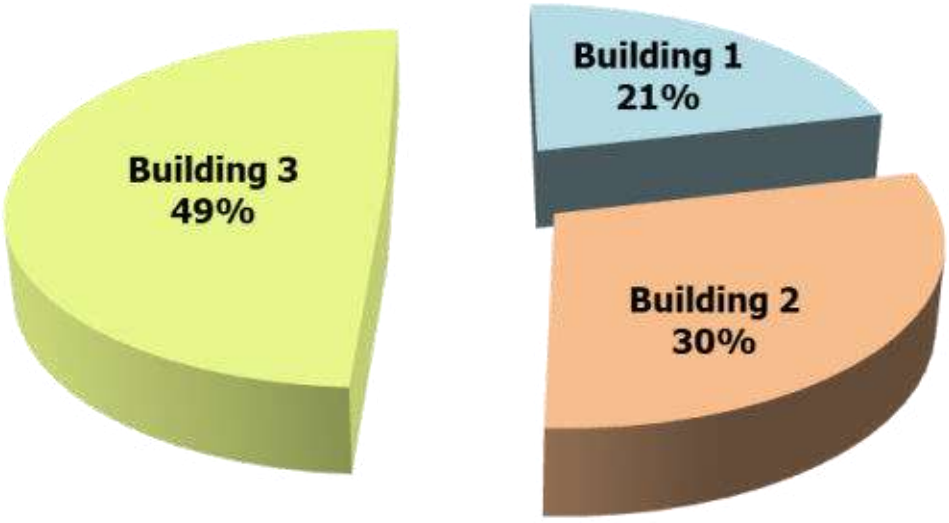

Figure 5: Energy consumed by lights block wise

The above analysis shows the lights in the **Building 3 consumes 49%; Building 2 consumes 30%** and **Building 1 consumes 21%** of the total power consumed by lights.

4.6.3 Requirement of NAAC

4.6.3.1 Alternative Energy Initiative

Percentage of power requirement met by renewable energy sources – There are no solar panels or any renewable energy sources, thus *0% of the power requirement is met and utilized in the premises.*

4.6.3.2 Percentage of lighting power requirement met through LED bulbs

The premise has LED Lights contribute to 29% in terms of number and **12% of the power requirement** is met through the same. As per our study we could conclude that both of these are highest contributions among all the types of lights.

4.6.4 Site investigation observations

Some of the points noticed are as follows:

1. All lights are in working conditions.
2. Daily monitoring and check is done by the maintenance staff.
3. There was no fuse defect observed.

4.7 Fans

4.7.1 Types of fans

There are a total of **100 fans** in the premises.

S. No.	Type	Nos.
1	Large motor exhaust fan	1
2	Small motor exhaust fan	4
3	Wall Mounted fan	1
4	Ceiling Fans	94
Total		**100**

Table 5: Summary of the types of fans in premise

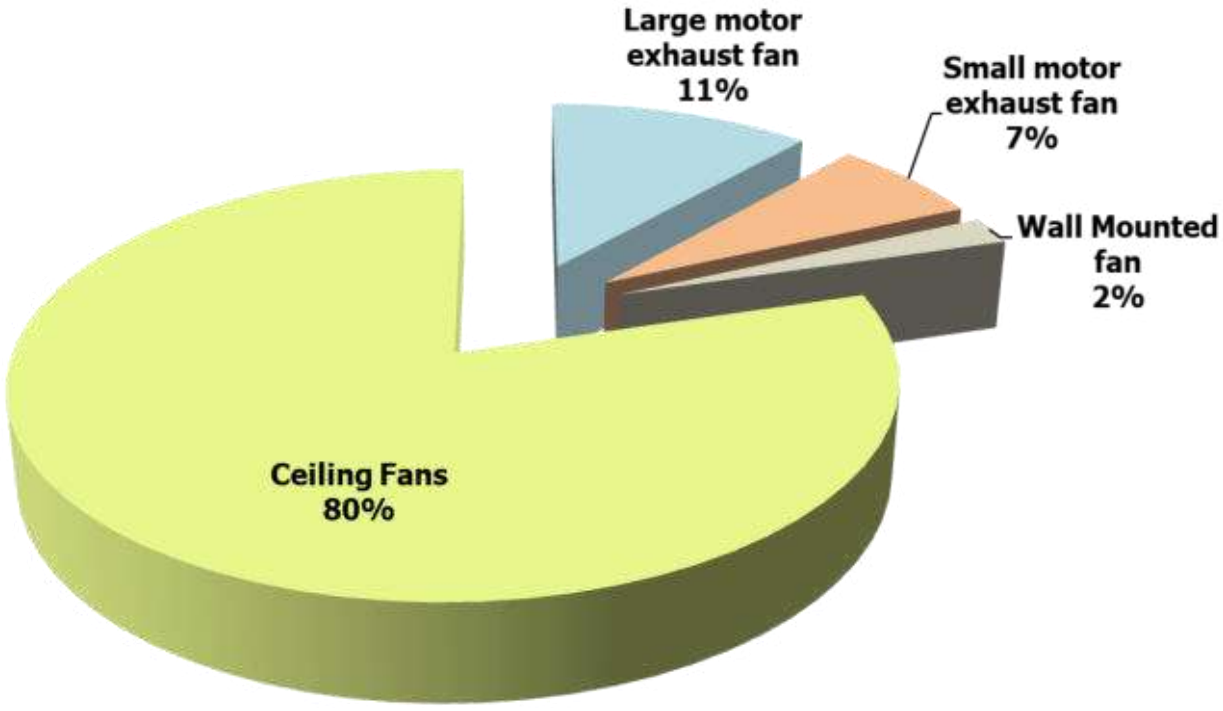

Figure 6: Energy consumed by types of fans in the premise based on the usage study

The analysis of the types of fans in premises shows **Ceiling fans 80%** followed by **Large motor exhaust fan consume 11%;** the **Small motor exhaust fan consume 7%** and the **Wall mounted fans consume 2%**

4.7.2 Block-wise consumption analysis

The energy consumption of fans is **3,084 kWh** of energy; the following graph shows the block wise consumption.

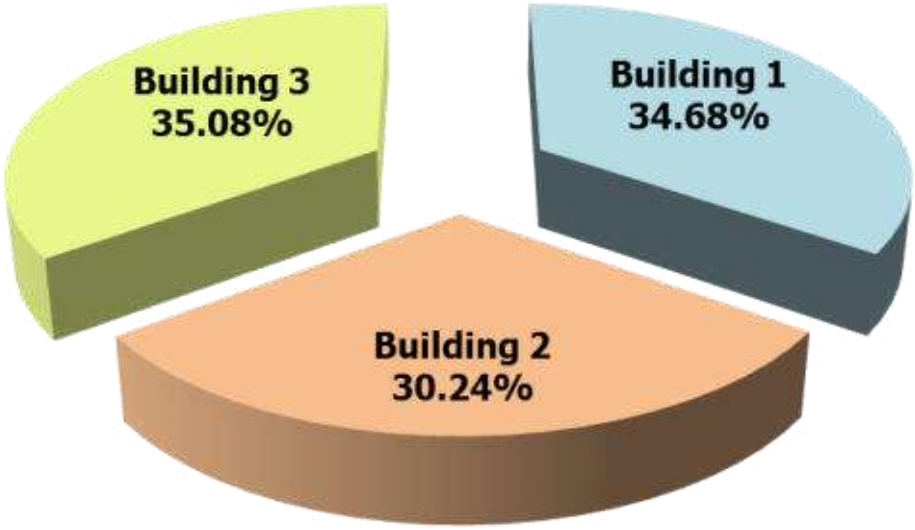

Figure 7: Energy consumed by fans block wise

The above analysis shows the fans in the **Building 3 consumes 35.08%; Building 2 consumes 34.68%** and **Building 1 consumes 30.24%** of the total power consumed by fans.

4.7.3 Site investigation observations

Some of the points noticed are as follows:

1. All fans are in working conditions.
2. Daily monitoring and check is done by the maintenance staff and admin staff in an excellent manner.

4.8 Air conditioners

4.8.1 General information

There are **4 air conditioners** in the entire premise. two of these are located in Building 1 and two in building 2. The energy consumption of all air conditioners is **1,658 kWh** of energy.

4.8.2 Site investigation observations

Some of the points noticed are as follows:

1. Daily monitoring and check is done by the maintenance staff and admin staff in an excellent manner.
2. The Outdoor Unit is properly cleaned and maintained well.
3. The Outdoor Unit does not have any dust collection problem.

4.8.3 About the replacement of Current AC

The current air conditioners are well maintained, through there is not an immediate requirement for replacement however, whenever the College undergoes redevelopment or a new block is constructed there can be provisions for replacement with energy efficient appliances or new air conditioners that require less power consumption.

4.9 Equipment

4.9.1 Types of Equipment

There are a total of **219 equipment** in the premises. The various types are mentioned in the table below.

Sr. No	Floor	Building	Name	Nos
1	Ground floor	Building 1	Air Curtain	2
2	Ground floor	Building 1	Ampoule Filling Machine	6
3	Ground floor	Building 1	Analgesiometer	3
4	Ground floor	Building 1	Audio System (Mike, speakers, Amplifier)	3
5	Ground floor	Building 1	Autoclave	1
6	Ground floor	Building 1	Autoclave	1
7	Ground floor	Building 1	Bacteriological Incubator	1
8	Ground floor	Building 1	Bath Sonicator	1
9	Ground floor	Building 1	Brookfield Viscosity	1
10	Ground floor	Building 1	Centrifuge Machine	1
11	First floor	Building 1	Colony Counter	2
12	Ground floor	Building 2	Desktop Computer	1
13	Ground floor	Building 2	Desktop Computer	1
14	Ground floor	Building 2	Desktop Computer	1
15	Ground floor	Building 2	Desktop Computer	2
16	Ground floor	Building 2	Desktop Computer	1
17	Ground floor	Building 2	Desktop Computer	1
18	Ground floor	Building 2	Desktop Computer	1
19	Ground floor	Building 2	Desktop Computer	1
20	Ground floor	Building 2	Desktop Computer	1
21	Ground floor	Building 2	Conductometer	3
22	Ground floor	Building 2	Desktop Computer	1
23	Ground floor	Building 2	Disintegration appratus	1
24	Ground floor	Building 2	Disolution apparatus	1
25	Ground floor	Building 2	Disolution apparatus	1
26	Ground floor	Building 2	Dissolution Test Machine	1
27	Ground floor	Building 2	Distillation assembly	1
28	Ground floor	Building 2	Distillation unit	1
29	Ground floor	Building 2	Distillation unit	1
30	Ground floor	Building 2	Electric Water Bath	1
31	Ground floor	Building 2	Electric Water Bath	1
32	Ground floor	Building 2	Electrical Kettle	1
33	Ground floor	Building 2	Heating Mantle	1
34	Ground floor	Building 2	Heating mantle	1
35	Ground floor	Building 2	Heating Mantle	2
36	Ground floor	Building 2	Heating Mantle	1
37	Ground floor	Building 2	Heating Mantle	2
38	Ground floor	Building 2	Heating Mantle	1
39	Ground floor	Building 2	Homogeniser	1
40	Ground floor	Building 2	Hot Air Oven	2
41	Ground floor	Building 2	Hot Air Oven	2
42	Ground floor	Building 2	Hot Air Oven	2
43	Ground floor	Building 2	Hot Air Oven	1
44	Ground floor	Building 2	Hot Air Oven	1
45	Ground floor	Building 2	Hot Air Oven	1
46	Ground floor	Building 2	Incubator	1
47	Ground floor	Building 2	Induction Motor	1
48	Ground floor	Building 2	IR Moisture Balance	1

49	Ground floor	Building 2	Wifi router	1
50	Ground floor	Building 2	Wifi router	1
51	Ground floor	Building 2	Wifi router	2
52	Ground floor	Building 2	Wifi router	2
53	Ground floor	Building 2	Wifi router	6
54	Ground floor	Building 2	Wifi router	1
55	Ground floor	Building 2	Laminar Air Flow unit	1
56	Ground floor	Building 2	Laptop	1
57	Ground floor	Building 2	Laptop	1
58	Ground floor	Building 2	Laptop	1
59	Ground floor	Building 2	Laptop	1
60	Ground floor	Building 2	Laptop	1
61	Ground floor	Building 2	LCD Display	1
62	Ground floor	Building 2	Projector	1
63	Ground floor	Building 2	Magnetic Stirrer	1
64	Ground floor	Building 2	Magnetic Stirrer	2
65	Ground floor	Building 2	Magnetic Stirrer	1
66	Ground floor	Building 3	Mechanical Stirrer	1
67	Ground floor	Building 3	Mechanical Stirrer	1
68	Ground floor	Building 3	Microtone Cutter	1
69	Ground floor	Building 3	Microwave oven	1
70	Ground floor	Building 3	Mini Magnetic Stirrer	1
71	Ground floor	Building 3	Muffle furnace	1
72	Ground floor	Building 3	Oven	1
73	Ground floor	Building 3	Projector	1
74	Ground floor	Building 3	Photo Calorimeter	3
75	Ground floor	Building 3	Photo Electric Calorimeter	1
76	First floor	Building 3	PhotoFlorimeter	1
77	First floor	Building 3	Polarimeter	1
78	First floor	Building 3	Printer	1
79	First floor	Building 3	Printer	1
80	First floor	Building 3	Printer	1
81	First floor	Building 3	Projector	1
82	First floor	Building 3	Projector	1
83	First floor	Building 3	Projector	1
84	First floor	Building 3	Projector	1
85	First floor	Building 3	Refrigerator	1
86	First floor	Building 3	RO Water Machine	1
87	First floor	Building 3	Scanner	1
88	First floor	Building 3	Sealing Machine	1
89	First floor	Building 3	Sieve Shaker	39
90	First floor	Building 3	Sodium Vapour Lamp Transformer (Teknik)	1
91	First floor	Building 3	Student Organ Bath	1
92	First floor	Building 3	Student Organ Bath	1
93	Second floor	Building 3	Suction Pump	20
94	Second floor	Building 3	Suction Pump	1
95	Second floor	Building 3	Tablet Disintegration Apparatus	1
96	Second floor	Building 3	Tablet punching machine	1
97	Second floor	Building 3	Telephone	1
98	Second floor	Building 3	Telephone	1
99	Second floor	Building 3	Telthermometer	5
100	Second floor	Building 3	Thermostat	1
101	Second floor	Building 3	UV-spectrophotometer	1
102	Second floor	Building 3	UV-VIS Spectrophotometer	1
103	Second floor	Building 3	Vending Machine	1
104	Second floor	Building 3	Weighing Balance	1
105	Second floor	Building 3	Weighing Balance	1

106	Second floor	Building 3	Weighing Scale	1
107	Second floor	Building 3	Weighing Scale	1
108	Second floor	Building 3	Wifi router	1
109	Second floor	Building 3	Wifi router	1
110	Second floor	Building 3	Wifi router	2
111	Second floor	Building 3	Wifi router	1
112	Second floor	Building 3	Wifi router	1
113	Second floor	Building 3	Wifi router	1
114	Second floor	Building 3	Wifi router	1
115	General usage		CCTV	7
116			Scanner	2
117			RO Machine	1
118			Sanitary vending machine	1
119			Sanitary incinerator machine	1
120			Motor starter	2
Total				**219**

Table 6: Types of equipment in the premise as per the quantity

UPS (when used for electrical consumption else it is a battery backup and does not require electricity as an equipment).

4.9.2 Site investigation observations

Some of the points noticed are as follows:

1. All equipments are in working conditions and daily monitoring and check is done by the maintenance staff and admin staff in an excellent manner.
2. No defect was found in any equipment of electrical consumption.

4.10 Recommendations for a Sustainable Habitat

Over the time energy efficient appliances have been a boon not only to the energy saving parameters they adhere to but also the eco-friendly habits it helps to inculcate. The Institution such as Schools and Colleges are the best way to implement these initiatives. It creates awareness among the students at a young age. The Institutions also act as a symbol and representative of being an energy efficient premise.

Following the analysis we found are some of the suggestions which can be implemented for an energy efficient Institution. This would help in reduction of the current electrical consumption by a major percentage.

4.10.1 Electromechanical systems – Electrical and Lighting

Section 1 – Lights

Non-LED Lights

The current light analysis shows that Non-LED tube lights consume anywhere between 24W, 36W and 40W when in use; similarly the CFL lights consume more than 25 to 28W when is use; these should be replaced with LED lights which consume on an average 16-20W when in use.

Our technical analysis shows that there would be a reduction of an average of **71% reduction** in energy consumption through lights specifically as a part of the electro - mechanical system if all **Non-LED lights on all floors and blocks** are replaced with an energy efficient appliance whenever the College undergoes renovation.

Section 2 – Fans

Ceiling fans

The current Fans are in proper working conditions and maintained well. The ceiling fans are in more quantity and consume at least 60W when in use. These should be replaced with energy efficient fans consuming 32W when in use. Our detailed study states that is all the **ceiling fans in all Buildings** if replaced with star rated appliance results in a reduction of average of **47% reduction** in energy consumption if replaced with energy efficient appliance. It will be suggested to either replace these now if College can have certain plans else the replacement can be done when fans get damaged or are not in working condition.

Section 3 – Equipment

Desktop computers to laptops

Among all equipment it suggested to replace the desktop computers with laptops as this would be energy efficient. A normal desktop computer consumes on an average 250W and it is to be connected all time when it has to be used. On the contrary a laptop consumes 40W and has a battery backup which lasts up to 4 hours.

There is **an average 84% reduction** in energy consumption if replaced with energy efficient appliance which is a laptop in all the areas of Educational and Residential areas.

This replacement is however is dependent on a variety of factors as follows.

- Some of the senior staff members may be more convenient with computers, replacement with laptop might result in a change of the working patterns and hours which may affect the productivity.
- Laptops – in case are not handled with care such as if dropped unintentionally might result in data imbalance.
- Students who are not day scholars can use laptop as per their own convenience, whereas in common areas there can a monitoring about the usage hours hence computers may be a preferable option then laptop in certain spaces.
- Similarly depending on the pandemic situation in case it might be possible due to irregular usage the device might have issues while functioning.

Thus the University should analyse the above points and then devise a strategy about the replacement, essentially when the devices get damaged or are not in working condition they can surely be replaced.

As well as once they are not in working condition the proposed strategy should be linked towards e-waste management as well.

5. Towards a Healthy & Sustainable Institution

5.1 Inputs by Greenvio Solutions

Based on the analysis of the study of premises in addition to the recommendations provided in each section of Ecological, Water, Waste and Energy Audit the College can adopt the following strategies towards a Healthy and Sustainable Institution practices.

a) **Cutlery in the Canteen –** The regular plastic and steel plates, spoons used in Canteen can be replaced with eco-friendly and organic leaves, paper straw, disposable plates, edible spoons and tables made out of sugarcane waste or bamboo. This will be first of its kind initiative to be adopted and practiced thus also inculcating the healthy practices in students.

b) **Additional fire safety -** Measures such as Hose reel, signages, fire-fighting tank, fire alarm and sprinkler system should be adopted.

c) **Signages –** In addition to the signages being in regular language there can be additional signages in braille language for the specially abled students.

5.2 Survey Results

An online survey was conducted to analyse the student and staff views about what changes according to you can be undertaken for Green audit improvement in College premise and activity. **Some of the suggestions are listed below:**

- *According to me college is doing a great job to make environment green.*
- Act, dramas have to take in order to enhance Awareness among people boost their enthusiasm for plantation to create wonderful atmosphere.
- Take webinars.
- Projects for planting trees can be taken by teaching staff as well as students & awareness programs can be arranged.

However, it should be noted that the College has taken up multiple initiatives and because of Pandemic the students have not practically visited the campus so many of these points are not mandatory at the moment.

6. References

1. Uniform Plumbing Code – India, 2008
2. IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
3. IGBC Green Landscape Rating system, March 2013
4. BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST - Canada
5. Used only for understanding Universal design - Universal accessibility Guidelines for Pedestrian, Non-motorizes vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National centre for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation.

पूज्य साने गुरूजी विद्या प्रसारक मंडळाचे
औषधनिर्माणशास्त्र महाविद्यालय
पो. बॉक्स नं. ४१
शहादा, जि. नंदुरबार, (महाराष्ट्र) ४२५४०९

॥ उत्तिष्ठत जाग्रत प्राप्यवरान्निबोधत ॥

Poojya Sane Guruji Vidya Prasarak Mandal's
COLLEGE OF PHARMACY
P. O. Box. No.41
Shahada, Dist.: Nandurbar, (M.S.) 425 409

Approved by AICTE & PCI New Delhi • Permitted by Govt. of Maharashtra • Affiliated to KBC, NMU Jalgon
• Fax. No. 229740 Tel. No. 02565-229168 • E-mail: copshd@gmail.com • Website : psgvppharmacy.ac.in

Bapusaheb Dipak Patil (B.Com.) President
Smt. Kamaltai P. Patil Hon. Secretary
Dr. Sunil P. Pawar (M.Pharm., Ph. D.) Principal

Sensor based energy conservation alarm (onwater tank filling) Bill:

॥ गण गणांत बोते ॥ प्रोप्रा. साळी बंधू
तृप्ती ईलेक्ट्रीकल्स अ‍ॅण्ड स्पेअर हॉऊस
अबाजी माता मंदिरा जवळ, खेतिया रोड, **शहादा** जि. नंदुरबार
Mob. 9423027667, 9860541336, 9890940693

आमच्याकडे सर्व प्रकारचे ईलेट्रीकल साहित्य तेसच ब्रांडेड कंपनीचे फिटींग मटेरियल होलसेल भावत मिळेल.

No:- 271 इस्टीमेट बिल दि. 15/5/2022

नांव दि फार्मसी कॉलेज, शहादा

तपशील	नग	दर रुपये	एकूण
Water Bell	1	190	190
वायर 1 mm	25	10.50	256
		एकूण:-	446/-

फॅन/कुलर/मोटर/पम्पची वॉरंटी ३१ डिसेंबर २०२ पर्यंत राहील.
फॅन वॉरंटी १ वर्ष / २ वर्ष राहील.

प्रोप्रायटर सही

P.S.G.V.P.M's SHAHADA Dist. NDB. COLLEGE OF PHARMACY

PRINCIPAL
P.S.G.V.P.Mandal's, College of Pharmacy
SHAHADA-425409, Dist. NANDURBAR

पूज्य साने गुरूजी विद्या प्रसारक मंडळाचे
औषधनिर्माणशास्त्र महाविद्यालय
पो. बॉक्स नं. ४१
शहादा, जि. नंदुरबार, (महाराष्ट्र) ४२५४०९

॥ उत्तिष्ठत जाग्रत प्राप्यवरान्निबोधत ॥

Poojya Sane Guruji Vidya Prasarak Mandal's
COLLEGE OF PHARMACY
P. O. Box. No.41
Shahada, Dist.: Nandurbar, (M.S.) 425 409

Approved by AICTE & PCI New Delhi ● Permitted by Govt. of Maharashtra ● Affiliated to KBC, NMU Jalgon

● Fax. No. 229740 Tel. No. 02565-229168 ● E-mail: copshd@gmail.com ● Website : psgvppharmacy.ac.in

Bapusaheb Dipak Patil (B.Com.) President | **Smt. Kamaltai P. Patil** Hon. Secretary | **Dr. Sunil P. Pawar** (M.Pharm., Ph. D.) Principal

LED Light Bill:

॥ गण गणांत बोते ॥ प्रोप्रा. साळी बंधू

तृप्ती ईलेक्ट्रीकल्स् अ‍ॅण्ड स्पेअर हॉऊस

अंबाजी माता मंदिरा जवळ, खेतिया रोड, शहादा जि. नंदुरबार

Mob. 9423027667, 9860541336, 9890940693

आमच्याकडे सर्व प्रकारचे ईलेट्रीकल साहित्य तसेच ब्रॅंडेड कंपनीचे फिटींग मटेरियल होलसेल भावत मिळेल.

No:- 548 इस्टीमेट बिल दि. 12 / 1 / 2022

नांव मे. फार्मसी कॉलेज, शहादा

तपशील	नग	दर रुपये	एकूण
1) Chouk 36watt	1		220/-
2) 20watt Tube	2		400/-
			620/-
		एकूण:-	

फॅन/कुलर/मोटर/पम्पची वॉरंटी ३१ डिसेंबर २०२ पर्यंत राहील.
फॅन वॉरंटी १ वर्ष / २ वर्ष राहील.

प्रोप्रायटर सही

PRINCIPAL
P.S.G.V.P. Mandal's College of Pharmacy
SHAHADA-425409 Dist. Nandurbar

P.S.G.V.P.M's SHAHADA Dist.NDB. COLLEGE OF PHARMACY

PRINCIPAL
P.S.G.V.P.Mandal's, College of Pharmacy
SHAHADA-425409,Dist.NANDURBAR

Maharashtra State Electricity Distribution Co. Ltd.

MAHAVITARAN

BILL OF SUPPLY FOR THE MONTH OF JUL-2021

202107258146665

GSTIN:27AAECM2933K1ZB | Website:www.mahadiscom.in | HSN CODE:27160000

NANDURBAR CIRCLE - 561 SHAHADA DIVN - 584 SHAHADA I SUB-DIVISI - 223 1

Consumer No. : 089279002076 M/S PRINCI

Consumer Name : M/S PRINCIPAL P S G V P MANDALS

Address : COLLEGE OF ENGINEERING
SHAHADA DIST NANDURBAR

Village: SHAHADA Pin Code : 425409

BILL DATE	06/08/2021	1,15,670.00
DUE DATE	20/08/2021	
IF PAID UPTO	12/08/2021	1,14,530.00
IF PAID AFTER	20/08/2021	1,17,110.00

Last Receipt No./Date : 0000075638 / 23-07-2021

Last Month Payment : 1,09,940.00

Scale / Sector : Small Scale /

Email : ***ncipal@coeshahada.ac.in

Mobile No. : 98******51	Meter No : 055-X1093913	Seasonal :	Load Shed Ind : INDUST
Sanctioned Load (KW): 179	Connected Load (KW) : 179.00	Urban/Rural Flag : R	Express Feeder Flag : No
Contract Demand (KVA) :100.00	60% of Con. Demand (KVA) : 60.00	Feeder Voltage (KV) : 11	LIS Indicator :
Tariff : 146 HT-VIII B	old trf HT-VIII B		

Date of Connection : 12/03/1987	Category : PUBL SERVICES OTH	GSTIN :	
Supply at : HT	Elec. Duty : 99 PART H	PAN : AABTP0839M	
Prev. Highest (Mth) : SEP	Prev. Highest Bill Demand (KVA) : 45		
S.D. Held Rs. : 2,28,600.00	Addl. S.D. Demanded Rs. : 0.00		
Bank Guarantee Rs. : 0	S.D. Arrears Rs. : 0.00		

BILLING HISTORY

Bill Month	Units	Bill Demand(KVA)	Bill Amount
JUN-21	8,284	60	1,08,587
MAY-21	6,670	60	91,791
APR-21	7,221	60	97,546
MAR-21	10,165	55	1,26,934
FEB-21	9,017	55	1,15,289
JAN-21	8,226	55	1,06,942
DEC-20	7,278	55	96,665
NOV-20	7,172	55	95,320
OCT-20	9,403	55	1,18,327
SEP-20	9,148	59	1,17,266
AUG-20	8,315	64	1,11,073
JUL-20	6,991	64	97,230

CUSTOMER CARE Toll Free No.

1912, 1800-233-3435, 1800-102-3435

IGRC: msedcl cirlce office ,Indira Gandi commercial complex,Giri vihar sco. Nandurbar, Phone - 02564-232300

In case of non-redressal of grievance here, consumer may make his representation to below forum

CGRF: Vidyut bhavan,m.i.d.c. Ajintha chauk Jalgaon, Phone - 0257-2272990

For making Energy Bill payment through RTGS/NEFT mode, use following details

- o Beneficiary Name: MSEDCL
- o Beneficiary Account Number: **MSEDHT01089279002076**
- o IFS Code: **SBIN0008965 (fifth,sixth and seventh character is zero)**
- o Name of Bank: SBI Bank
- o Name of Branch: IFB, BKC Branch-MSEDCL

Disclaimer: Please use above bank details only for payment against consumer number mentioned in beneficiary account number.

- **Tariff Revised w.e.f. 01.04.2021. Tariff Order is available at Mahavitaran Portal.**
- **Physical Bills are not served. You can view and pay bill online at portal https://wss.mahadiscom.in/wss/wss**
- **Consumer can pay bill through portal using various online modes.**
- **As per Income Tax provision vide section 269 ST cash receipt of Rs. 2.00 lakhs and above will not be accepted by MSEDCL against any type of payment.**
- **As per GoM Notification dtd. 14.08.2020, rate of Electricity Duty for Part-F Industrial is revised from 9.3% to 7.5% from billing month Aug-20**
- **Activity: EDUCATIONAL INSTITUTIONS SCHOOLS AND COLLEGES OTHER THAN THE STATE OR CENTRAL GOVERNMENT OR LOCAL SELF GOV.BODIES**

Important Message :

- Consumers can pay online using Net Banking, Credit/Debit cards at https://wss.mahadiscom.in/wss/wss after registration.
- Submit / update your E-mail id and mobile number to Circle office for receiving prompt alerts through SMS.
- Submit / update your PAN and GSTIN to circle office with copies of PAN and GSTIN for verification.
- Special desk is operational for HT Consumers, please contact : htconsumer@mahadiscom.in for any clarification / query or grievance.
- This Electricity Bill should not be used for the address proof and as a proof of property ownership.
- For any payment to MSEDCL , ENSURE & INSIST for computerized receipt with unique system generated receipt number. Do not accept hand written receipt. Pay online to avoid any inconvenience.

PRINCIPAL
S.G.V.P.Mandal's, College of Pharmacy
SHAHADA-425409, Dist.NANDURBAR

Consumer No. : 089279002076

CURRENT CONSUMPTION DETAILS

Reading Date	KWH	KVAH	RKVAH (LAG)	RKVAH (LEAD)	KW (MD)	KVA (MD)
Current 31/07/2021	195110.500	211961.000	76567.000	2.000	37.240	
Previous 30/06/2021	188143.500	204770.500	74944.000	1.500		
Difference	6967.000	7190.500	1623.000	0.500		
Multiplying Factor	1.000	1.000	1.000	1.000	1.000	1.000
Consumption	6967.000	7190.500	1623.000	0.500	37.240	
L.T. Metering	0.000	0.000	0.000	0.000	0.000	0.000
Adjustment	1789.000	1852.250	440.000	0.000	0.000	0.000
Assessed Consumption	0.000	0.000	0.000	0.000	0.000	37.560
Total Consumption	8756.000	9043.000	2063.000	1.000	37.000	

BILLING DETAILS

Amount in Rs.

Billed Demand (KVA)	60	@ Rs.	432.00
Assessed P.F.		Avg. P.F.	0.968
Billed P.F.	0.968	L.F.	12

Consumption Type	Units	Rate	Charges Rs.
Industrial	9,043	9.21	83,286.03
Residential	0	5.70	0.00
Commercial	0	11.20	0.00

E.D. on (Rs.)	Rate %	Amount Rs.
1,14,510.51	0.00	0.00
0.00	16.00	0.00
0.00	21.00	0.00

TOD Zone	Rate	Units	Demand	Charges Rs.
00:00 Hrs-06:00 Hrs & 22:00 Hrs-24:00 Hrs	-1.50	2,119	0.00	-3178.50
06:00Hrs-09:00Hrs & 12:00Hrs-18:00Hrs	0.00	3,254	38.00	0.00
09:00 Hrs-12:00 Hrs	0.80	2,064	37.00	1651.20
18:00 Hrs-22:00 Hrs	1.10	1,607	26.00	1767.70

Amount In Words: **ONE LAKH FIFTEEN THOUSAND SIX HUNDRED SEVENTY ONLY**

		Amount in Rs.
Demand Charges		25,920.00
Wheeling Charge @	0.56 Rs/U	5,064.06
Energy Charges		83,286.03
TOD Tariff EC		240.40
FAC @ 0.00	Ps./U	0.00
Electricity Duty		0.00
Bulk Consumption Rebate		0.00
Tax on Sale @ 18.00	Ps./U	1,575.72
Incremental Consumption Rebate	$$	- 421.50
Charges For Excess Demand		0.00
Tax Collection at Source		0.00
Debit Bill Adjustment		0.00
TOTAL CURRENT BILL		1,15,664.73
Current Interest 04/08/2021		0.00
Principal Arrears		1.74
Interest Arrears		0.00
Total Bill Amount (Rounded) Rs.		**1,15,670.00**
Delay Payment Charges Rs.		1,445.81
Amount Payable After 20/08/2021 (Amount Rounded to Nearest Rs. 10/-)		**1,17,110**

$$ Incremental Consumption Rebate if paid on or before 12-AUG-21 : Rs. 421.50 / after 12-AUG-21 Rs. 421.50 on units 562. Ref consumption : 8212

**** PROMPT DISCOUNT Rs. 1141 IF PAID ON OR BEFORE 12-AUG-21.

CONDITIONS

1. The total bill amount of the bill may be remitted by a Crossed Demand Draft/Cheque drawn in favor of "Maharashtra State Electricity Distribution Co. Ltd." Whenever Security Deposit is demanded separate Cheque/Bank Draft should be sent.
2. The current bill is payable within fifteen days from the date of issue of the bill. Even if there is any discrepency in the bill or any other clarification needed, consumers are requested to pay the billed amount in full provisionally or under protest subject to review and subsequent adjustment, so that payment of delayed payment charges is avoided.
3. This bill is issued subject to the provision of the "Conditions and Miscellaneous charges for supply of Electric Energy" of the MSEDCL.
4. Please quote the Consumer Number on the back of the Cheque. The payment of this bill should be made at Company's office only.
5. If the cheque is sent by post, the same should be posted three clear days in advance of the due date.
6. In case of payment made through RTGS/NEFT/Cheque/DD/Pay Order, the date of amount credited to MSEDCL's account will be treated as receipt date.

Collection Hours : 10-30 to 16-00 Hours (Except on Bank Holidays, Sundays, 2nd and 4th Saturdays)

S.G.V. Mandal's, College of Pharmacy
SHAHADA-425409, Dist. NANDURBAR