

ENERGY AUDIT REPORT

Pune Vidyarthi Griha's
**PUNE VIDYARTHI GRIHA'S COLLEGE OF ENGINEERING, TECHNOLOGY &
MANAGEMENT (AN AUTONOMOUS INSTITUTE AFFILIATED TO SPPU),**
Vidyanagari, Parvati, Pune 411 009



Year: 2025-26

Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktangam English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



REGISTRATION CERTIFICATES: BEE, UDYAM, MEDA, ISO-9001 & 14001:

MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary,
Aundh, Pune, Maharashtra-411067
PIN No: 420-33009450
Email: eeaa@mahauria.com, Web: www.mahauria.com

ECN/2024-25/CR-02/385 8th October, 2024

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 Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Mukangan English School,
Parvati, Pune - 411 009.

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

Registration Number : MEDA/ECN/2024-25/Class A/EA-22

- 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 7th October, 2026 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 (E.C.)

Regn. No. EA-8192 No.2942

National Productivity Council
(National Certifying Agency)
PROVISIONAL CERTIFICATE

This is to certify that Mr./Ms. **Achyut Yashavant Mehendale**
son / daughter of Mr. **Yashavant**
has passed the National Certification Examination for Energy Auditors in April - 2007, 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 : 10th August 2007

Dr. Chintan Kumar
Controller of Examination

भारत सरकार
Government of India
मूक, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER UDYAM-MH-26-0135636

NAME OF ENTERPRISE ENGRESS SERVICES

TYPE OF ENTERPRISE

S.No.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

MAJOR ACTIVITY SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR GENERAL

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	Engress Services

OFFICIAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	26	Name of Premises/ Building	Yashshree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar/Nirmal Bag Soc	City	Pune
State	MAHARASHTRA	District	PUNE, Pin-411009
Mobile	8767447244	Email:	engress123@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE 13/04/2021

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS 13/04/2021

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

DATE OF UDYAM REGISTRATION 27/07/2021

Certificate of Registration

This is to Certify that
Environmental Management System of

ENGRESS SERVICES
26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE-411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 14001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EEKW20
Initial Registration Date : 29/03/2023
Date of Expiry : 28/03/2026
1st Surve. Due : 29/02/2024
2nd Surve. Due : 28/02/2025

Dr. Chintan Kumar
Director

MMS **EGAC** **IAF**
Accredited
ISO 14001:2015

Magnitude Management Services Pvt. Ltd.
B-55, Lower Ground Floor, Sector 82, Noida-201301, U.P, India
e-mail: info@mmsscertification.com, website: www.mmsscertification.com
* Subject to successful surveillance audits and case surveillance audits to use allowed to be conducted, this certificate shall be suspended/terminated.
Certificate Validity: Please be check the validity of certificate on http://www.mmsscertification.com

Certificate of Registration

This is to Certify that
Quality Management System of

ENGRESS SERVICES
26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE-411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 9001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EQK13
Initial Registration Date : 27/03/2023
Date of Expiry : 26/03/2026
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2nd Surve. Due : 27/02/2025

Dr. Chintan Kumar
Director

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ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Pune Vidyarthi Griha's College of Engineering, Technology & Management (An Autonomous Institute affiliated to SPPU), Vidyanagari, Parvati, Pune 411 009 for awarding us the assignment of Energy Audit of their Campus for the Year: 2025-26.

We are thankful to all the staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. Pune Vidyarthi Griha's College of Engineering, Technology & Management (An Autonomous Institute affiliated to SPPU), Pune consumes Energy in the form of Electrical Energy used for various gadgets, office & other facilities.

2. Study of Connected Load & Present Energy Consumption:

No	Particulars	Value	Unit
1	Total Connected Load	237	kW
2	Annual Energy Purchased	243858	kVAh

3. Per Capita Energy Consumption:

No	Particulars	Value	Unit
1	Total Annual Energy Purchased	243858	kVAh
2	No of students studying in the College	2801	Nos
3	Per Capita Energy Consumption = (1) / (2)	86.78	kVAh/Annum

4. Study of % Usage of LED Lighting:

No	Particulars	Value	Unit
1	% of Usage of LED Lighting to Total Lighting Load	94	%

5. Initiatives on Energy Security:

No	Head	Action Taken
1	Energy Efficiency Initiatives	1. Usage of LED Lighting 2. Usage of Auto Pump Level controller
2	Usage of Renewable Energy	<ul style="list-style-type: none"> Installation of Solar PV Vehicle Charging Station Sensor Based Light Operation in Wash Rooms Started Energy Club in the College Partnering with Energy Swaraj Foundation Energy meters installed in classrooms of one building as an initiative for monitoring and reducing energy consumption through contests

6. Assumptions:

1. Emission Fator of Electricity: **0.93 Kg of CO₂ / kWh**
2. CO₂ Emissions are computed For Scope-2

7. References:

- Audit Methodology: www.mahaurja.com
- Energy Conservation Building Code: ECBC-2017: www.beeindia.gov.in
- For CO₂ Emission Factors: www.ccd.gujarat.gov.in

ABBREVIATIONS

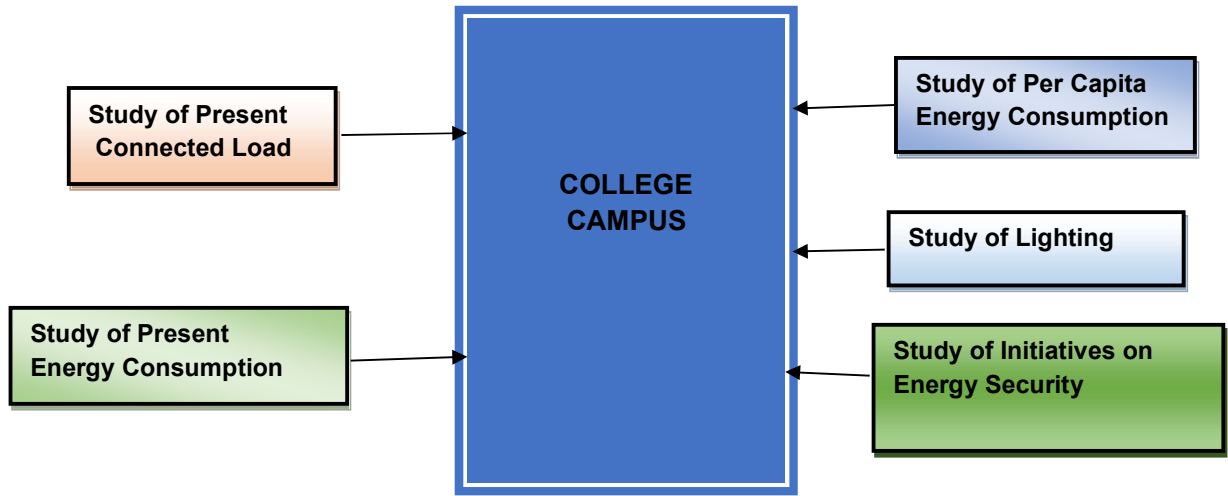
LED	:	Light Emitting Diode
MSEDCL	:	Maharashtra State Electricity Distribution Company Limited
IQAC	:	Internal Quality Assurance Cell
BEE	:	Bureau of Energy Efficiency
FTL	:	Fluorescent Tube Light
CFL	:	Compact Fluorescent Light
PV	:	Photo Voltaic
Kg	:	Kilo Gram
kVAh	:	kilo-Watt Ampere Hour
CO ₂	:	Carbon Di Oxide
MT	:	Metric Ton

CHAPTER-I INTRODUCTION

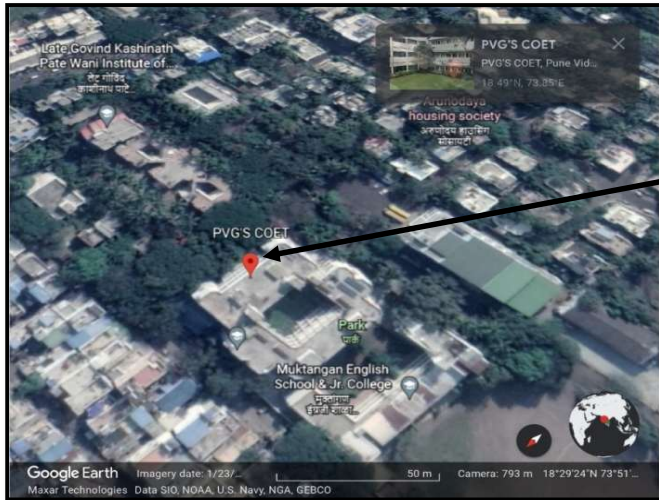
1.1 Introduction:

An Energy Audit is conducted at Pune Vidyarthi Griha's College of Engineering, Technology & Management (An Autonomous Institute affiliated to SPPU), Vidyanagari, Parvati, Pune 411 009.

1.2 Key Study Points:



1.3 College Location Image:



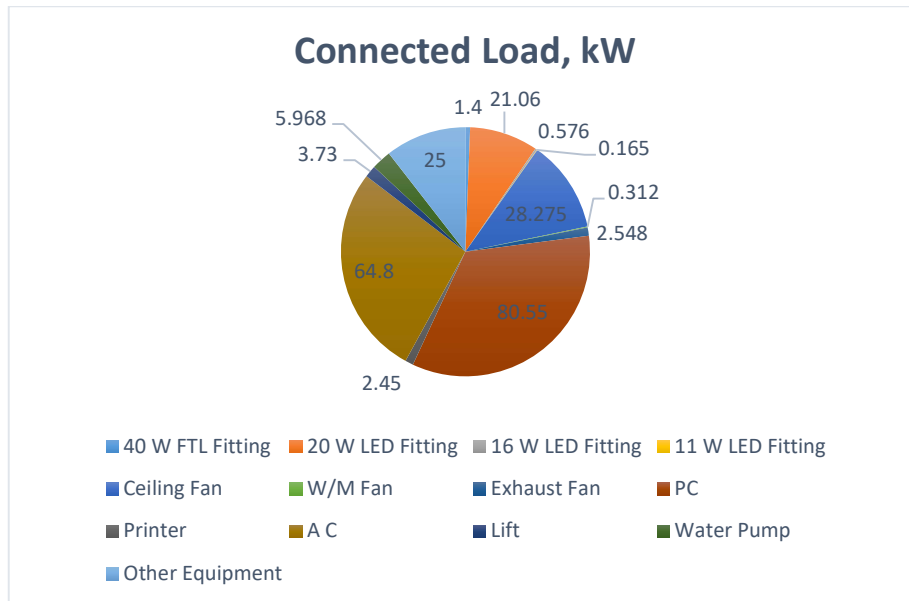
CHAPTER-II STUDY OF CONNECTED LOAD

In this Chapter we present the major contributors to the connected load.

Table No 1: Study of Equipment wise Connected Load:

No	Equipment	Qty	Load, W/Unit	Load, kW
1	40 W FTL Fitting	35	40	1.4
2	20 W LED Fitting	1053	20	21.06
3	16 W LED Fitting	36	16	0.576
4	11 W LED Fitting	15	11	0.165
5	Ceiling Fan	435	65	28.275
6	W/M Fan	6	52	0.312
7	Exhaust Fan	49	52	2.548
8	PC	537	150	80.55
9	Printer	14	175	2.45
10	A C	36	1800	64.8
11	Lift	1	3730	3.73
12	Water Pump	1	5968	5.968
13	Other Equipment	100	250	25
14	Total			236.8

Chart No 1: Study of Connected Load:



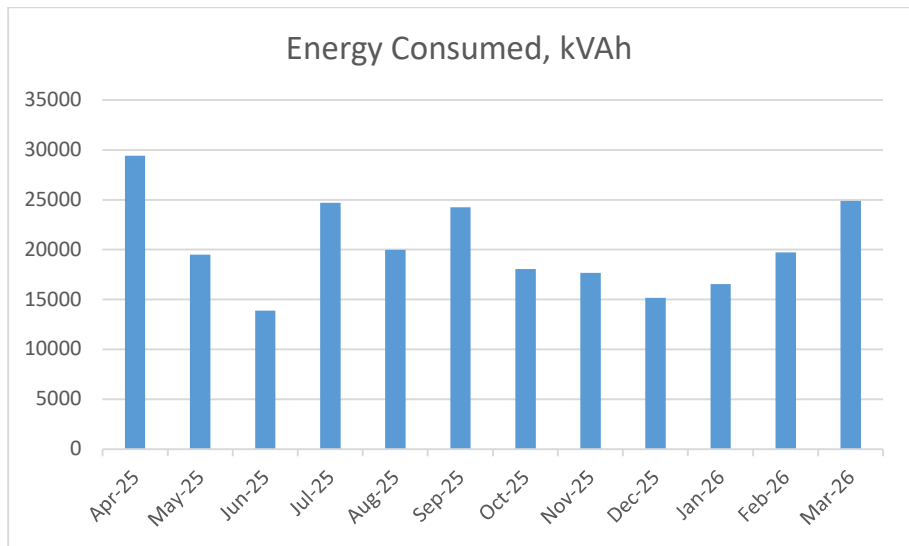
CHAPTER-III STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of Energy Consumption of the College.

Table No 2: Study of Energy, LPG & Diesel Consumption: 2025-26:

No	Month	Energy Purchased, kVAh	CO ₂ Emissions, tCO ₂ e
1	Apr-25	29413	27.35
2	May-25	19486	18.12
3	Jun-25	13884	12.91
4	Jul-25	24711	22.98
5	Aug-25	19992	18.59
6	Sep-25	24254	22.56
7	Oct-25	18036	16.77
8	Nov-25	17688	16.45
9	Dec-25	15190	14.13
10	Jan-26	16554	15.40
11	Feb-26	19749	18.37
12	Mar-26	24901	23.16
13	Total	243858	226.79

Chart No 2: To study the variation of Monthly Electrical Energy Consumption:



CHAPTER-IV

STUDY OF PER CAPITA ENERGY CONSUMPTION

Per Capita Energy Consumption: Per Capita Energy Consumption Index of an educational College/College is its Annual Energy Consumption in Kilo Watt Hours per student studying in the College/College.

It is determined by:

$$\text{Per Capita Energy Consumption} = \frac{\text{Annual Energy Consumption in kWh}}{\text{(Total No of students studying)}}$$

Table No 3: Computation of Per Capita Energy Consumption:

No	Particulars	Value	Unit
1	Total Annual Energy Purchased	243858	kVAh
2	No of students studying in the College	2801	Nos
3	Per Capita Energy Consumption = (1) / (2)	86.78	kVAh/Annum

CHAPTER-V STUDY OF LIGHTING

Terminology:

1. Lumen is a unit of light flow or luminous flux. The lumen rating of a lamp is a measure of the total light output of the lamp. The most common measurement of light output (or luminous flux) is the lumen. Light sources are labeled with an output rating in lumens.

2. Lux is the metric unit of measure for illuminance of a surface. One lux is equal to one lumen per square meter.

3. Circuit Watts is the total power drawn by lamps and ballasts in a lighting circuit under assessment.

4. Installed Load Efficacy is the average-maintained illuminance provided on a horizontal working plane per circuit watt with general lighting of an interior. Unit: lux per watt per square metre (lux/W/m²)

5. Lamp Circuit Efficacy is the amount of light (lumens) emitted by a lamp for each watt of power consumed by the lamp circuit, i.e. including control gear losses. This is a more meaningful measure for those lamps that require control gear. Unit: lumens per circuit watt (lm/W)

6. Lighting Power Density: It is defined as Total Lighting Load in a room divided by the Area of that Room in square meters.




In this Chapter we compute the Lighting Power density and the percentage usage of LED Lighting to total Lighting Load of the College.

Computation of % Usage of LEDs to Total Lighting Load:

No	Particulars	Value	Unit
1	Total LED Lighting Load	21.80	kW
2	Other Lighting Load	1.4	kW
3	Total Lighting load =1+2	23.20	kW
4	% of LED to Total Lighting Load=3*100/4	94	%

CHAPTER-VI STUDY OF INITIATIVES ON ENERGY SECURITY

Usage of Renewable Energy & Energy Conservation Projects:

No	Head	Observation	Photograph
1	Usage of Renewable Energy	Installation of Solar PV based Vehicle Charging Station	<p>Solar PV Based Vehicle Charging Station:</p>  <p>Pune, Maharashtra, India 7/152, PVG College Rd, Parvati, Nimmal Baug Colony, Shivajinagar, Pune, Maharashtra 411005, India Lat: 18.522604 / Long: 73.8522804</p>
2	Energy Conservation Projects	1 Usage of LED Tubes	<p>LED Tube</p>  <p>Pune, Maharashtra, India PVCO-KC1, Nimmal Baug Colony, Shivajinagar, Pune, Maharashtra 411005, India Lat: 18.522604 / Long: 73.8522804</p>
		2 Usage of BEE STAR Rated A C	<p>BEE STAR Rated AC</p>  <p>Pune, Maharashtra, India Pune Vidyarthi Grihas College Of Engineering And Technology, 44, Shivajinagar Rd, Parvati, Shivajinagar, Pune, Maharashtra 411005, India Lat: 18.4990493 / Long: 73.8522804 Sunday 12 April 2026 12:48:32</p>
		3 Usage of Sensor based Lighting in Washrooms	
		4 Energy meters installed in classrooms of one building as an initiative for monitoring and reducing energy consumption through contests	