

Energy Audit Report

(2022-23)



Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's
Ramkrishna Paramhansa Mahavidyalaya,
Osmanabad - 413 501 (MS)



Energy Audit Conducted by _____



Kedar Khamitkar & Associates

Mahaurja Empanelled Energy Auditor & Planner



ISO 9001-2015 Certified



■ Requirements for the NAAC

CEA Team has been conducted detailed energy audit of Ramkrishna Paramhansa Mahavidyalaya, Osmanabad Building Located at Osmanabad Maharashtra

During Energy Audit we have found environmental consciousness and sustainability initiatives in their campus.

1. Percentage of Annual Lighting power requirement met through LED Bulbs (Current Year Data) = 74 %
2. Percentage of Annual Power requirements met through Renewable Energy Sources Current year data is 4 %



Kedar



Kedar Khamitkar

Energy Auditor
(Certified by Bureau of Energy Efficiency,
Ministry of Power, Gov. of India)
Empanelled Energy Auditor MAHAURJA ,
Govt. of Maharashtra Institution

EE Measures for Buildings



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■ Executive Summary

The objective of the audit was to study the energy consumption pattern of the facility, identify the areas where potential for energy/cost saving exists and prepare proposals for energy/cost saving along with investment and payback periods.

The salient observations and recommendations are

| Sr | Recommendations | Savings per year | Investment Rs. | Payback |
|----|--|------------------|----------------|-----------|
| 1 | Replace Existing Inefficient Ceiling Fans with Efficient (Qty : 106 BLDC fans) | 4800 KWH | 2.14/- Lakh | 5.3 yrs |
| 2 | Improve Power Quality : Install Voltage Servo Stabilizer of 50 KVA Capacity | 6000 KWH | 75000/- | 1.51 yrs |
| 3 | Install occupancy Sensors in Campus Energy Consumption Monitoring & Security purpose (100 Sensors) | 1000 KWH | 75000/- | 1.51 yrs |
| 4 | Conduct Awareness Training Program (Install Sign Boards) | - | No investment | Immediate |



■ Preface

An energy audit is a study of a plant or facility to determine how and where energy is used and to identify methods for energy savings. There is now a universal recognition of the fact that new technologies and much greater use of some that already exist provide the most hopeful prospects for the future. Data collection for energy audit of the Ramkrishna Paramhansa Mahavidyalaya, Osmanabad was conceded by EA Team on 01st March 2023. This audit was over sighted to inquire about convenience to progress the energy competence of the campus.

All data collected from each classroom, Laboratory, Library & every room. The work is completed by considering how many Tubes, Fan, A.Cs, Electronic instruments, etc. in each room. How much was participation of each component in total electricity consumption.



■ Acknowledgement

We express our sincere gratitude to the Principal Sir & authorities of Ramkrishna Paramhansa Mahavidyalaya, Osmanabad for entrusting and offering the opportunity of energy performance assessment assignment. We are thankful to Institute for their positive support in undertaking the task of system mapping and energy efficiency assessment of all electrical system, utilities and other workshop equipment. The field studies would not have been completed on time without their interaction and guidance. We are grateful to their cooperation during field studies and providing necessary data for the study.

With Best Wishes,



Kedar Khamitkar

- Energy Auditor, Certified by Bureau of Energy Efficiency, Ministry of Power, Govt. of India
- Empanelled Consultant MAHAURJA, Govt. of Maharashtra



प्रतिज्ञा

हम सत्यनिष्ठा से प्रतिज्ञा करते हैं कि अपने सभी कार्यों में पेट्रोलियम उत्पादों के संरक्षण हेतु सतत प्रयासरत रहेंगे, ताकि देश की प्रगति के लिए आवश्यक इन सीमित संसाधनों की आपूर्ति अधिक समय तक सम्भव हो सके। आदर्श नागरिक होने के नाते हम लोगों को पेट्रोलियम पदार्थों के व्यर्थ उपयोग से बचने तथा पर्यावरण संरक्षण हेतु स्वच्छ ईंधन का प्रयोग करने के लिए जागरूक करेंगे।

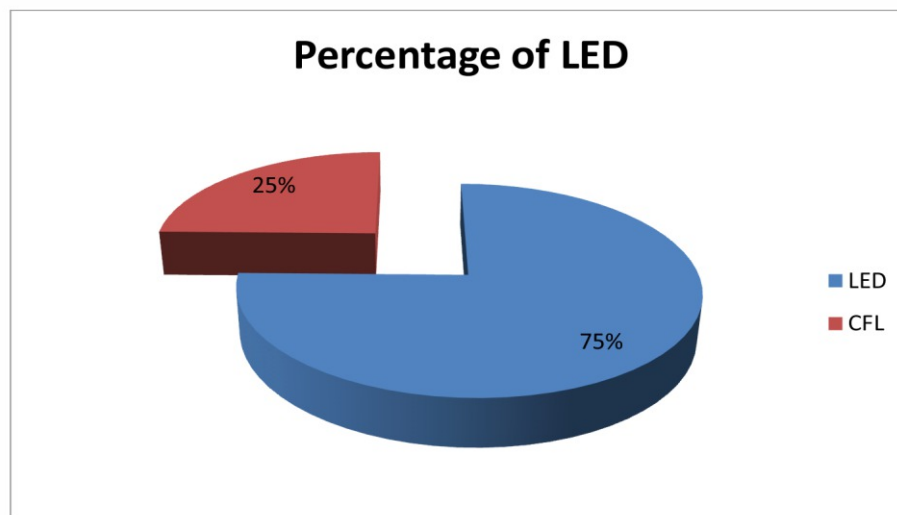


■ Requirements for NAAC

Percentage of use LED Lighting



| Type | Total W |
|-------------------------------|--------------------|
| 01. LED Lights Connected Load | 9986 |
| 02. CFL Bulb Connected Load | 3276 |
| Total Lighting Load | 13262 Watts |



Observations :

Percentage of Annual Power requirements met through LED bulb / tube current year data is 75 %

Suggestions :

Replace 25 % Inefficient CFL lighting with Efficient LED Lighting

■ Energy Performance Index (EPI)

Ramkrishna Paramhansa Mahavidyalaya, Osmanabad
Uses Electrical Energy from MSEDCL Maharashtra State Electricity
Distribution Company Limited.

The Specific Energy Consumption (SEC) is the ratio of energy
required per square meter.

Total Electricity Consumption 60944 KWH /Year

Total Built-up Area 37415.0271 sq.meter

In this case the SEC is evaluated as
electrical units consumed per square meter of area.

Observations :

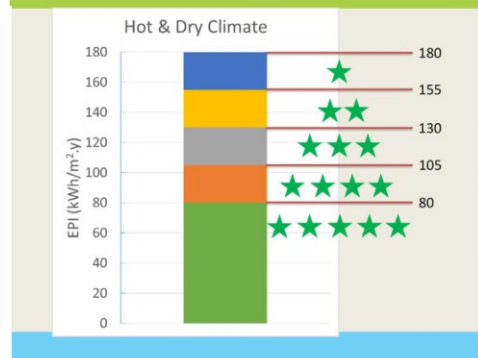
EPI calculated as under (for Electricity) : 1.62 KWH/Sq. Meter

Energy benchmarks for Commercial Buildings

EPI benchmarks for Institutes

| Climate Zone | EPI (kWh/m ² /yr) |
|--------------|---------------------------------|
| Warm & Humid | 150 |
| Composite | 117 |
| Hot & Dry | 106 |
| Moderate | 129 |

BEE Star Rating for Building



Disclaimer :

The EPI benchmarks should be considered as an Indicative figure as it largely depends upon the operating hours, energy efficiency measures, sample size, climatic zone and lack of detailed information by building owners

■ Chapter: 1 Introduction

About the Institution :

About the Shri. Swami Vivekanand Shikshan Sanstha, Kolhapur It was established in June 1954 and is one of the most renowned education institutes of western Maharashtra located in Kolhapur. Dr. Bapuji Salunke was the founder person of this institute. The Sanstha got founded in the sacred city Kolhapur first. After that, the journey of the institute started. In last 55 years, Sanstha established its work not only in all over the Maharashtra but also in some parts of the Karnataka. Today there are 330 institutes which are running under Institute. Dr. Bapuji Salunke, his son Abhaykumar Salunke & some other teachers & mass leaders helped the Sanstha to reach that glory.

The Premises is situated amidst the landscape serene Osmanabad district with close proximity recreational and amenities such Hospital, Fire Station and much more. During the entire day schedule with smooth transition of internal student traffic management which is highly commendable.

The Management was established in 1954 with humble beginnings. The joint efforts have since being continued leading to quality outputs in the form of education and expansion in the Building Infrastructure. The aim of the College is 'Education for knowledge ,Science and Refined culture' and to continuously enhance the teaching methods in order to provide students with an opportunity for their all-round development. It also strives for excellence in academics and makes an effort to induce passion for learning along with the inspiration for decisive thinking and assessment, thereby helping them to become the best professionals in their chosen careers.



Vision and Mission Statement of College

Vision –

The College has the Vision for dissemination of Education for Knowledge, Science and culture.

Mission -

The College has the Mission to provide quality education to all by means of sheer hard work, dedication and devotion.



■ Chapter: 2

■ Energy Audit Objectives

Ramkrishna Paramhansa Mahavidyalaya, Osmanabad entrusted the work of conducting a detailed Energy Audit of campus with the main objectives given below:

- To study the present pattern of energy consumption
- To identify potential areas for energy optimization
- To recommend energy conservation proposals with cost benefit analysis.

■ Scope of Work, Methodology and Approach :

Scope of work and methodology were as per the proposal .While undertaking data Collection, field trials and their analysis, due care was always taken to avoid abnormal situations so as to generate normal/representative pattern of energy consumption at the facility.

■ Approach to Energy Audit :

We focused our attention on energy management and optimization of energy efficiency of the systems, sub systems and equipment's. The key to such performance evaluation lies in the Sound knowledge of performance of equipment's and system as a whole.

■ Energy Audit:

The objective of Energy Audit is to balance the total energy inputs with its use and to identify the energy conservation opportunities in the stream. Energy Audit also gives focused Attention to energy cost and cost involved in achieving higher performance with technical and financial analysis. The best alternative is selected on financial analysis basis.



■ Chapter : 3

■ Energy Audit Methodology

Energy Audit Study is divided into following steps

1. Historical data analysis:

The historical data analysis involves establishment of energy consumption pattern to the established base line data on energy consumption and its variation with change in production volumes.

2. Actual measurement and data analysis:

This step involves actual site measurement and field trials using various portable Measurement instruments. It also involves input to output analysis to establish actual operating Equipment efficiency and finding out losses in the system.

3. Identification and evaluation of Energy Conservation Opportunities:

This step involves evaluation of energy conservation opportunities identified during the energy audit. It gives potential of energy saving and investment required to implement the Proposed modifications with payback period.



■ Chapter : 4 Study of Electrical Systems

The electrical supply to the Institute comes from MSEDCL LT supply.

MSEDCL LT supply:

Mahavitaran has been installed Nine meters in Campus.

The details of meter are as under

| | | |
|----|------------------------|--------------|
| 01 | Meter - A Consumer No. | 590010158372 |
| 02 | Meter - B Consumer No. | 590010157422 |
| 03 | Meter - C Consumer No. | 590010303321 |
| 04 | Meter - D Consumer No. | 590010158372 |
| 05 | Meter - E Consumer No. | 590010021288 |
| 06 | Meter - F Consumer No. | 590010007838 |
| 07 | Meter - G Consumer No. | 590010009741 |
| 08 | Meter - H Consumer No. | 590010034118 |
| 09 | Meter - I Consumer No. | 590010007820 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Details of Electricity Demand

Meter - A Consumer No. : 590010158372

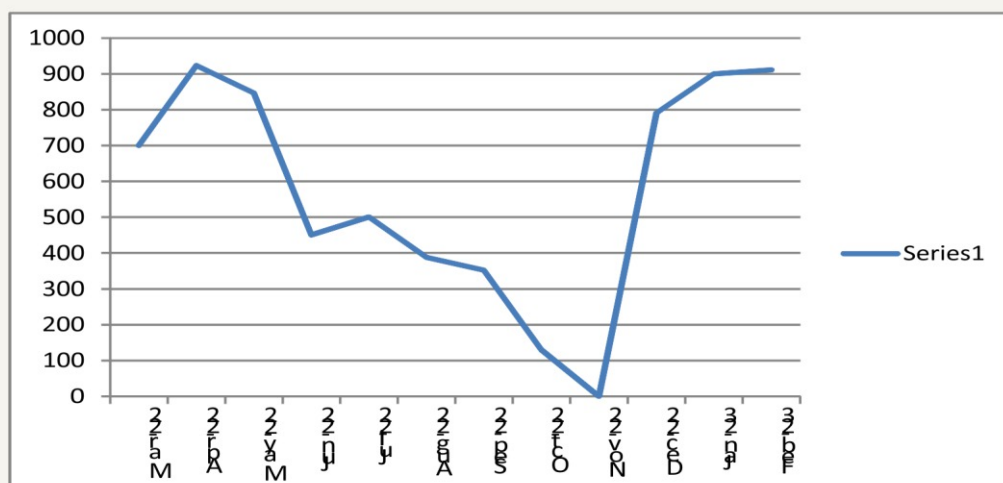
Category : LT COMM < 20KW

Tariff : 52 LT-II A

Supply at : LT



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 700 | 7434 |
| 2 | Apr-22 | 923 | 9358 |
| 3 | May-22 | 846 | 8620 |
| 4 | Jun-22 | 450 | 4931 |
| 5 | Jul-22 | 500 | 5432 |
| 6 | Aug-22 | 388 | 4311 |
| 7 | Sep-22 | 352 | 3950 |
| 8 | Oct-22 | 130 | 1728 |
| 9 | Nov-22 | 0 | 427 |
| 10 | Dec-22 | 790 | 8335 |
| 11 | Jan-23 | 900 | 9436 |
| 12 | Feb-23 | 911 | 9546 |
| Total : | | 6890 | 73508 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - B Consumer No. : 590010157422

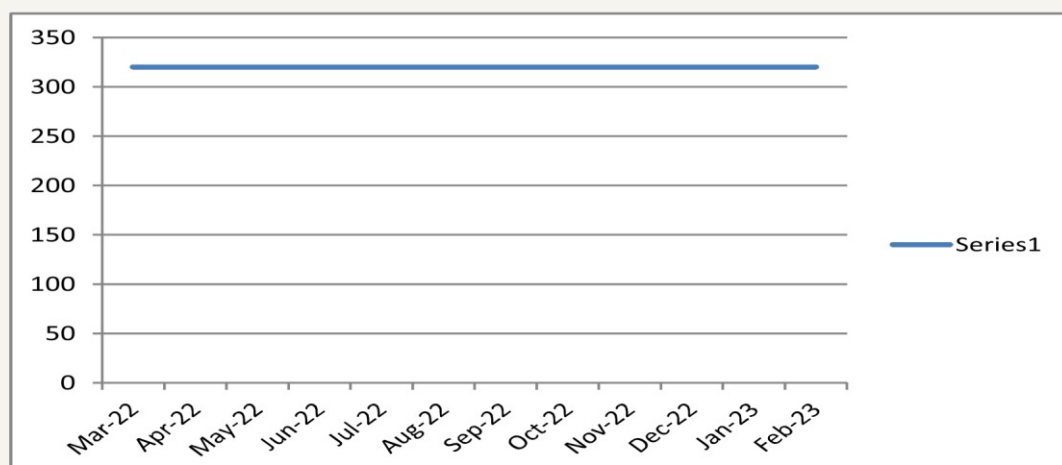
Category : LT COMM < 20KW

Tariff : 52 LT-II A

Supply at : LT



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 320 | 3600 |
| 2 | Apr-22 | 320 | 3600 |
| 3 | May-22 | 320 | 3600 |
| 4 | Jun-22 | 320 | 3600 |
| 5 | Jul-22 | 320 | 3600 |
| 6 | Aug-22 | 320 | 3590 |
| 7 | Sep-22 | 320 | 3600 |
| 8 | Oct-22 | 320 | 3590 |
| 9 | Nov-22 | 320 | 3590 |
| 10 | Dec-22 | 320 | 3600 |
| 11 | Jan-23 | 320 | 3600 |
| 12 | Feb-23 | 320 | 3600 |
| Total : | | 3840 | 43170 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - C Consumer No. : 590010303321

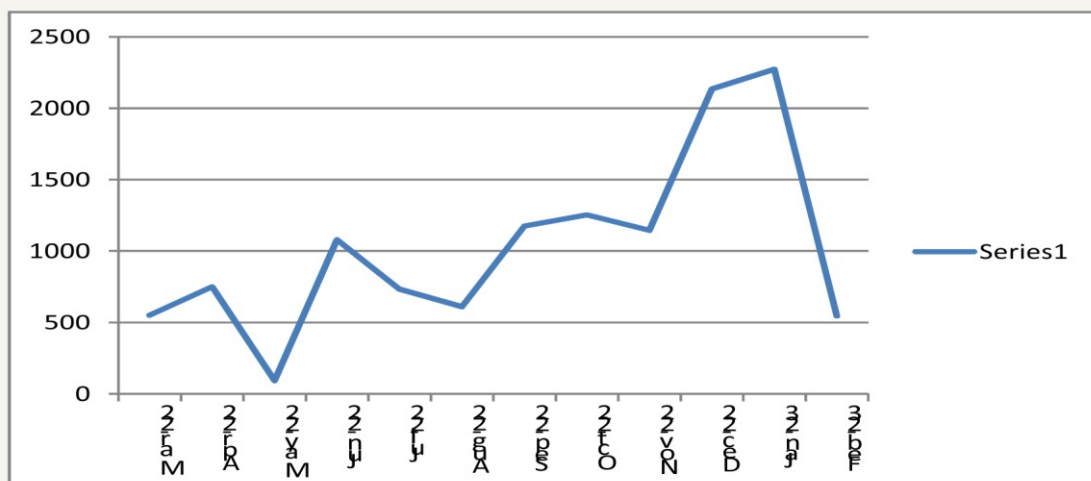
Category : LT-X EDUCATIONAL,HOSPITAL

Tariff : 73 LT-VII B I

Supply at : LT



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|--------------|------------------|
| 1 | Mar-22 | 550 | 4901 |
| 2 | Apr-22 | 750 | 6818 |
| 3 | May-22 | 92 | 1340 |
| 4 | Jun-22 | 1079 | 9187 |
| 5 | Jul-22 | 733 | 6383 |
| 6 | Aug-22 | 610 | 5387 |
| 7 | Sep-22 | 1174 | 9956 |
| 8 | Oct-22 | 1253 | 10596 |
| 9 | Nov-22 | 1144 | 9713 |
| 10 | Dec-22 | 2133 | 17726 |
| 11 | Jan-23 | 2271 | 18844 |
| 12 | Feb-23 | 544 | 4852 |
| Total : | | 12333 | 105703 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - D Consumer No. : 590010158372

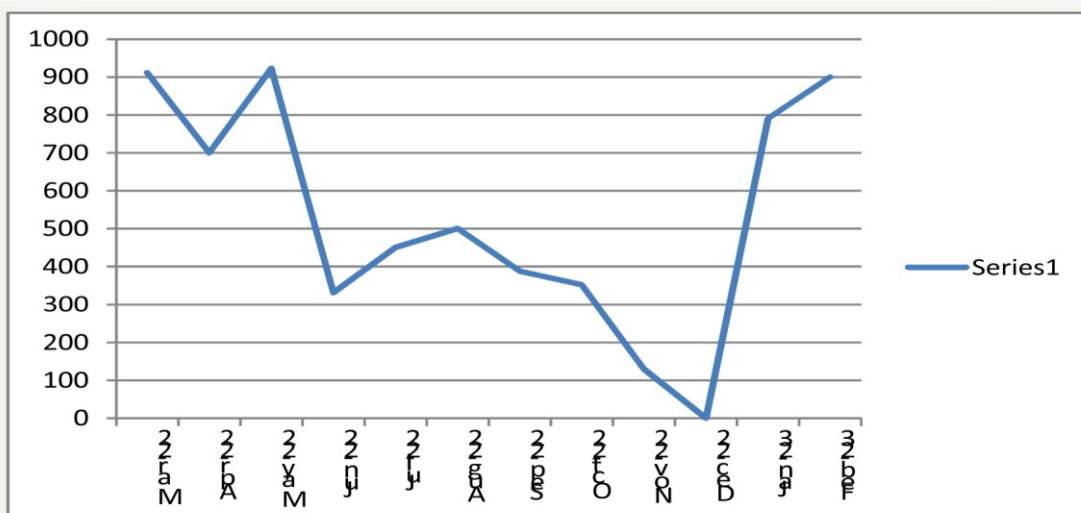
Category : LT COMM < 20KW

Tariff : 52 LT-II A

Supply at : LT



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 911 | 9546 |
| 2 | Apr-22 | 700 | 7434 |
| 3 | May-22 | 923 | 9358 |
| 4 | Jun-22 | 331 | 3343 |
| 5 | Jul-22 | 450 | 4931 |
| 6 | Aug-22 | 500 | 5432 |
| 7 | Sep-22 | 388 | 4311 |
| 8 | Oct-22 | 352 | 3950 |
| 9 | Nov-22 | 130 | 1728 |
| 10 | Dec-22 | 0 | 427 |
| 11 | Jan-23 | 790 | 8335 |
| 12 | Feb-23 | 900 | 9436 |
| Total : | | 6375 | 68231 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - E Consumer No. : 590010021288

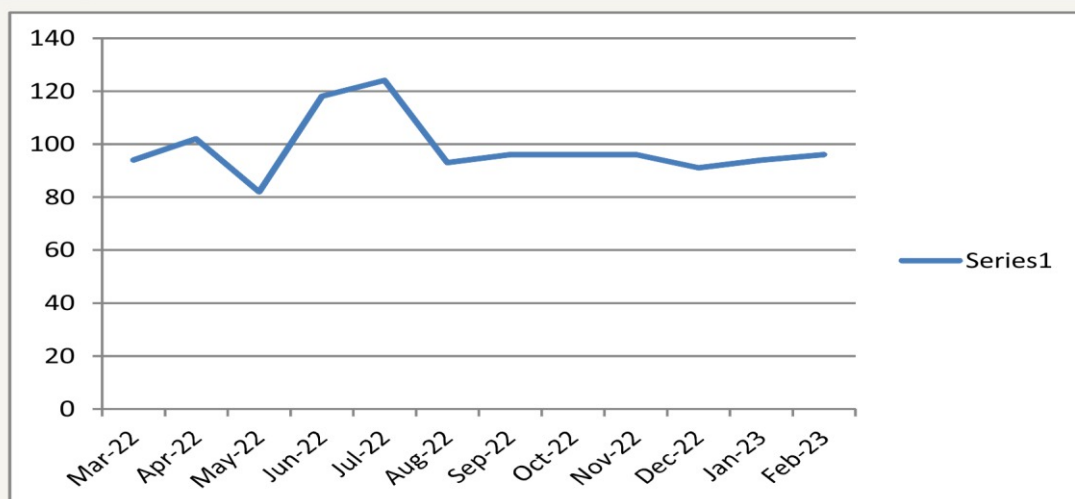
Category : Comm 1Ph < 20KW

Tariff : 052 /LT II

Supply at : LT



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 94 | 1360 |
| 2 | Apr-22 | 102 | 1451 |
| 3 | May-22 | 82 | 1258 |
| 4 | Jun-22 | 118 | 1605 |
| 5 | Jul-22 | 124 | 1663 |
| 6 | Aug-22 | 93 | 1350 |
| 7 | Sep-22 | 96 | 1370 |
| 8 | Oct-22 | 96 | 1380 |
| 9 | Nov-22 | 96 | 1370 |
| 10 | Dec-22 | 91 | 1330 |
| 11 | Jan-23 | 94 | 1350 |
| 12 | Feb-23 | 96 | 1370 |
| Total : | | 1182 | 16857 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - F Consumer No. : 590010007838

Category : 0-20KW Pub Ser oth

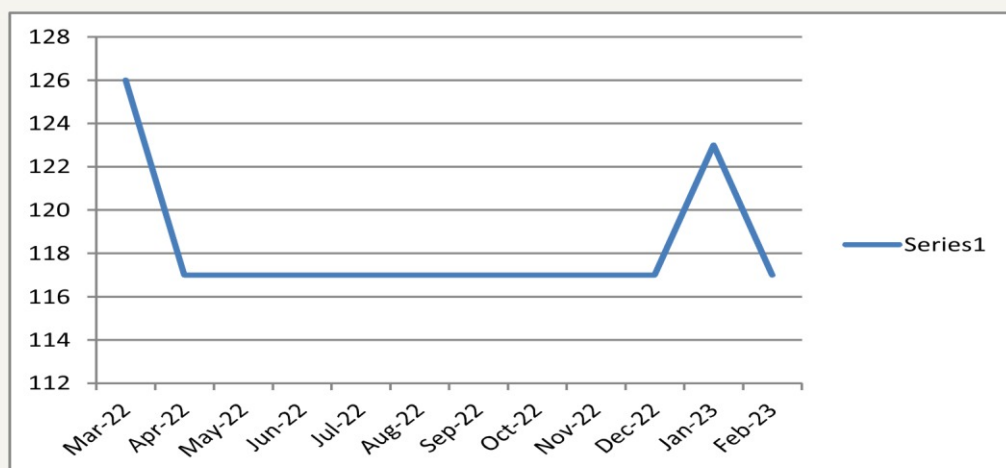
Tariff : 073 /LT-X B

Supply at : LT

Meter status : Billed on Avg (FAULTY)



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 126 | 1510 |
| 2 | Apr-22 | 117 | 1440 |
| 3 | May-22 | 117 | 1440 |
| 4 | Jun-22 | 117 | 1440 |
| 5 | Jul-22 | 117 | 1440 |
| 6 | Aug-22 | 117 | 1440 |
| 7 | Sep-22 | 117 | 1440 |
| 8 | Oct-22 | 117 | 1440 |
| 9 | Nov-22 | 117 | 1440 |
| 10 | Dec-22 | 117 | 1450 |
| 11 | Jan-23 | 123 | 1510 |
| 12 | Feb-23 | 117 | 1440 |
| Total : | | 1419 | 17430 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - G Consumer No. : 590010009741

Category : Comm 1Ph < 20KW

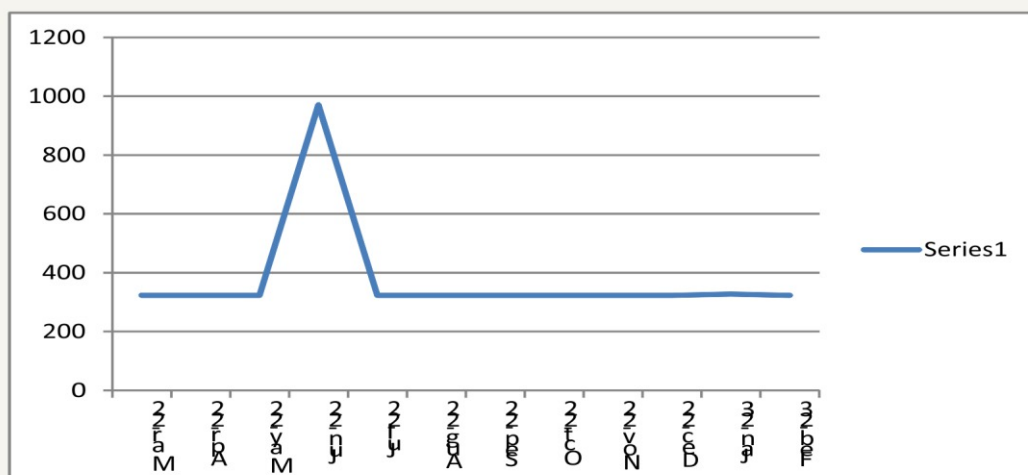
Tariff : 052 /LT II

Supply at : LT

Meter status : NORMAL



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 323 | 3620 |
| 2 | Apr-22 | 323 | 3620 |
| 3 | May-22 | 323 | 3620 |
| 4 | Jun-22 | 971 | 10890 |
| 5 | Jul-22 | 323 | 3630 |
| 6 | Aug-22 | 323 | 3630 |
| 7 | Sep-22 | 323 | 7280 |
| 8 | Oct-22 | 323 | 3630 |
| 9 | Nov-22 | 323 | 3620 |
| 10 | Dec-22 | 323 | 3630 |
| 11 | Jan-23 | 327 | 0 |
| 12 | Feb-23 | 323 | 7370 |
| Total : | | 4528 | 54540 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - H Consumer No. : 590010034118

Category : Comm 1Ph < 20KW

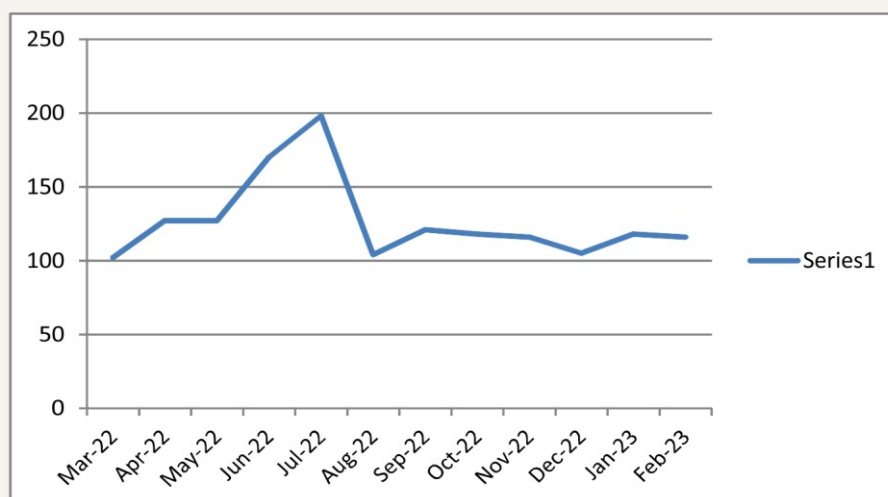
Tariff : 052 /LT II

Supply at : LT

Meter status : NORMAL



| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|-------------|------------------|
| 1 | Mar-22 | 102 | 1430 |
| 2 | Apr-22 | 127 | 1692 |
| 3 | May-22 | 127 | 1692 |
| 4 | Jun-22 | 170 | 2105 |
| 5 | Jul-22 | 198 | 2373 |
| 6 | Aug-22 | 104 | 1450 |
| 7 | Sep-22 | 121 | 1633 |
| 8 | Oct-22 | 118 | 1590 |
| 9 | Nov-22 | 116 | 1580 |
| 10 | Dec-22 | 105 | 1460 |
| 11 | Jan-23 | 118 | 1590 |
| 12 | Feb-23 | 116 | 1580 |
| Total : | | 1522 | 20175 |



■ Study of Electrical Systems

The electrical bills from MSEDCL for 12 months from June 2022 to May 2023 have been studied.

Meter - I Consumer No. : 590010007820

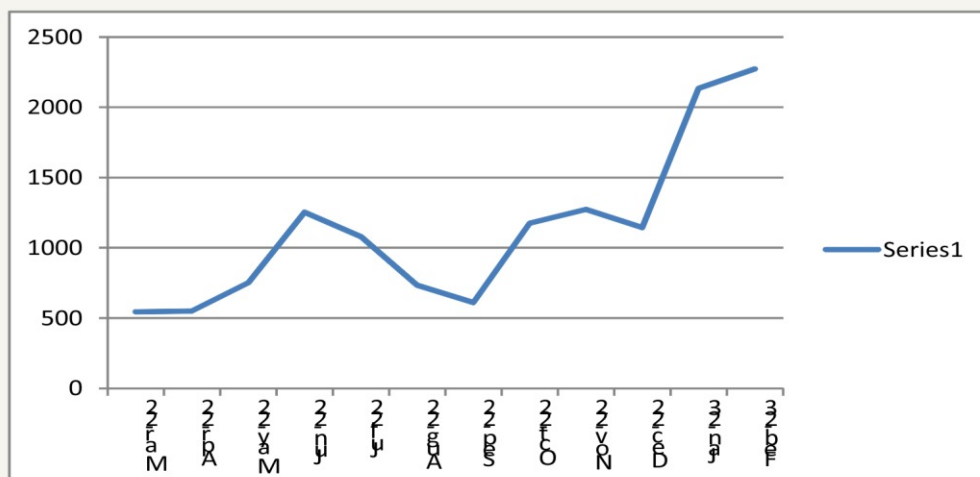
Category : LT-X EDUCATIONAL,HOSPITAL

Tariff : 73 LT-VII B I

Supply at : LT

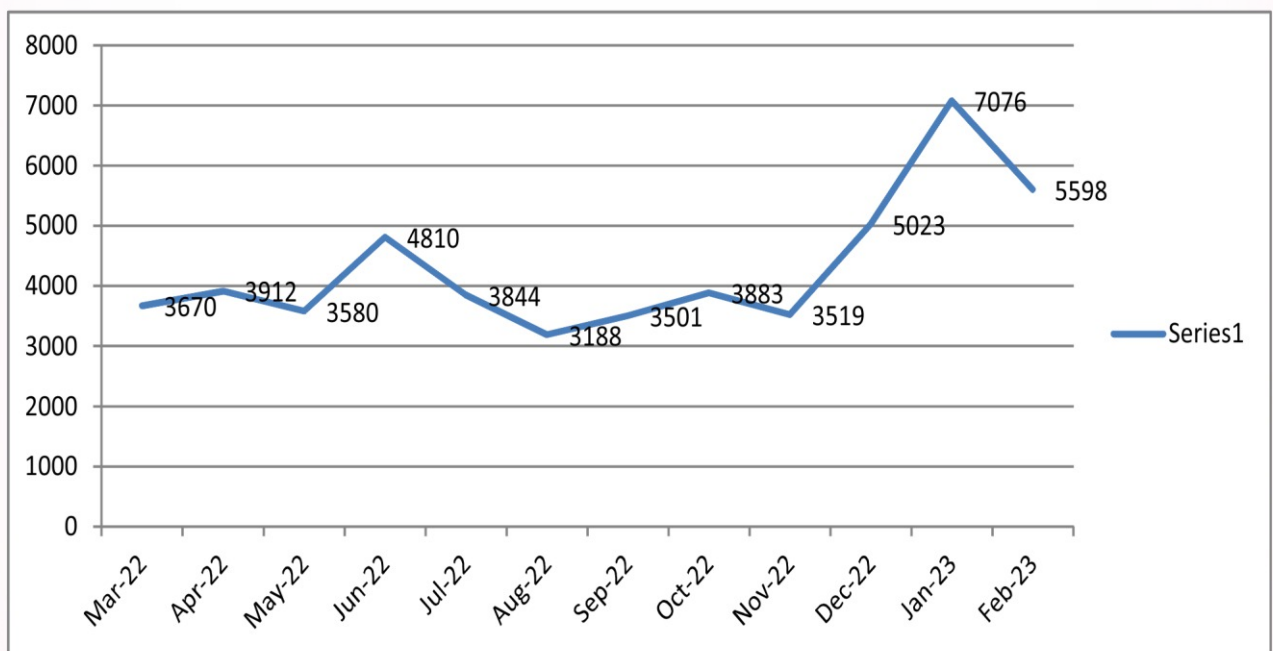


| Sr. No. | Month and year | Units | Electricity bill |
|----------------|----------------|--------------|------------------|
| 1 | Mar-22 | 544 | 9546 |
| 2 | Apr-22 | 550 | 7434 |
| 3 | May-22 | 750 | 9358 |
| 4 | Jun-22 | 1254 | 3343 |
| 5 | Jul-22 | 1079 | 4931 |
| 6 | Aug-22 | 733 | 5432 |
| 7 | Sep-22 | 610 | 4311 |
| 8 | Oct-22 | 1174 | 3950 |
| 9 | Nov-22 | 1273 | 1728 |
| 10 | Dec-22 | 1144 | 427 |
| 11 | Jan-23 | 2133 | 8335 |
| 12 | Feb-23 | 2271 | 9436 |
| Total : | | 13515 | 113876 |



■ Annual Electricity Consumption Historical Electricity Bill:

| Consumer No. | Month | | | | | | | | | | | | Total KWH |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|--------------|
| | Mar-22 | Apr-22 | May-22 | Jun-22 | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | |
| 01 590010007820 | 544 | 550 | 750 | 1254 | 1079 | 733 | 610 | 1174 | 1273 | 1144 | 2133 | 2271 | 13515 |
| 02 590010034118 | 102 | 127 | 127 | 170 | 198 | 104 | 121 | 118 | 116 | 105 | 118 | 116 | 1522 |
| 03 590010009741 | 323 | 323 | 323 | 971 | 323 | 323 | 323 | 323 | 323 | 323 | 327 | 323 | 4528 |
| 04 590010007838 | 126 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 123 | 117 | 1419 |
| 05 590010021288 | 94 | 102 | 82 | 118 | 124 | 93 | 96 | 96 | 96 | 91 | 94 | 96 | 1182 |
| 06 590010158372 | 911 | 700 | 923 | 331 | 450 | 500 | 388 | 352 | 130 | 0 | 790 | 900 | 6385 |
| 07 590010303321 | 550 | 750 | 92 | 1079 | 733 | 610 | 1174 | 1253 | 1144 | 2133 | 2271 | 544 | 12333 |
| 08 590010157422 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 13170 |
| 09 590010158372 | 700 | 923 | 846 | 450 | 500 | 388 | 352 | 130 | 0 | 790 | 900 | 911 | 6890 |
| | | | | | | | | | | | | Total | 60944 |



General Observations based on Electricity Bill:

Total Annual Electricity from Mahavitrans 60944 KWH/year

Max KWH consumption found in the month of Jan 23 and

Min KWH Consumption found in the month of Aug 22

Observations :

1. Electricity from Mahavitrans 60944 Units / Year

Suggestions :

1. Install Occupancy Sensors to minimize electricity unknown losses.
2. Install additional Solar Power Plant of 50 KWp



■ Connected Load Details

Major Energy use and Areas :

In the College Campus Electrical energy is used for various applications like : Computers, Printers, Xerox machines, LCD Projector, Router System, Lighting, Fans, Flood light, Pumping Motor, Air-Conditioning & Other Laboratory Equipment etc.

| Sr. | Appliance | Wattage | Qty. | Total |
|-----|-------------------------------|---------|------|-------|
| 1 | LED Tube light | 20 | 232 | 4640 |
| 2 | LED Bulb | 18 | 297 | 5346 |
| 3 | CFL | 52 | 63 | 3276 |
| 4 | Ceiling Fan | 70 | 106 | 7420 |
| 5 | Wall Fan | 65 | 3 | 195 |
| 6 | Exhaust Fan | 50 | 11 | 550 |
| 7 | AC : Capacity : 1.5 Ton | 1500 | 1 | 1500 |
| 8 | Refrigerator System 165 Liter | 275 | 3 | 825 |
| 9. | Water Pumps : 01 HP | 745 | 1 | 745 |
| 10. | Miscellaneous Load | | | 5200 |

Observations :

Ceiling Fan (70Watt) contributes @7420 Watts Load

Suggestion :

Minimize Connected load Install BEE Star rated Energy efficient BLDC Fans.



Chapter: 5 Performance Evaluation

5.1 Fan System:

Total number of fans used in the campus = 106 No's

Consider @180 days Working 6 Hrs.

- Number of fans to be replace = 106 Nos.
- The Total Current Consumption = 8000 kWh
- The Expected fan Consumption = 3200 kWh
- Expected Saving per year = 4800 kWh/year



Suggestions :

Replace existing Inefficient Fan System (75W)
with Five Star BLDC (28W)



■ 5.2 Lighting System:



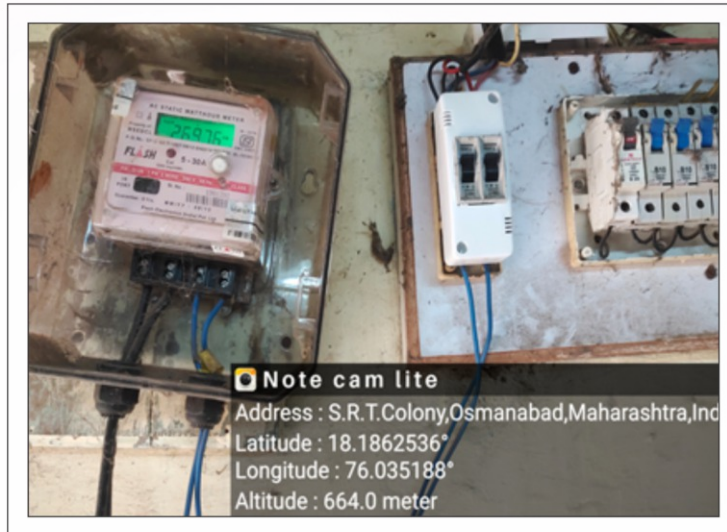
Observations : Existing lighting Tube are installed without reflectors.

Suggestions:

- Improve effectiveness of Lighting System
- Increase Lighting Efficiency by using reflectors.
Light globes generally disperse light in all directions from the source. If a ceiling mounted light does not direct the light back down to the working plane, more fittings will be required to achieve the required lux levels. So the effectiveness of the reflectors (or minimizing losses due to poor reflectors) is important. Reflectors should be both reflective as well as carefully designed to disperse light effectively on the working plane at the design height of the fitting (e.g., light should not be concentrated in one area, providing too much light, whilst falling short of required levels in another area).
- **Silver Reflectors.** This is the reflector that reflects the most light.
White Reflectors. More flexible between indoor and outdoor use.
1. Gold Reflectors 2. Black Reflectors 3. White Reflectors



Existing Condition : Electrical Panel Board



Observations :

An electrical panel upgrade may be required when a panel can no longer handle the voltage flowing through them, resulting in a safety hazard. Factors such as incorrect installation, damage, or age can all reduce the effectiveness of an electrical panel, turning it into a dangerous fire hazard.

Electrical Safety measures need to review!

- Install Safety Distribution Panel board. -
- Install Sign Boards - Prohibition, - Warning, Mandatory and Emergency.

Suggestions for the Electrical Safety

- Avoid contact with power lines.
- Ground electrical equipment.
- Take care with power tools.
- Wear protective clothing.
- Stay on top of housekeeping.



Guidelines for Electrical Safety

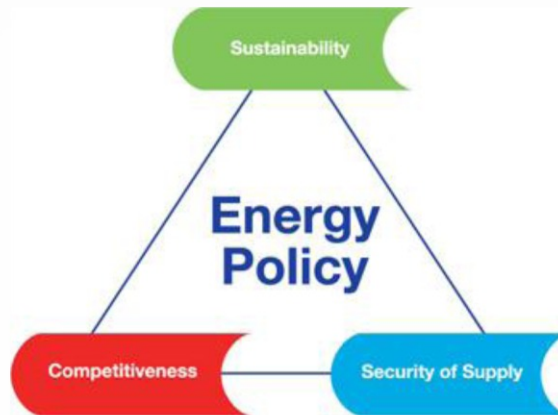
INSTALL ELECTRICAL SAFETY SIGN BOARD

Electrical panels should also have secure covers to ensure no wires are exposed that could cause electrical shock. This also prevents the internal mechanisms from being exposed to dust, dirt, and moisture. Electrical panel boxes in commercial buildings should be secured and accessible by trained personnel only.



Recommendations

1. Declare the Energy Policy



Energy policy is the scheme in which the organization addresses issues related to energy growth and usage including energy production, distribution, and consumption.

2. Create Awareness:

Create Awareness: Conduct Institutional training Program periodically. Need to create energy efficiency/ renewable energy awareness among the college campus i.e. solar, wind, Biogas energy. College should take initiative to arrange seminars, lectures, paper presentation competition among students and staff for general awareness.

***Switch of the Air-conditioning system
1/2 an hour before leaving workplace.***

#Raiseitby1degree

Every 1 Degree increase in AC Setting, Saves 6% Electricity

- Yearly 500 crore units of electricity saving
- ₹ 2500 crore saving for the country annually
- 40 lakh tonnes CO₂ emissions avoided
- Better and healthier planet

Ministry of Power
Government of India

Environmental Awareness Program



Ramkrishna Paramhansa Mahavidyalaya

Osmanabad, Maharashtra

One Day Workshop

Topic : Energy Conservation and Lifestyle for Environment

Date : 15/05/2023



व्यक्तींची जीवणशैली पर्यावरण पूरक असली पाहिजे-डॉ.देशमुख

पारंपारिक /प्रतिनिधी केविल रामकृष्ण परमहंस महविद्यालयाने जी २० अंतर्गत एकदिवसीय कार्यशाळेची शुरुवात केली. या कार्यशाळेचे उद्देश्य पर्यावरण संरक्षण आणि आरोग्यीय जीवनशैली ही पर्यावरण पूरक असली पाहिजे, त्याचबरोबर ऊर्जा पर्यायी वा साधने संपर्क साधणे प्रत्येक वेळेस पाहिजे. हीच सगळी गोष्टी पर्यावरण पूरक असली पाहिजे, या उद्देशाने पर्यावरण डेव्हलपिंग असा प्रकल्प कार्यशाळेच्या अंतर्गत राबवण्यात आला आहे. प्रतिदिन महविद्यालयाचे उद्देश्य पूर्ण करणे महविद्यालय देणुषु संपन्न केले.

या कार्यशाळा दोन सत्रांमध्ये संपन्न झाली. प्रथम सत्रात डॉ. देशमुख यांनी पर्यावरण संरक्षण आणि आरोग्यीय जीवनशैली ही पर्यावरण पूरक असली पाहिजे, या उद्देशाने पर्यावरण डेव्हलपिंग असा प्रकल्प कार्यशाळेच्या अंतर्गत राबवण्यात आला आहे. प्रतिदिन महविद्यालयाचे उद्देश्य पूर्ण करणे महविद्यालय देणुषु संपन्न केले.



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Guidelines for Identified Energy Saving Opportunities

- Use as much natural day light as possible by use of translucent roofing sheets.
- Use day lighting effectively by locating work stations requiring good illuminance near the windows.
- Minimise illuminance in non- task areas by reducing the wattage of lamps or number of fittings
- Avoid use of incandescent/tungsten filament lamps. The power consumed by these lamps is 80% more than the fluorescent lamps (discharge) for same lumen output.
- Use electronic ballasts in place of conventional ballast for fluorescent lamps.
- Task lighting saves energy, utilize it whenever possible.
- All surfaces absorb light to some degree and lower their reflectance. Light colored surfaces are more efficient and need to be regularly painted or washed in order to ensure economical use of light.
- Maintenance is very important factor. Evaluate present lighting maintenance program and revise it as necessary to provide the most efficient use of lighting system.
- Clean luminaries, ceilings, walls, lamps etc. on a regular basis.
- Controls are very effective for reducing lighting cost. Provide separate controls for large ratings.
- Install switching or dimmer controls to provide flexibility when spaces are used for multiple purpose and require different amounts of illumination for various activities.
- Switching arrangements should permit luminaries or rows of luminaires near natural light sources like windows or roof lights to be controlled separately.
- Separate lighting feeder and maintain the feeder at permissible voltages by using transformers.
- Install occupancy sensors for indoor cabin light controls



■ Chapter 6 : Conclusion

- A total Investment of Rs. 3.64/- (Approx. Three Lakhs & Sixty Four Thousand) amount is estimated for the energy efficiency improvement projects)
- Energy Savings expected around 11800 KWH/year.



प्रतिज्ञा

हम सत्यनिष्ठा से प्रतिज्ञा करते हैं कि अपने सभी कार्यों में पेट्रोलियम उत्पादों के संरक्षण हेतु सतत प्रयासरत रहेंगे, ताकि देश की प्रगति के लिए आवश्यक इन सीमित संसाधनों की आपूर्ति अधिक समय तक सम्भव हो सके। आदर्श नागरिक होने के नाते हम लोगों को पेट्रोलियम पदार्थों के व्यर्थ उपयोग से बचने तथा पर्यावरण संरक्षण हेतु स्वच्छ ईंधन का प्रयोग करने के लिए जागरूक करेंगे।

