



LOKNETE DR.BALASAHEB VIKHE PATIL. (PADMA BHUSHAN AWARDEE)
PRAVARA RURAL EDUCATION SOCIETY'S

Establishment 4 August 2004

ARTS, COMMERCE & SCIENCE COLLEGE, ALKUTI

ID.No. PU/AN/ACS/78/2004

College code No.757

A/p.Alkuti, Tal.Parner, Dist.Ahmednagar. Pin-414305

NAAC Accredited 'B++' Grade College (CGPA- 2.78)



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Email ID : Principal.acsalkuti@pravara.in

AQAR:-2023-2024



Criteria - 7

Institutional values and Best Practices

KEY INDICATOR : 7.1

Institutional Values and Social Responsibilities

Metric: - 7.1.6.1- The institutional environment and energy initiatives are confirmed through the following

1. Green audit
2. Energy Audit.
3. Environment audit
4. Clean and green campus recognitions/awards
5. Beyond the campus environmental promotional activities.

5. Beyond the Campus Environmental Promotional Activities



COLLAGE CLEANING ACTIVITY AT ALKUTI TAL- PARNER



Tree plantation at ACS Collage Alkuti Tal- Parner



Save the Tree at Mhaskewadi Tal- Parner



Reebz
Principal
 Art's, Commerce & Science College
 Alkuti, Tal. Parner, Dist. A'nagar



PowerTech Energy Solutions
Conserve to Consume

Energy & Green Audit Report of Arts, Commerce and Science College, Alkuti For the Year of 2023-24.



Submitted By
PowerTech Energy Solutions

Our Certificates

BEE Certified Energy Auditor Certificate

BEE Certified Energy Auditor Certificate	
	
Regn. No. EA-20121	Certificate No. 8299
National Productivity Council (National Certifying Agency)	
<u>PROVISIONAL CERTIFICATE</u>	
This is to certify that Mr. / Mrs. / Ms. <i>Swapnil Sanjay Gaikwad</i>	
son / daughter of Mr. <i>Sanjay J. Gaikwad</i>	
has passed the National Certification Examination for Energy Auditors held in August - 2014, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India.	
He / She is qualified as Certified Energy Manager as well as Certified Energy Auditor.	
He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.	
This certificate is valid till the issuance of an official certificate by the Bureau of Energy Efficiency.	
Place : Chennai, India	
Date : 9 th January, 2015	Controller of Examination

Lead Auditor Certificate – ISO 50001: Energy Management System



**PR366: ISO 50001:2018 Lead Auditor
(Energy Management System)
Training Course**

Certificate of Achievement

Atul Kakad

has successfully completed the above mentioned course and examination.

26th - 30th November 2019

PUNE, INDIA

Certificate No. 35258395 07

Delegate No. 222777

A handwritten signature in black ink, appearing to be "J. H.", written over the text "for TÜV NORD CERT GmbH".

for TÜV NORD CERT GmbH

Essen, 2020-01-08

The course is certified by CQI and IRCA (Certification No. 2088). The learner meets the training requirements for those seeking certification under the IRCA EnMS Auditor certification scheme.

TÜV NORD CERT GmbH

Langemarckstraße 20

45141 Essen

www.tuev-nord-cert.com



MEDA Registration Certificate

MAHARASHTRA ENERGY DEVELOPMENT AGENCY



Maharashtra Energy Development Agency

(A Government of Maharashtra undertaking)

Aundh Road, Opposite Spicer College,

Near Commissionerate of Animal Husbandry, Aundh, Pune – 411 067

Ph No: 020-26614393/266144403

Email: eee@mahaurja.com, Web: www.mahaurja.com

ECN/2022-23/CR-44/3803

4th October, 2022

**CERTIFICATE OF REGISTRATION
FOR CLASS 'A'**

We hereby certify that, the firm having following particulars is registered with **MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : M/s PowerTech Energy Solutions
Office No. 10, B-wing, 3rd floor,
Phuge Prima, Bhosari Dighi Road Bhosari,
Pimpri Chinchwad- 411 039.

Registration Category : *Empanelled Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2022-23/Class - A/EA-31*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **3rd October, 2024** from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

1 Executive Summary – Energy Audit

ECM	Area	Observations	Proposed Action	Estimated Annual Energy Saving	Estimated Annual CO2 Emission Reduction	Estimated Annual Monetary Savings	Estimated Investment	Payback Period
				kWh	Tones	Rs. Lakh	Rs. Lakh	Months
ECM-1	Ceiling Fan	At present, conventional ceiling fan of 80 W installed in Principal Cabin, Physical Chemistry, Office, and Seminar Hall.	New energy efficient fans are available in the market which deliver same air volume at less power consumption It is recommended to replace existing 80W ceiling fans with new energy efficient 28W BLDC fan	3175	2.3	0.41	1.86	54
SUM				3175	2	0.41	1.86	0
Annual Energy Consumption of the College (kWh)				11168				
% Saving on Energy Usage				28%				
Annual Energy Bill of the College (Rs. In Lakhs)				1				
% Savings on Energy Bill				28%				

2 Executive Summary – Green Audit

Sr.No	Area	Observations	Remark
1	Tree Plantation and Awareness about Energy Conservation	College has carried out tree plantation activity. Several types of trees have been planted by students and staffs	Good initiative taken by college toward green campus
2	Rain Water Harvesting	The college has implemented a rainwater harvesting system, collecting rainwater for use within the campus and distribution to nearby communities, promoting sustainability and reducing water waste.	The college's rainwater harvesting initiative is a commendable commitment to environmental sustainability, conserving water resources, and supporting a healthier environment.
3	Plastic awareness	The college is encouraging everyone to say no to plastic in an effort to create a more sustainable campus.	This initiative aims to reduce plastic waste and foster eco-friendly habits, contributing to a greener environment for all.
4	Solid Waste Management	College has vermicomposting plant where solid waste has been used as a raw material.	Good initiative taken by college towards solid waste management
5	Used LED Lightings	The utilization of LED lighting across the college premises signifies a commitment to energy efficiency and sustainability.	Using LED lighting in college premises is a good practice.

3 Scope of Improvement

- ❖ **E-Waste Management:** This initiative focuses on the proper disposal and recycling of electronic waste (e-waste) through authorized collectors. It helps reduce harmful environmental impacts caused by improper disposal, promoting sustainability.
- ❖ **Energy Efficiency:** Installing solar panels on rooftops allows the campus to generate renewable energy, decreasing reliance on traditional energy sources. This initiative helps lower the carbon footprint and supports environmental sustainability.
- ❖ **Digitalization of Administrative Processes:** By moving administrative functions like applications, registrations, and record-keeping to digital platforms, the college reduces paper usage. This shift not only cuts down on waste but also improves efficiency and organization.

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4 Acknowledgement

PowerTech Energy Solutions extends gratitude **Loknete Dr. Balasaheb Vikhe Patil (Padma Bhushan Awardee) Pravara Rural Education Society's Arts, Commerce & Science College, Alkuti** for extending us the opportunity to conduct the Energy & Green Audit.

We are thankful to the professors & supporting staff of the college for their transparency & consistent support in sharing relevant information and for providing data about policies and projects along with their other valuable information. This report would have not been possible without their support.

The study team would like to acknowledge the following distinguished Loknete Dr. Balasaheb Vikhe Patil (Padma Bhushan Awardee) Pravara Rural Education Society's Arts, Commerce & Science College, Alkuti, in person for the diligent involvement and cooperation.

Dr. Sharad Parkhe

Principal

Prof. Sanjay Jadhav

IQAC Chairman

5 About College

Arts, Commerce and Science College in Alkuti, Parner began operating in 2004 with 7 teachers and 160 students in the F.Y. BA & B.Com department. With time, we have amplified into an institute of 11 departments and 24 teachers handling the educational responsibility of B.A. B.Com. B.Sc. M.Com and M.Sc. of 850 students in 2022-23.

Spread over 13.2 acres that includes 5 acres sports ground, the college focuses on sports and co-curricular activities in equal measure for overall development of students.

With one well-furnished central library and 5 well equipped laboratories, our students have all the facilities to quench their thirst for knowledge and execute their creativity.

5.1 Vision

To enable prosperity by providing quality education in emerging fields to produce knowledgeable and cultured human resource for the upliftment of the rural masses who contribute to the process of national development.

5.2 Mission

To empower the socially, economically and educationally marginalized sections of the society through quality education and transform them into excellent human beings who are aware that being sensitive, modest and humane is the hall mark of being educated, self-disciplined and civilized.

5.3 Goal

- ❖ To achieve academic excellence in higher education.
- ❖ To bring higher educational opportunities within the reach of the under privileged section of society.
- ❖ To inculcate value based education to empower the youth for nation development.
- ❖ To achieve horizontal development through Skill Development Courses.
- ❖ To develop an overall personality of the students by providing ample opportunities in co-curricular and extracurricular activities.
- ❖ To develop linkages between educational institution and society for mutual benefits through socio-economic and cultural transformation.

6 Energy Audit

An energy audit is an inspection, survey and analysis of energy flows, for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the output(s). In commercial and industrial real estate, an energy audit is the first step in identifying opportunities to reduce energy expense and carbon footprints.

6.1 Electricity Bill Analysis

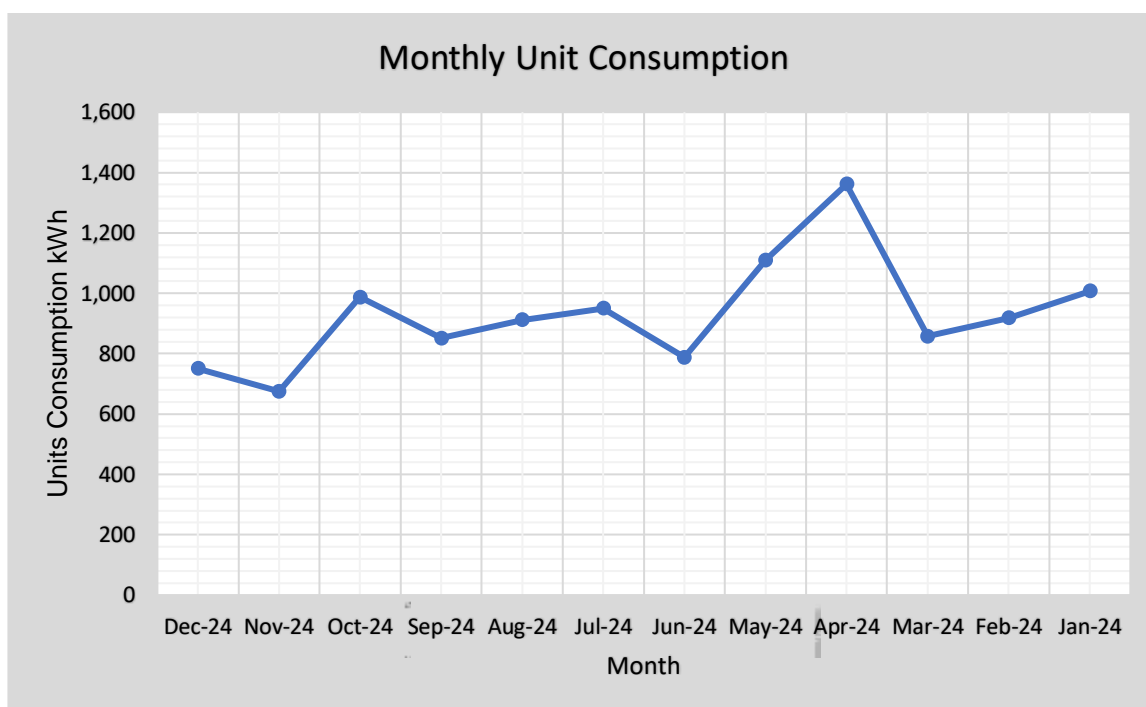
There is one numbers of electricity connection being power supplied by MSEDCL. Monthly electricity bill is served by MSEDCL against electricity used & is paid by college. A cost of power is worked out by summing up total kWh of all connections & their amount over the year 2023-2024. By dividing total amount by total kWh works out average cost of power per kWh.

Consumer Name	PRINCIPAL ART COMMERCE SCIENCE COLLAGE ALKUTI.
Consumer Number	150920008455
Connected Load (KW)	5
Contract Demand (KVA)	6
Tariff	52 LT-II A

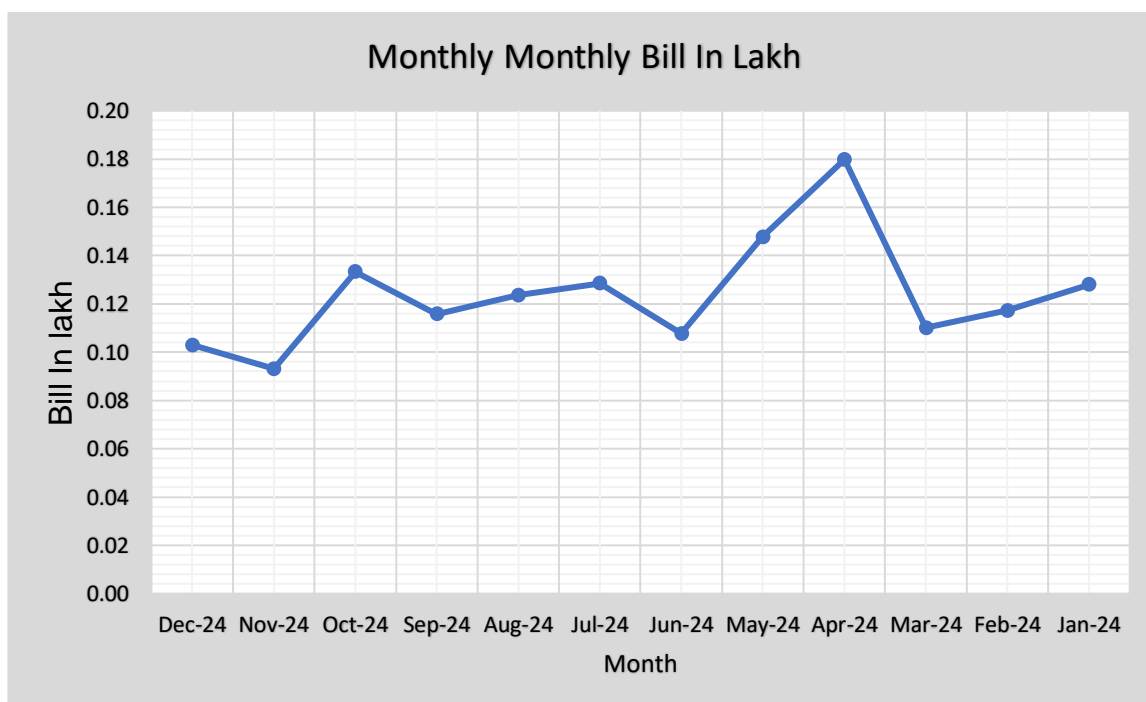
Below table shows the monthly energy consumption.

Month	Unit Consumption	Total Current Bill	Avg. Unit Rate
	kWh	Rs.	Rs/kWh
Dec-24	751	0.10	14
Nov-24	675	0.09	14
Oct-24	987	0.13	14
Sep-24	851	0.12	14
Aug-24	912	0.12	14
Jul-24	950	0.13	14
Jun-24	788	0.11	14
May-24	1110	0.15	13
Apr-24	1361	0.18	13
Mar-24	858	0.11	13
Feb-24	918	0.12	13
Jan-24	1007	0.13	13
Min	675	0.09	13
Avg	931	0.12	13
Max	1361	0.18	14
Total	11,168	1.5	

Below graph shows the monthly energy consumption.



Below graph shows the monthly bill in Rs. Lakh



6.2 Observation and Remark

Sr.No.	Parameter	Observation	Remark
1	Connected Load	Contract demand of the plant is 6 kW	No action required
2	Unit consumption	Minimum unit consumption recorded is 675 kWh In month of Nov-24	No action required
		Avg. unit consumption recorded is 931 kWh	No action required
		Maximum unit consumption recorded is 1361 In month of Apr-24	No action required

6.3 Connected Load

Name of the Space	Type of Load	Total Qty.	Used Qty.	Wattage	Load in Kw
Principal Cabin	LED Light	3	3	18	0.05
History	LED Light	3	3	18	0.05
Office	LED Light	5	5	18	0.09
Exam	LED Light	1	1	18	0.02
F.Y.B.A.	LED Light	4	4	18	0.07
F.Y.Bcom	LED Light	6	6	18	0.11
S.Y.Bcom	LED Light	3	3	18	0.05
Store	LED Light	2	2	18	0.04
Boys Toilet	LED Light	3	3	18	0.05
Botany	LED Light	5	5	18	0.09
Physics	LED Light	5	5	18	0.09
Zoology	LED Light	3	3	18	0.05
Chemistry	LED Light	6	6	18	0.11
Physical Chemistry	LED Light	1	1	18	0.02
T.Y.B.A.	LED Light	5	5	18	0.09
Library	LED Light	4	4	18	0.07
N.S.S.	LED Light	3	3	18	0.05
Staff Room	LED Light	3	3	18	0.05
English	LED Light	1	1	18	0.02
Ladies Toilet	LED Light	4	4	18	0.07
Sport	LED Light	2	2	18	0.04
T.Y.Bcom	LED Light	4	4	18	0.07
S.Y.B.A	LED Light	4	4	18	0.07
T.Y.B.A.	LED Light	4	4	18	0.07
Seminar Hall	LED Light	11	11	18	0.20
Geography	LED Light	1	1	18	0.02
Commerce	LED Light	1	1	18	0.02
Jenna	LED Light	5	5	18	0.09
1St Flower Ladies Toilet	LED Light	2	2	18	0.04
Gents Toilet	LED Light	1	1	18	0.02
Porch	LED Light	13	13	18	0.23
Front Porch	LED Light	6	6	18	0.11
Left Side	LED Light	1	1	14	0.01
Right Side	LED Light	1	1	18	0.02
Principal Cabin	Ceiling fan	2	2	80	0.16
History	Ceiling fan	1	1	80	0.08
Office	Ceiling fan	3	3	80	0.24
Exam	Ceiling fan	1	1	80	0.08
F.Y.B.A.	Ceiling fan	3	3	80	0.24
F.Y.Bcom	Ceiling fan	3	3	80	0.24
S.Y.Bcom	Ceiling fan	3	3	80	0.24
Botany	Ceiling fan	3	3	80	0.24
Physics	Ceiling fan	2	2	80	0.16
Zoology	Ceiling fan	3	3	80	0.24
Chemistry	Ceiling fan	3	3	80	0.24
Physical Chemistry	Ceiling fan	1	1	80	0.08
T.Y.B.A.	Ceiling fan	2	2	80	0.16
Library	Ceiling fan	4	4	80	0.32

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Name of the Space	Type of Load	Total Qty.	Used Qty.	Wattage	Load in Kw
N.S.S.	Ceiling fan	1	1	80	0.08
Staff Room	Ceiling fan	1	1	80	0.08
English	Ceiling fan	1	1	80	0.08
Ladies Toilet	Ceiling fan	1	1	80	0.08
Sport	Ceiling fan	1	1	80	0.08
T.Y.Bcom	Ceiling fan	2	2	80	0.16
S.Y.B.A	Ceiling fan	2	2	80	0.16
T.Y.B.A.	Ceiling fan	2	2	80	0.16
Seminar Hall	Ceiling fan	6	6	80	0.48
Geography	Ceiling fan	1	1	80	0.08
Commerce	Ceiling fan	1	1	80	0.08
Total		179		2608	7

6.4 Performance Assessment of Lighting System

Lighting system analysis is taking the data from college building areas. Most of the system is in energy efficient LED system. There are total 126 lights installed in the college building at different location and for different purposes. Out of 126 lights, 126 lights are of LED type.

Location	Light/Lumin	Qty.	Wattage	Lighting Load Kw	Hours of usage	No of Days in a month	Hrs./M	Daily consumption(kWh)	Monthly consumption(kWh)
Principal Cabin	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
History	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
Office	LED Light-1X18W	5	18	0.09	8.00	24.0	192	0.7	17
Exam	LED Light-1X18W	1	18	0.02	8.00	24.0	192	0.1	3
F.Y.B.A.	LED Light-1X18W	4	18	0.07	8.00	24.0	192	0.6	14
F.Y.Bcom	LED Light-1X18W	6	18	0.11	8.00	24.0	192	0.9	21
S.Y.Bcom	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
Store	LED Light-1X18W	2	18	0.04	8.00	24.0	192	0.3	7
Boys Toilet	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
Botany	LED Light-1X18W	5	18	0.09	8.00	24.0	192	0.7	17
Physics	LED Light-1X18W	5	18	0.09	8.00	24.0	192	0.7	17
Zoology	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
Chemistry	LED Light-1X18W	6	18	0.11	8.00	24.0	192	0.9	21
Physical Chemistry	LED Light-1X18W	1	18	0.02	8.00	24.0	192	0.1	3
T.Y.B.A.	LED Light-1X18W	5	18	0.09	8.00	24.0	192	0.7	17
Library	LED Light-1X18W	4	18	0.07	8.00	24.0	192	0.6	14
N.S.S.	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
Staff Room	LED Light-1X18W	3	18	0.05	8.00	24.0	192	0.4	10
English	LED Light-1X18W	1	18	0.02	8.00	24.0	192	0.1	3
Ladies Toilet	LED Light-1X18W	4	18	0.07	8.00	24.0	192	0.6	14
Sport	LED Light-1X18W	2	18	0.04	8.00	24.0	192	0.3	7
T.Y.Bcom	LED Light-1X18W	4	18	0.07	8.00	24.0	192	0.6	14

Energy & Green Audit Report- Arts, Commerce and Science College, Alkuti

Location	Light/Lumin	Qty.	Wattage	Lighting Load Kw	Hours of usage	No of Days in a month	Hrs./M	Daily consumption(kWh)	Monthly consumption(kWh)
S.Y.B.A	LED Light-1X18W	4	18	0.07	8.00	24.0	192	0.6	14
T.Y.B.A.	LED Light-1X18W	4	18	0.07	8.00	24.0	192	0.6	14
Seminar Hall	LED Light-1X18W	11	18	0.20	8.00	24.0	192	1.6	38
Geography	LED Light-1X18W	1	18	0.02	8.00	24.0	192	0.1	3
Commerce	LED Light-1X18W	1	18	0.02	8.00	24.0	192	0.1	3
Jenna	LED Light-1X18W	5	18	0.09	8.00	24.0	192	0.7	17
1St Flower Fem Toilet	LED Light-1X18W	2	18	0.04	8.00	24.0	192	0.3	7
Gents Toilet	LED Light-1X18W	1	18	0.02	8.00	24.0	192	0.1	3
Porch	LED Light-1X18W	13	18	0.23	12.00	24.0	288	2.8	67
Front Porch	LED Light-1X18W	6	18	0.11	12.00	24.0	288	1.3	31
Left Side	LED Light-1X14W	1	14	0.01	12.00	24.0	288	0.2	4
Right Side	LED Light-1X18W	1	18	0.02	12.00	24.0	288	0.2	5
Total		126		2				20	471

6.5 Observation& Remark

Sr. No.	Area	Observation	Remark
1	Lightings	LED lights are used throughout the college. There are total 126 no. of LED lights installed Total light load is 2 kW	The use of LED lights is a simple yet effective measure for energy conservation. LED lights are energy-efficient, have a longer lifespan, emit minimal heat, and offer instant illumination.

6.6 Performance Assessment of ceiling fans

It has been observed that conventional ceilings fans are used at different areas in college. It is recommended to replace existing 80W ceiling fans with 28W energy efficient fans. Below table shows the estimated energy and monetary saving along with payback period.

Location	Fan	Qty.	Load in Kw	Hrs./ Month	Monthly Consumption (kWh)	New Wattage	New kW	New Monthly kWh	Energy Saving in kWh	Monetary saving in Rs	Investment	Payback period in months
Principal Cabin	Ceiling fan-80w	2	0.16	96	15.4	28	0.06	5	10.0	130	7000	54
History	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
Office	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
Exam	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
F.Y.B.A.	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
F.Y.Bcom	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
S.Y.Bcom	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
Botany	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
Physics	Ceiling fan-80w	2	0.16	96	15.4	28	0.06	5	10.0	130	7000	54
Zoology	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
Chemistry	Ceiling fan-80w	3	0.24	96	23.0	28	0.08	8	15.0	195	10500	54
Physical Chemistry	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
T.Y.B.A.	Ceiling fan-80w	2	0.16	96	15.4	28	0.06	5	10.0	130	7000	54
Library	Ceiling fan-80w	4	0.32	96	30.7	28	0.11	11	20.0	260	14000	54
N.S.S.	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
Staff Room	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
English	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
Ladies Toilet	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
Sport	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
T.Y.Bcom	Ceiling fan-80w	2	0.16	96	15.4	28	0.06	5	10.0	130	7000	54
S.Y.B.A	Ceiling fan-80w	2	0.16	96	15.4	28	0.06	5	10.0	130	7000	54
T.Y.B.A.	Ceiling fan-80w	2	0.16	96	15.4	28	0.06	5	10.0	130	7000	54
Seminar Hall	Ceiling fan-80w	6	0.48	96	46.1	28	0.17	16	30.0	389	21000	54
Geography	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
Commerce	Ceiling fan-80w	1	0.08	96	7.7	28	0.03	3	5.0	65	3500	54
Total		53	4		407	700	1	142	265	3,439	185,500	54

Fan Recommendation

Parameter	Unit	Value
Present fan type		Conventional ceiling fan
Present wattage of ceiling fans	watt	80
Total no.of fans installed	Nos.	97
Present load of ceiling fans	kW	4
Present monthly energy consumption of ceiling fans	kWh	407
Recommended fan type		Energy Efficient BLDC fan
New Estimated wattage of fan	watt	28
Estimated load of ceiling fan	kW	1
Power saving	kW	3
% Savings	%	65%
New Estimated monthly energy consumption	kWh	142
Estimated annual energy savings	kWh	3175
Estimated annual carbon emission reduction	Tons	2.3
Estimated annual monetary savings	Rs	41,274
Estimated investment for 1 fan	Rs	3500
Estimated total investment	Rs	185,500
Payback period	Months	54

6.7 Observation& Remark

Sr.No	Area	Observation	Remark
1	Ceiling Fans	<p>At present, conventional ceiling fan of 80 W installed in Principal Cabin, Physical Chemistry, Office, and Seminar Hall.</p> <p>There are a total of 53 ceiling fans installed, out of which 53 are conventional fans</p> <p>Total ceiling fan load is 4 kW</p>	<p>New energy efficient fans are available in the market which deliver same air volume at less power consumption</p> <p>It is recommended to replace existing 80W ceiling fans with new energy efficient 28W BLDC fan</p> <p>Estimated new load of fan is 1 kW</p> <p>Estimated annual energy saving is 3175 units</p> <p>Estimated annual carbon emission reduction is 2.3 Tones</p>

7 Requirements of NAAC

7.1 Alternative Energy Initiative

Percentage of power requirement met by renewable energy sources

= (Power requirement met by renewable energy sources / Total power requirement) X 100

= (0/11168) X 100

= **0% (Energy generated from Solar PV system)**

7.2 Percentage of lighting power requirement met through LED bulbs

= (Lighting power requirement met through LED bulbs / Total lighting power requirement) X 100

= (2/2)

= **100%**

8 Green Audit

Green audit was initiated with the beginning of 1970s with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. It exposes the authenticity of the proclamations made by multinational companies, armies and national governments with the concern of health issues as the consequences of environmental pollution.

It is the duty of organizations to carry out the Green Audits of their ongoing processes for various reasons such as; to make sure whether they are performing in accordance with relevant rules and regulations, to improve the procedures and ability of materials, to analyze the potential duties and to determine a way which can lower the cost and add to the revenue.

Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. Some of the incidents like Bhopal Gas Tragedy (Bhopal; 1984), Chernobyl Catastrophe (Ukraine; 1986) and Exxon-Valdez Oil Spill (Alaska; 1989) have cautioned the industries that setting corporate strategies for environmental security elements have no meaning until they are implemented.

Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade a, Grade B or Grade C according to the scores assigned at the time of accreditation.

The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmentally friendly institute.

8.1 Goals of Green Audit

- The objective of carrying out Green Audit is securing the environment and cut down the threats posed to human health.
- To make sure that rules and regulations are taken care of
- To avoid the interruptions in environment that are more difficult to handle and their correction requires high cost.
- To suggest the best protocols for adding to sustainable development

8.2 Benefits of Green Audit

- It would help to shield the environment
- Recognize the cost saving methods through waste minimizing and managing
- Point out the prevailing and forthcoming complications
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- It portrays a good image of a company which helps building better relationships with the group of stakeholders
- Enhance the alertness for environmental guidelines and duties

9 Initiatives by College towards Sustainable Environment

9.1 Tree Plantation

Tree-planting is the process of transplanting tree seedlings, generally for forestry, land reclamation, or landscaping purpose. It differs from the transplantation of larger trees in arboriculture, and from the lower cost but slower and less reliable distribution of tree seeds.

In silviculture⁴ the activity is known as reforestation, or afforestation, depending on whether the area being planted has or has not recently been forested. It involves planting seedlings over an area of land where the forest has been harvested or damaged by fire, disease or human activity. Tree planting is carried out in many different parts of the world, and strategies may differ widely across nations and regions and among individual reforestation companies. Tree planting is grounded in forest science, and if performed properly can result in the successful regeneration of a deforested area. Reforestation is the commercial logging industry's answer to the large-scale destruction of old growth forests, but a planted forest rarely replicates the biodiversity and complexity of a natural forest.

Because trees remove carbon dioxide from the air as they grow, tree planting can be used as agro engineering technique to remove CO₂ from the atmosphere. Desert greening projects are also motivated by improved biodiversity and reclamation of natural water systems, but also improved economy and social welfare due to increased number of jobs in farming and forestry.

College has planted the trees campus area to make it more environments friendly.

Below are some records, photos shows the activity done by college.



Green campus initiative campus initiative by institution



Institution reaffirms commitment to a healthier future.

9.2 Vermicomposting Plant

College has taken initiative to compost the daily solid waste by means of vermicompost plant. It generates the valuable compost which has been utilized in college campus garden area and some is distributed to nearer farmers

Vermicomposting (or vermi-compost) is the product of the composting process using various species of worms, usually red wigglers, white worms, and other earthworms, to create a mixture of decomposing vegetable or food waste, bedding materials, and vermicast.

Vermicast (also called worm castings, worm humus, worm manure, or worm feces) is the end-product of the breakdown of organic matter by earthworms. These castings have been shown to contain reduced levels of contaminants and a higher saturation of nutrients than the organic materials before vermicomposting.

Vermicomposting contains water-soluble nutrients and is an excellent, nutrient-rich organic fertilizer and soil conditioner. It is used in farming and small scale sustainable, organic farming.

Vermicomposting can also be applied for treatment of sewage sludge. Furthermore, a variation of the process is vermifiltration (or vermidigestion) which is used to remove organic matter, pathogens and oxygen demand from wastewater or directly from black water of flush toilets

Green waste such as dung, grass, etc. has been used for this plant. Period of approximate 2 months is required for generation of vermicomposting.





Green dustbin for collection of Plastic and Non-Biodegradable waste



Blue dustbin for wet and biodegradable wastes



Collection of Solid waste by Gram panchayat

9.3 Rainwater Harvesting

Rain water which is accumulated on terrace of different building is getting utilised by means of rain water harvesting system. Water from the various buildings is transferred to the storage. Rain water is utilized to recharge the ground water.

Rainwater harvesting in a college is crucial for promoting sustainability and conserving water resources. It reduces the reliance on external water supplies, ensuring a more self-sufficient and eco-friendly water management system. By collecting rainwater, the college can significantly lower water bills, as the harvested water can be used for non-potable purposes such as irrigation and cleaning. Additionally, rainwater harvesting helps reduce the strain on local water resources, mitigating issues like flooding and soil erosion. This practice also serves as an educational tool, inspiring students to actively participate in environmental conservation. Overall, rainwater harvesting plays a vital role in creating a greener and more sustainable campus.





9.4 Restricted entry of automobiles

The college is situated in a rural area, there is a limited availability of public transportation, which makes commuting to the institution challenging for many students. Due to their financial constraints, most students are unable to afford private vehicles such as autos or cars. As a result, bicycles have become the preferred mode of transportation for commuting between home and college. To support this, the college has established bicycle stands on campus to encourage a disciplined and secure environment for students and staff. Additionally, the institution has taken steps to promote environmental awareness by encouraging everyone to observe a 'No Vehicle Day'. This initiative aims to reduce pollution levels and conserve energy. On such days, vehicles are parked away from the entrance, which helps minimize noise and air pollution, contributing to a cleaner and healthier campus environment.

Following are the same images of actual system



9.5 College Initiative for a Plastic-Free Campus

The use of plastic in campus is minimized by creating awareness among staff and students through orientation by authorities and display boards in premises. Further harmful effects are also triggered through the N.S.S. cleanliness programs. Use of polythene bags less than 80 micron thickness is prohibited in the campus.

Below is an image of the college's commitment to becoming plastic-free.



9.6 College Initiative for a clean Campus

Colleges take the initiative to maintain cleanliness in the premises by organizing regular cleaning drives, raising awareness through campaigns, and strategically placing dustbins around the campus. Involving students through committees or clubs, providing incentives for cleanliness, and ensuring the maintenance staff is equipped for daily tasks also contribute to a cleaner campus. Additionally, promoting eco-friendly practices, such as recycling and using biodegradable products, helps create a sustainable environment. Through these initiatives, colleges foster a sense of responsibility and pride in maintaining a clean and healthy campus.



LOKNETE DR.BALASAHEB VIKHE PATIL,(PADMA BHUSHAN AWARDEE)

Establishment 4 August

PRAVARA RURAL EDUCATION SOCIETY'S

ARTS, COMMERCE & SCIENCE COLLEGE, ALKUTI

ID. No. PU/AN/ACS/78/2004

College code No.757

A/p.Alkuti, Tal.Parner, Dist.Ahmednagar.Pin-414305



• Phone: (02488) 250357

Email ID : Principal.acsalkuti@pravara.in

Date: 31/07/2023

NOTICE

Keep your college clean

All the staff and students are hereby informed to maintain cleanliness in the college premises. You are instructed to put the waste into the specified dustbins located at various places in the campus. Punitive action will be taken if anyone is found littering the classrooms and the campus.



9.7 College Initiative for a provide ramps on the ground floor for disabled students

Colleges take the initiative to provide ramps on the ground floor for disabled students to ensure accessibility and inclusivity. These ramps are strategically placed near entrances and common areas to facilitate easy movement for students with mobility challenges. Additionally, colleges ensure that the ramps are designed to meet safety standards, with proper railings and non-slip surfaces. By prioritizing accessibility through such initiatives, colleges create an environment where disabled students can navigate the campus with ease and participate fully in college life.



10 Scope for Improvement

- **E-Waste Management** – Setting up a program for the **collection of E-waste** and submitting it to government-approved E-waste collectors for safe disposal and recycling.
- **Energy Efficiency** – Installing **Solar Panels** on rooftops to harness renewable energy and reduce the campus's carbon footprint.
- **Digitalization of Administrative Processes** – Reducing paper waste by transitioning to **digital administrative systems** for applications, registrations, and record-keeping.

ENERGY & GREEN AUDIT COMPLETION CERTIFICATE

This is to certify that the following facility has carried out Energy & Green Audit for the academic year of 2023-24 as per guidelines laid down by the Bureau of Energy Efficiency (BEE), Ministry of Power, Govt. of India

Name of the Installation	Loknete Dr. Balasaheb Vikhe Patil (Padma Bhushan Awardee) Pravara Rural Education Society's Arts, Commerce & Science College, Alkuti
Details of Facilities Audited	Main college building including laboratories, libraries, Classroom, etc.
Date of Energy and Green Audit	07 January 2025
Name of Certified Energy Auditor & Certification Number	Mr. Swapnil Gaikwad - EA 20121
Name of ISO 50001 Lead Auditor & Certification Number (Certification by Accreditation Body – TUV Nord)	Mr. Atul Kakad 35258395 - 07
Empanelment No (With Maharashtra Energy Development Agency, Govt. of Maharashtra)	MEDA/ECN/2022-23/ Class- A/EA-31
Validity of the Certificate	06 January 2026

Authorised Signatory

Atul S Kakad

PowerTech Energy Solutions