Energy Audit Report

(2021-22)

Mahatma Basweshwar Education Society's

M. S. Bidve Engineering College

Barshi Road, Pakharsangvi, Latur, Maharashtra 413531

Energy Audit Conducted by

KEDAR KHAMITKAR & ASSOCIATES

Energy Auditor & Planner

(Empanelled Mahaurja, Govt. of Maharashtra)

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Status Energy Efficiency & Management

Requirements for the NAAC

Gov. Certified Energy Auditor team has been Conducted Detailed Energy Audit of **M/s M. S. Bidve Engineering College** Building Located at Latur

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) = **30** %

2. Energy Performance Index = **4.76** KWH/SQM

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

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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 given below.

Sr	Recommendations	Savings/year	Investment	Payback
1	**Replacement of Existing Inefficient Ceiling Fans** (70w) Qty. 774 No's with Efficient BLDC fans (28W) (@6hrs & 200 days)	39000 KWH	1548000/-	3.9 yrs.
2	**Replacement of Existing Inefficient Florescent Tube** (40w) Qty. 663 No's with Efficient LED Tube (20W) (@6hrs & 200 days)	15900 KWH	132600/-	1 Yrs.
3	**Improve Power Quality :** Install Voltage Servo Stabilizer of 100 KVA Capacity	8400 KWH	155000/-	1.8 yrs.
4	**Install occupancy Sensors** in Campus Energy Consumption Monitoring & Security purpose (Class room @23 KW Load / 100 Sensors)	4000 KWH	150000/-	3.7 Yrs.
5	**Use Renewable Energy** Install 75 KW On Grid Roof Top Solar Power Plant	96000 KWH	3375000/-	3.5 Yrs.

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 M. S. Bidve Engineering College building was conceded by EA Team on 28th December 2022. This audit was over sighted to inquire about convenience to progress the energy competence of the campus.

All data collected from each classroom, Workshop, 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 authorities of M. S. Bidve Engineering College Latur for entrusting and offering the opportunity of energy performance assessment assignment.

Honorable Prof. B.V. Dharne Sir I/C Principal

We are thankful to Mr. Chinmay Pattnayak sir - Head, Dept. of Electrical Engg. 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

Building Energy Performance Index (EPI)

M S Bidve Engineering College Latur 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 **84406** KWH /Year

Total Built-up Area **17715.93** Sq. Meter

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

EPI calculated as under (for Electricity): 4.76 KWH/Sq. Meter

EPI KWH/Sq. Meter/Year	Star Label
80-70	1 Star
70-60	2 Star
60-50	3 Star
50-40	4 Star
Below 40	5 Star

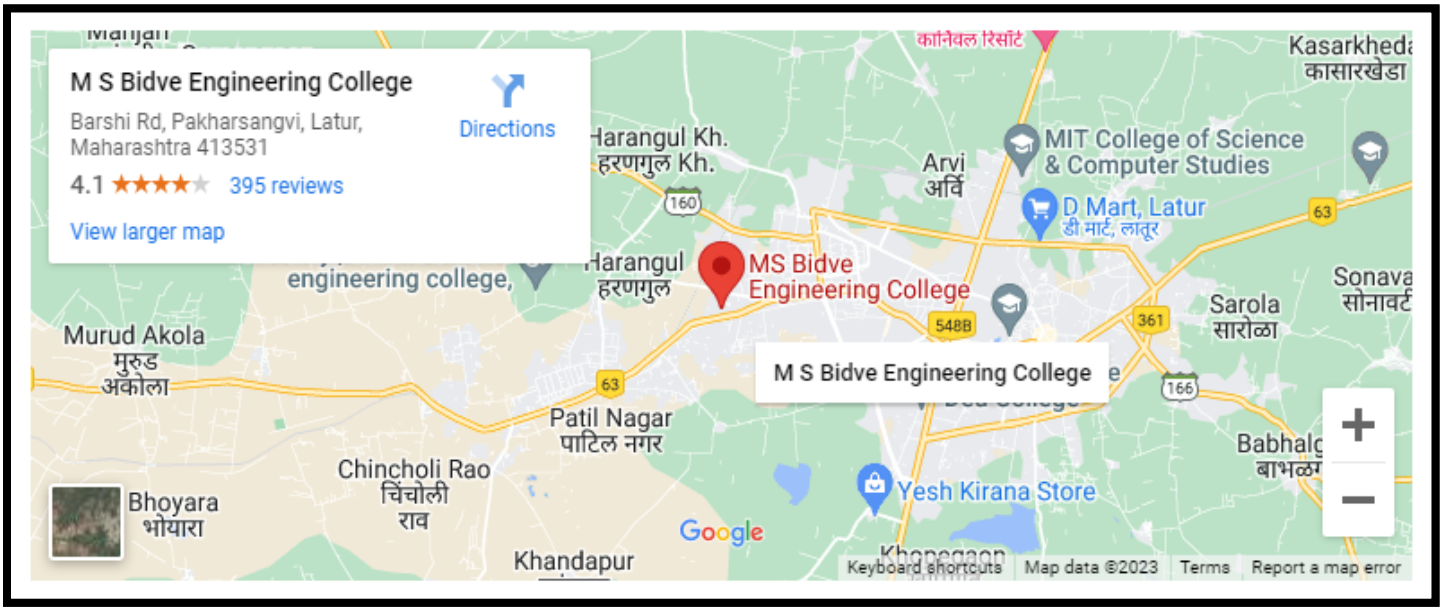
Observations:

As per BEE Star Rating Guidelines Existing M.S. Bidve Engineering College Building may be considered as 5 Star.

Chapter: 1 Introduction:

Mahatma Basweshwar Education Society has been established in 1963 at Latur. This Society is one of the oldest & reputed educational societies in Marathwada region. In the era of globalization, to create engineering graduates having knowledge with global insight, meeting the needs of industry, M.B. Education Society started M. S. Bidve Engineering College in 1983 at Latur, affiliated to Swami Ramanand Teerth Marathwada University, Nanded and approved by AICTE, New Delhi.

UG Courses:	**PG Courses:**
Civil Engineering	Civil Engineering (Structure)
Mechanical Engineering	Mechanical Engineering (Machine Design)
Electronics Engineering	Electronics & Communication Eng.
Computer Science and Engineering	Computer Engineering
Electrical Eng. [Electrical and Power]	
Information Technology	



Latur is well connected by road, railway and air route. It is 320 km from Pune, 280 km from Hyderabad and 480 from Mumbai by bus. At present the air – travel facility is available up to Aurangabad. Latur City has the distinction for its unique and innovative "Latur Pattern" in the field of education all over Maharashtra.

Chapter 2: Energy Audit Objectives:

M. S. Bidve Engineering College entrusted the work of conducting a detailed Energy Audit of campus with the main objectives given bellow:

- 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:

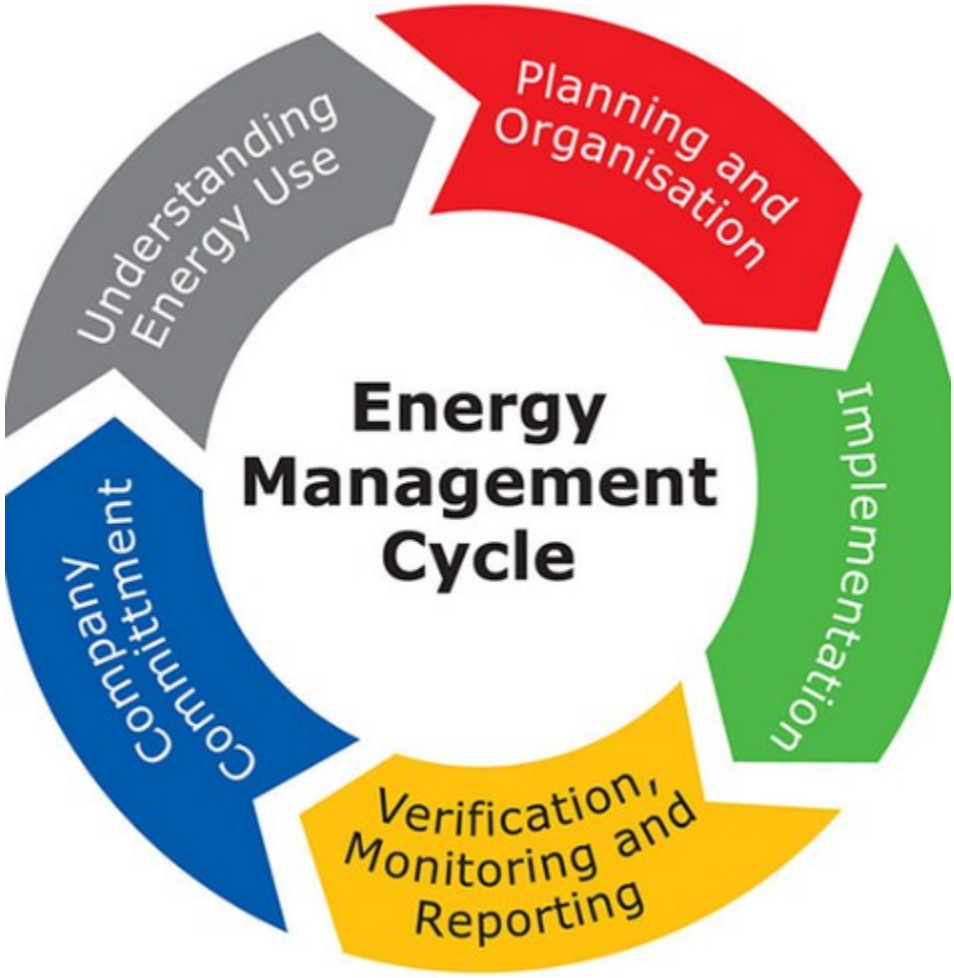
The historical data analysis involves establishment of energy consumption pattern to the established base line data on energy consumption and its variation with change in production volumes.

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.



4. Energy Audit Instruments used

a) **Power Quality Analyser HIOKI – 3197**

Power Quality Analyzer measures all power parameters including voltage, current, power, harmonics, and flicker simultaneously along the same time axis, giving it the ability to capture all power anomalies such as intermittent power interruptions, voltage drops and frequency fluctuations while recording the power trend.

3-Phase 4-Wire Portable Power Quality Analyzer to Detect, Measure and Record Power Quality Issues, Harmonics, Demand, Inrush and Power Transients

b) **Thermal Imager Fluke – PTI 120**

An infrared camera (also known as a thermal imager) detects and measures the infrared energy of objects. The camera converts that infrared data into an electronic image that shows the apparent surface temperature of the object being measured

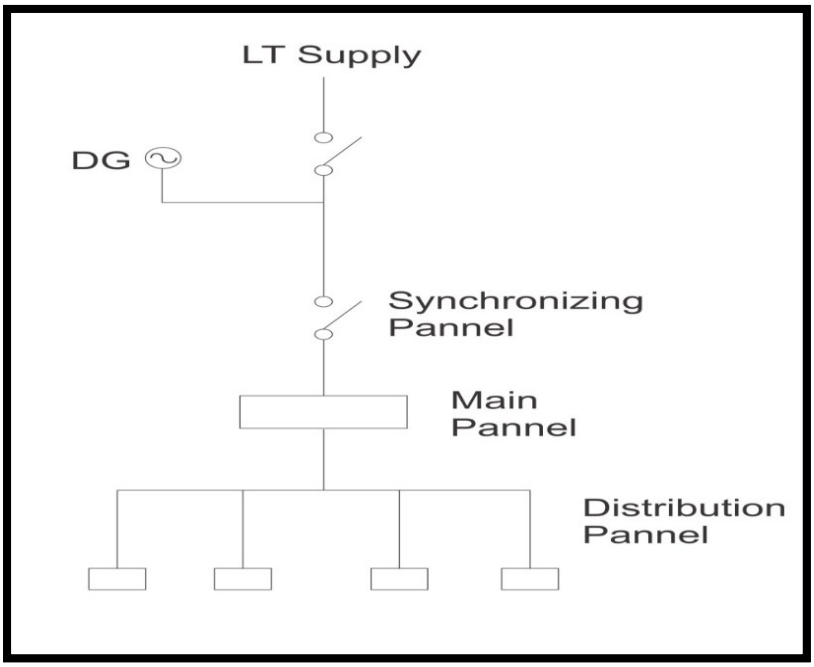
Thermographic camera to locate these hot spots in electrical panels and wiring. The heated electrical components appear as bright spots on a thermogram of the electrical panel.

c) **CLAMP - ON EARTH / GROUND RESISTANCE TESTER**

Chapter: 4. Study of Electrical Systems

Electrical Energy Sources:

1. MSEDCL. Feeder Voltage 11 KV HT supply
2. Diesel Generator



Observations:

1. Single line electrical network diagram is not available.
2. Units generated (KWH) from Diesel Generator record not available.

Suggestions: DG generation records Keep logbook –KWH/month.

MSEDCL HT supply:

Mahavitaran has been installed Energy meter in MSBECL Campus.

The electrical bills from MSEDCL for 12 months from April 2021 to March 2022 have been studied. The details of meter are as under

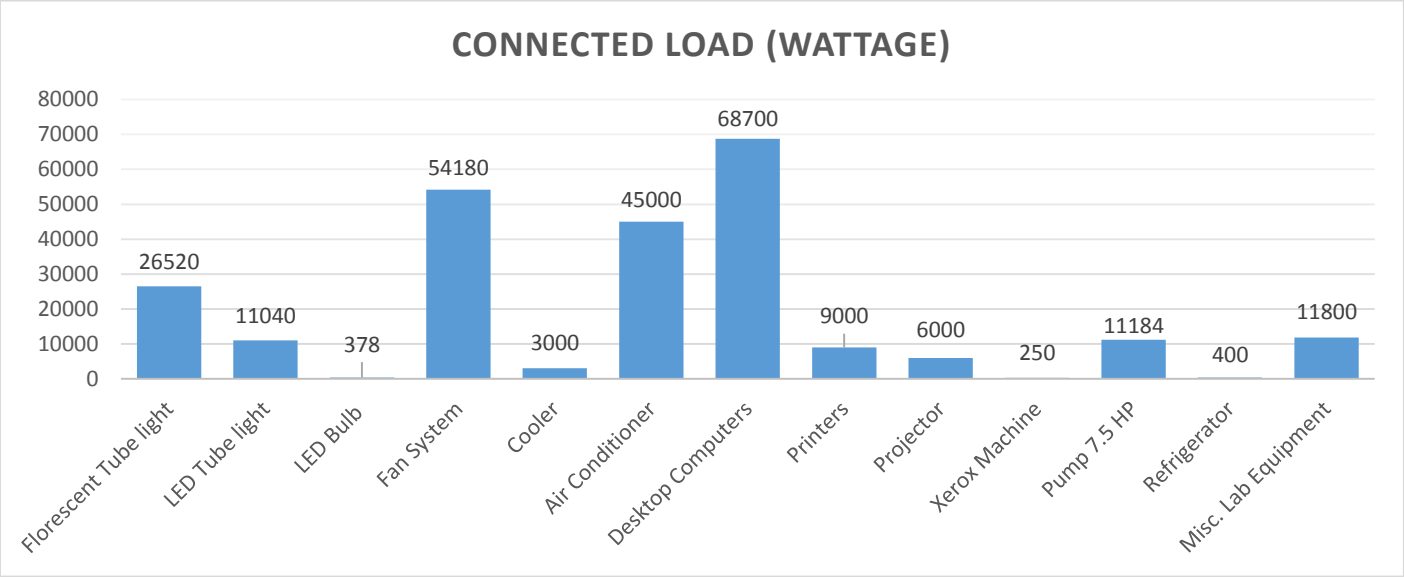
SN	Details of Electricity Demand	Tariff	146 HT-VIII B
	Consumer No.	**610609001928**	
1	Sanctioned Load	**300**	KW
2	Contract Demand	**83**	kVA
3	Recorded Maximum Demand	**57**	kVA

Chapter: 5 Study of Connected Load

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 / Mechanical Workshop Equipment etc.

Major Energy use and Areas

Sr.	Name of Appliance	watt	Qty.	Total Watt
1	Florescent Tube light	40	663	26520
2	LED Tube light	20	552	11040
3	LED Bulb	7	54	378
4	Fan System	75	774	58050
5	Table Fan	60	1	60
6	Cooler	150	20	3000
7	Air Conditioner	1500	13	45000
8	Desktop Computers	150	458	68700
9	Printers	250	36	9000
10	Projector	300	20	6000
11	Xerox Machine	250	1	250
12	Scanner	5	1	5
13	Pump 7.5 HP	5592	2	11184
14	Refrigerator	400	1	400
15	Misc. Lab Equipment			11800



Observations:

Fan System contributes 54180 watts / Fluorescent Tube contributes 26520 Watts

Suggestions: Install Energy Efficient BLDC Fan system & LED Tube lights

Chapter: 6 Study of Power Quality Supply to MSBECL

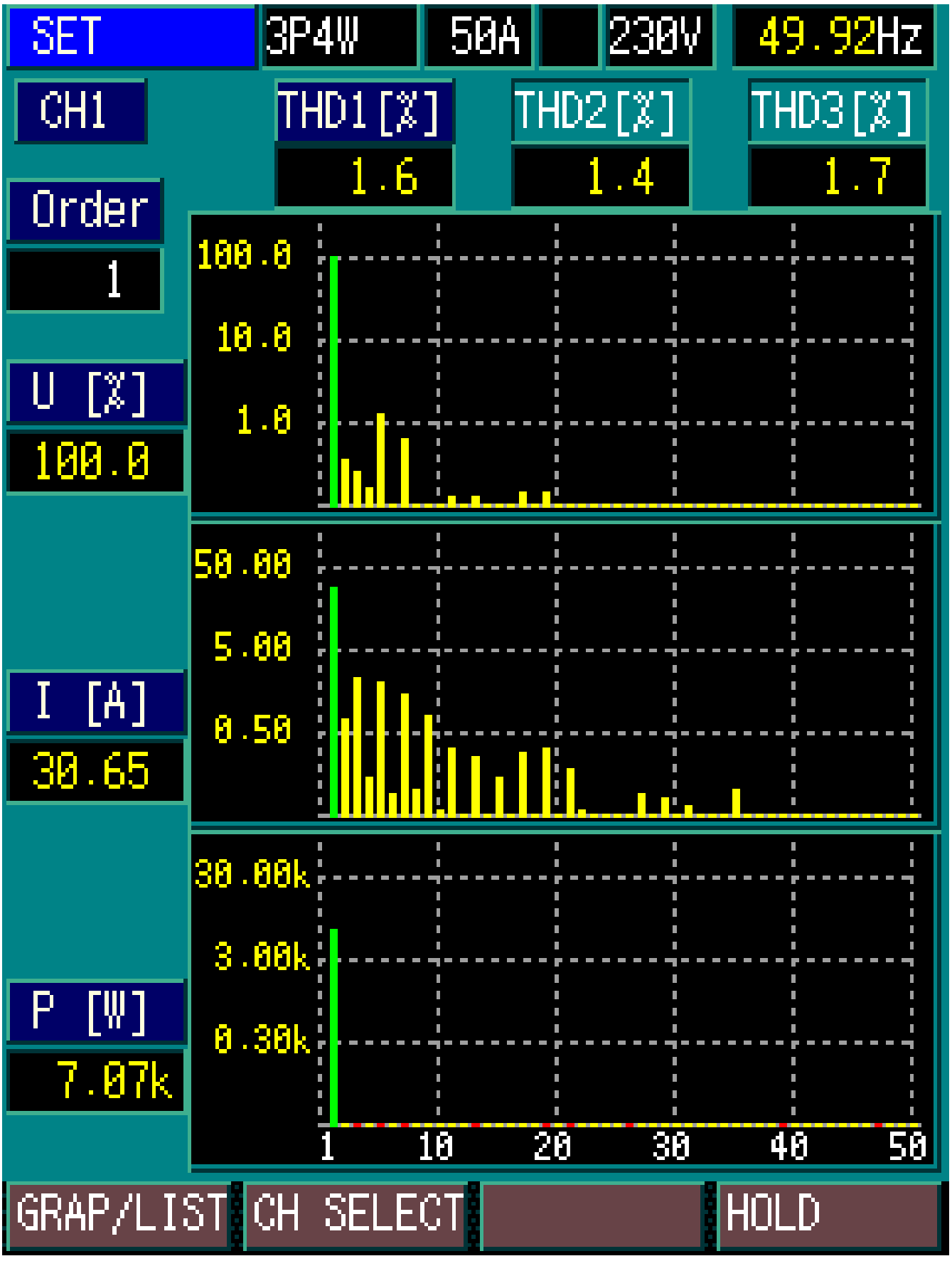
Power quality issues can affect the operation of critical loads and can have the negative impact on operation. This power quality analyser can monitor the cost of energy wasted due to poor power quality. The wider range of measurement function and measurement method in this analyser is the ideal tool and for the calculation of errors.

1. Supply Voltage level Overview

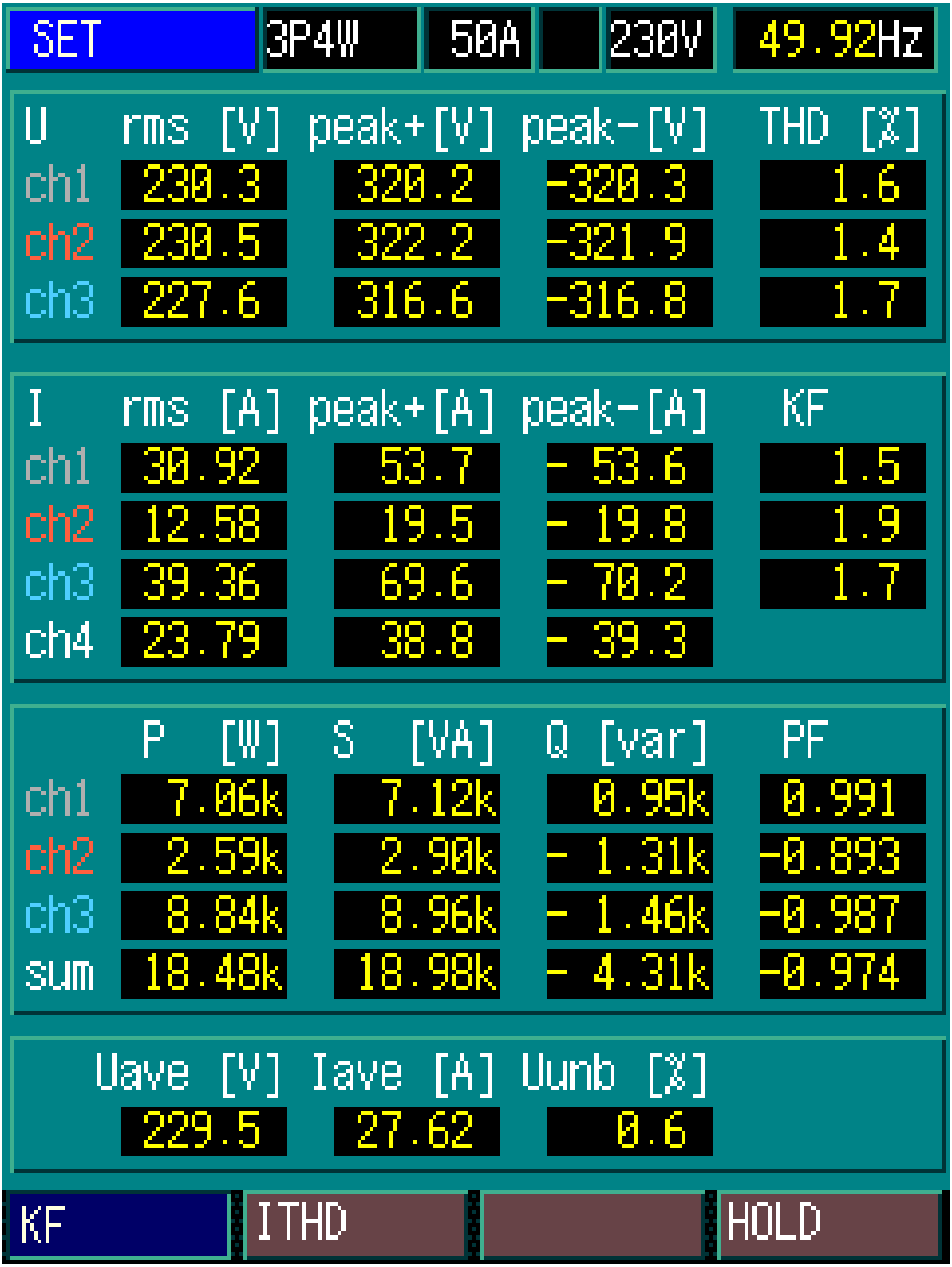
Observations: Found Poor Power Quality Supply.

Suggestions: Improve Power Quality install Voltage Stabilizer of 100 kva capacity

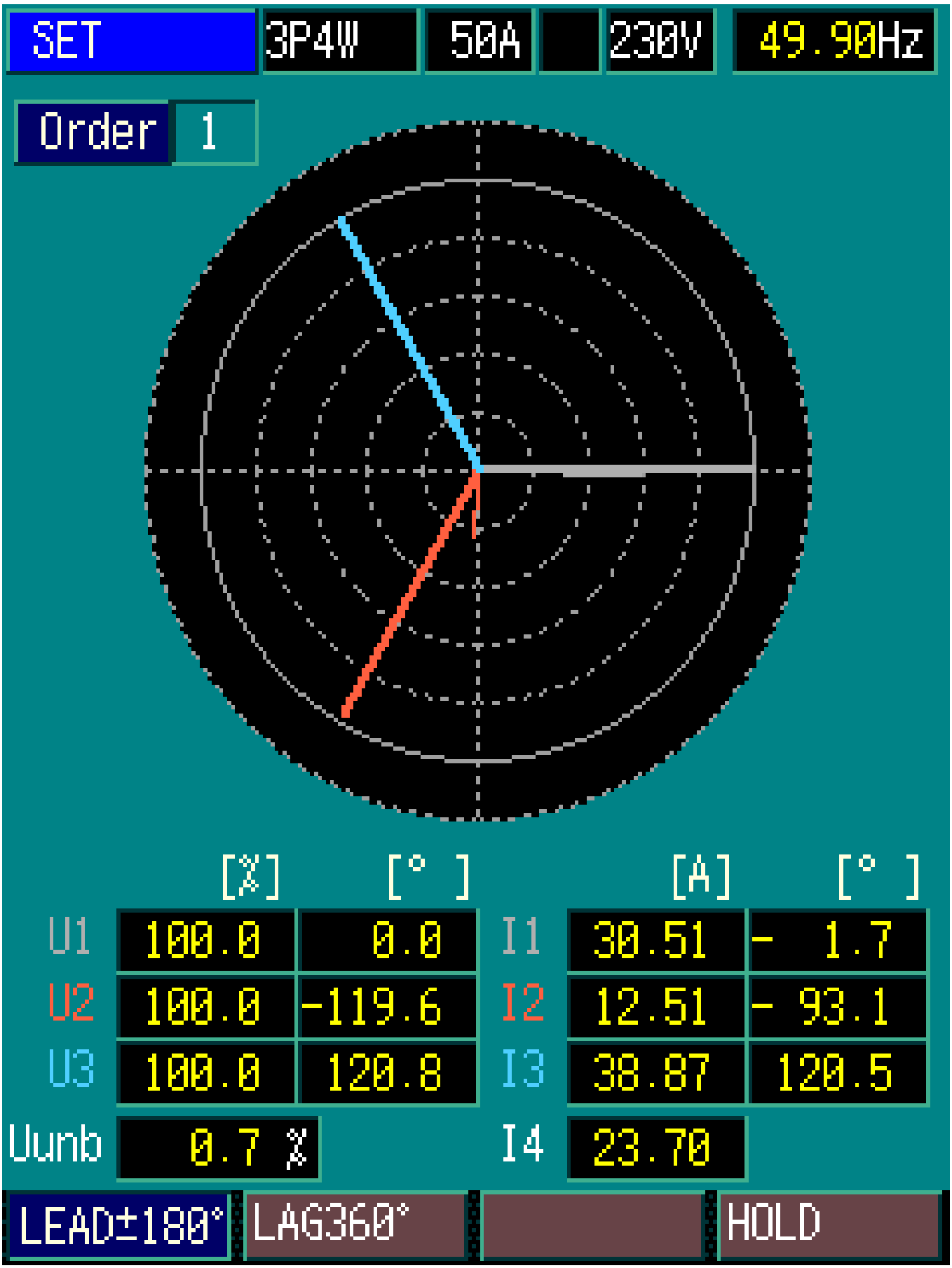
2. Harmonics


SET
3P4W
50A
230V
49.92Hz
CH1
THD1 [%]
1.6
THD2 [%]
1.4
THD3 [%]
1.7
Order
1
U [%]
100.0
100.0
10.0
1.0
I [A]
30.65
50.00
5.00
0.50
P [W]
7.07k
30.00k
3.00k
0.30k
1
10
20
30
40
50
GRAP/LIST
CH SELECT
HOLD

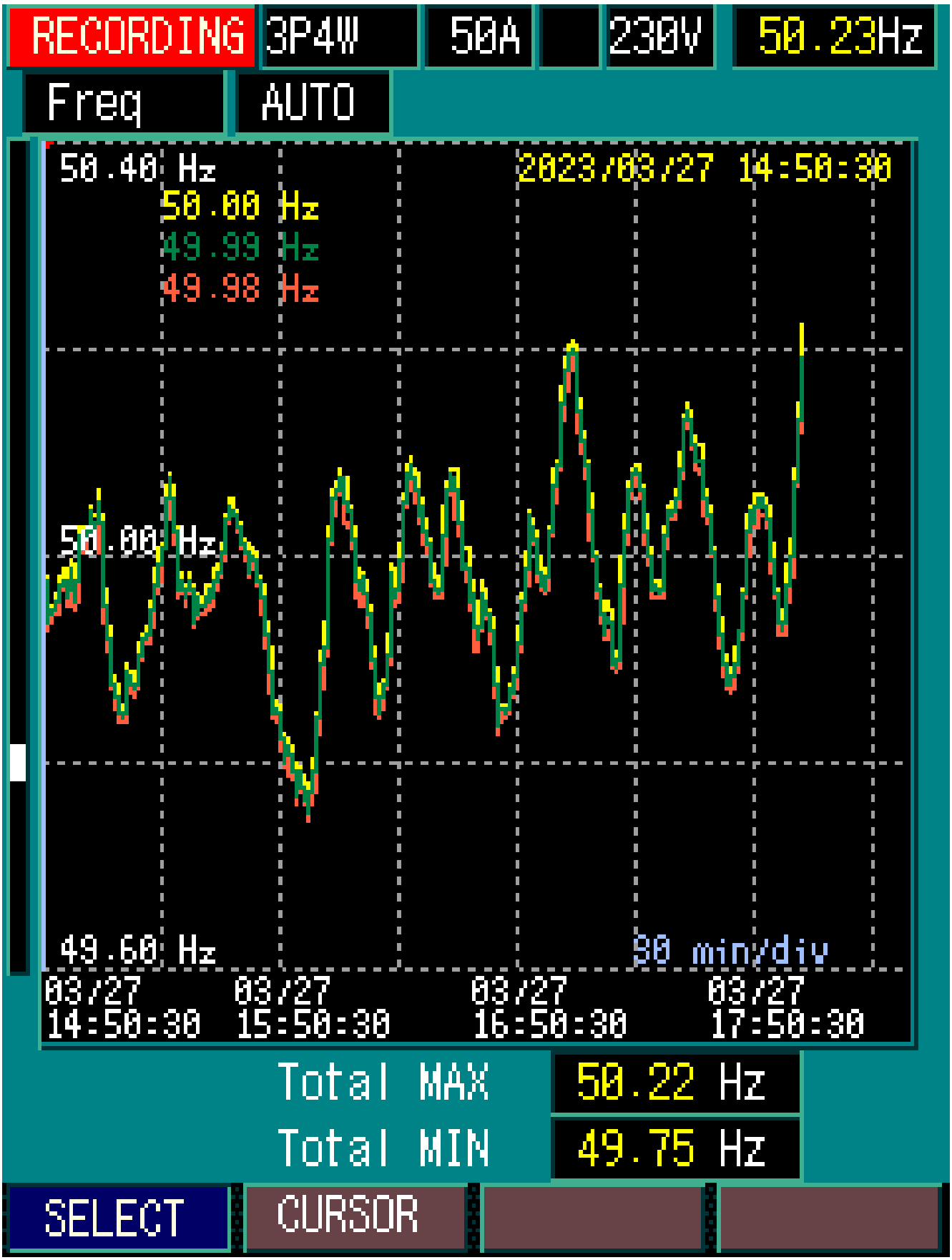
3. DMM


SET
3P4W
50A
230V
49.92Hz
U rms [V] peak+[V] peak-[V] THD [%]
ch1 230.3 320.2 -320.3 1.6
ch2 230.5 322.2 -321.9 1.4
ch3 227.6 316.6 -316.8 1.7
I rms [A] peak+[A] peak-[A] KF
ch1 30.92 53.7 - 53.6 1.5
ch2 12.58 19.5 - 19.8 1.9
ch3 39.36 69.6 - 70.2 1.7
ch4 23.79 38.8 - 39.3
P [W] S [VA] Q [var] PF
ch1 7.06k 7.12k 0.95k 0.991
ch2 2.59k 2.90k - 1.31k -0.893
ch3 8.84k 8.96k - 1.46k -0.987
sum 18.48k 18.98k - 4.31k -0.974
Uave [V] Iave [A] Uunb [%]
229.5 27.62 0.6
KF
ITHD
HOLD

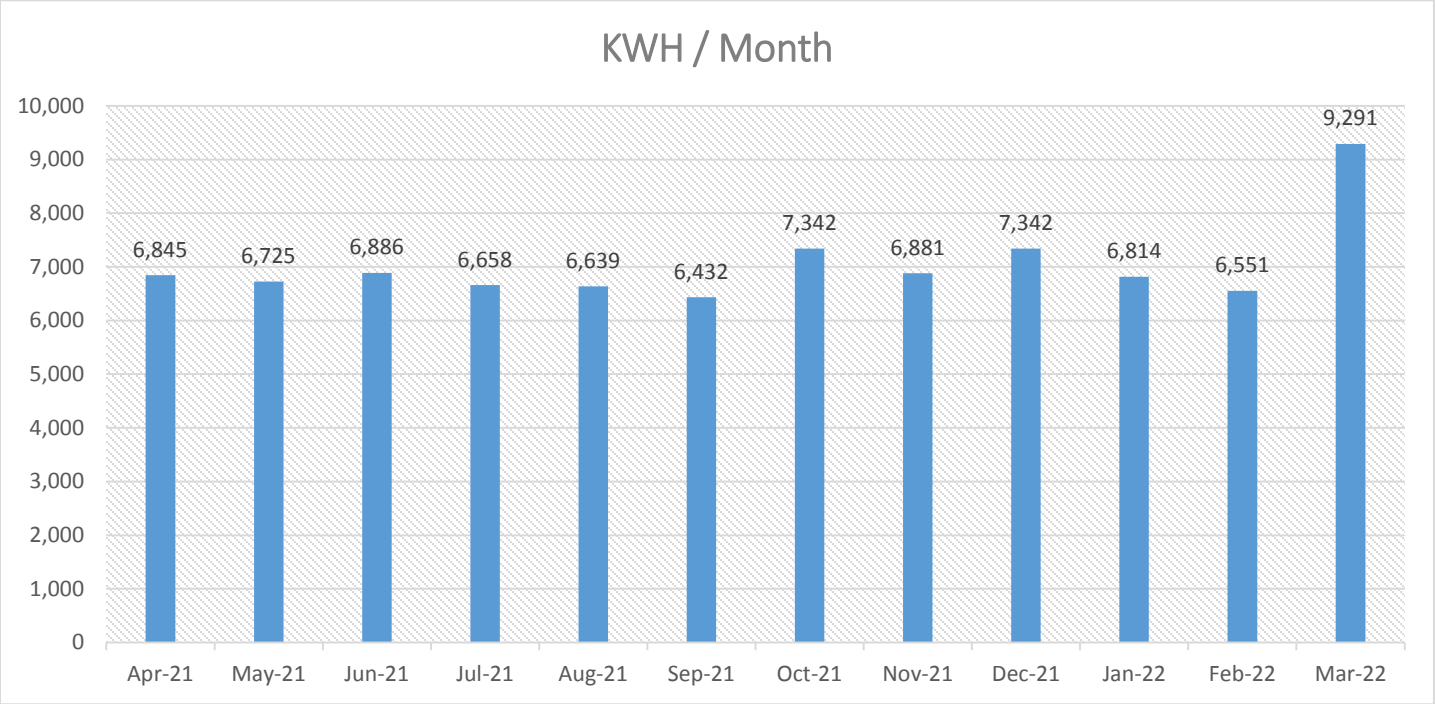
4. Vector


SET
3P4W
50A
230V
49.90Hz
Order
1
[%]
[°]
[A]
[°]
U1
100.0
0.0
I1
30.51
- 1.7
U2
100.0
-119.6
I2
12.51
- 93.1
U3
100.0
120.8
I3
38.87
120.5
Uunb
0.7 %
I4
23.70
LEAD±180°
LAG360°
HOLD

5. RMS

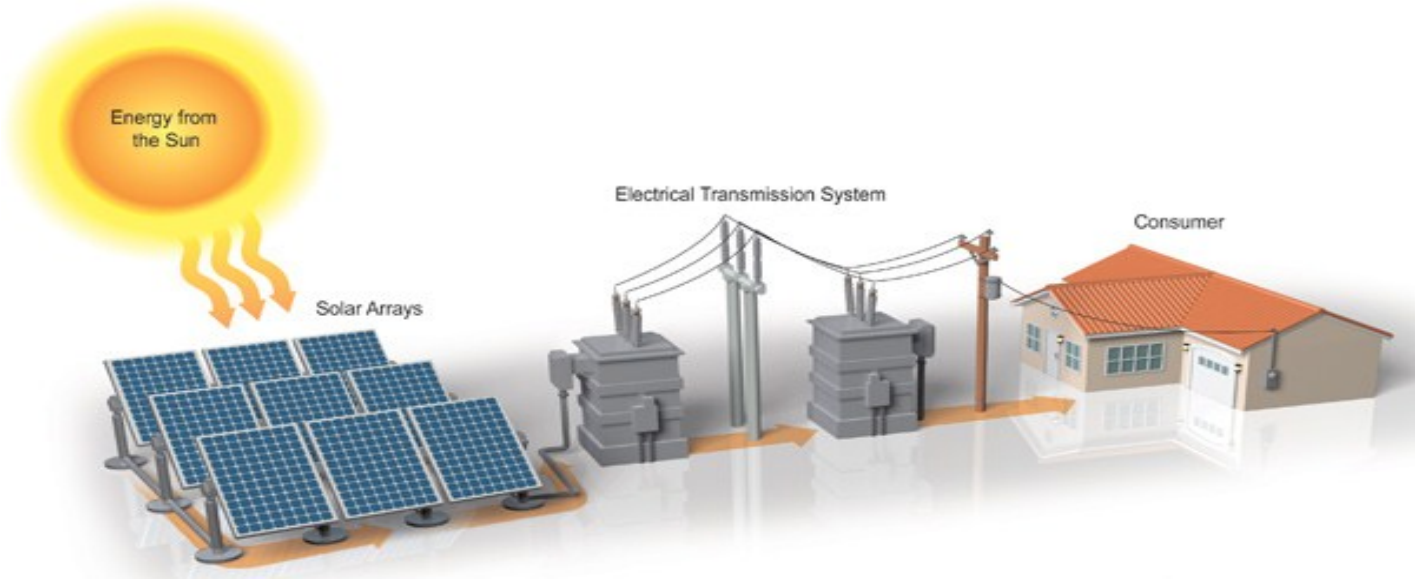

RECORDING
3P4W
50A
230V
50.23Hz
Freq
AUTO
50.40 Hz
2023/03/27 14:50:30
50.00 Hz
49.99 Hz
49.98 Hz
50.00 Hz
49.60 Hz
90 min/div
03/27 14:50:30
03/27 15:50:30
03/27 16:50:30
03/27 17:50:30
Total MAX
50.22 Hz
Total MIN
49.75 Hz
SELECT
CURSOR

Chapter: 7 Study of Annual Power requirements



Annual Power Requirement from Mahavitran	84406	KWH/Year

Observations: Import from Mahavitran Current year data is **84406** Units / Year
Suggestion: Install 75 KW On Grid Roof Top Solar Power Plant



Chapter: 8 Study of Electrical Demand

Every electrical system needs power as the supply. Power is rated at each and amount of energy is used to accomplish the work. Electrical power is measured in kwhr which is determine by V*I. In the Buildings high power consumption than the contracted one can lead to severe penalties. Often there are power peak produce by the load co incidence that normally do not work in simultaneously. In order to avoid penalties one solution would be increase in the contracted power according to the maximum resister peak but on contract this will force to pay higher power than it is really needed. Another solution will be avoiding the consumption peaks through a vigilance element that a device of the risk situation or it can disconnect certain noncritical load such as air conditioning compressors lighting and fans. Maximum demand refers to the maximum amount of electrical energy that is being consumed at a given time. The general purpose of maximum demand meter is to monitor and control the maximum power demand in order also can reduced the monthly electricity bill. By using the meter, the user do not have to worry that their electricity bill will increase thus have to pay lot of money on bills. Maximum power demand meter can benefit every user specially Buildings.

General Observations based on Electricity Bill:

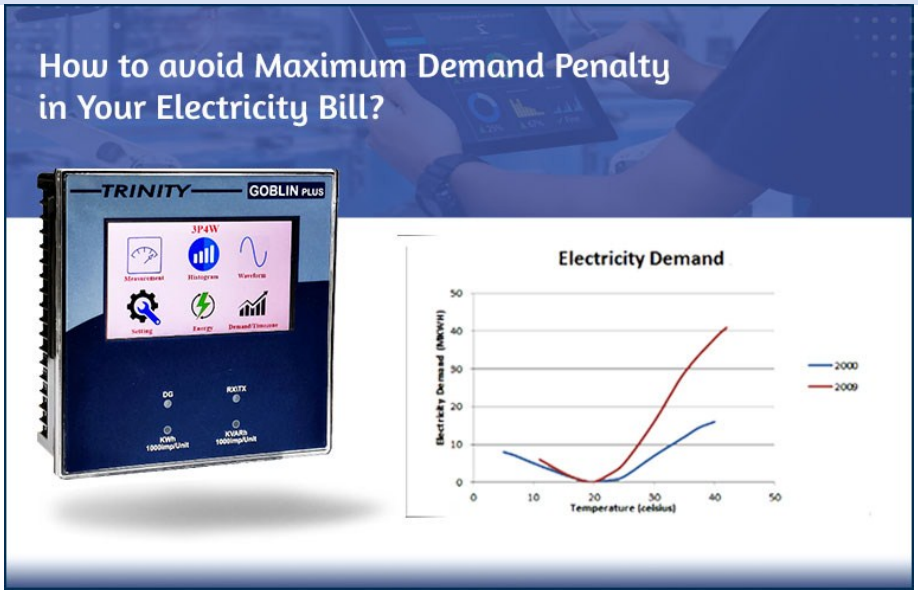
Observations: It is observe that- Contract Demand is **83 kVA**

Recorded MD	26	28	20	26	25	30	35	57	60	55	39
Month	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22

Due to Excess contract Demand unnecessarily Demand Charges Paid to Mahavitran

Suggestions:

Install Demand Controller

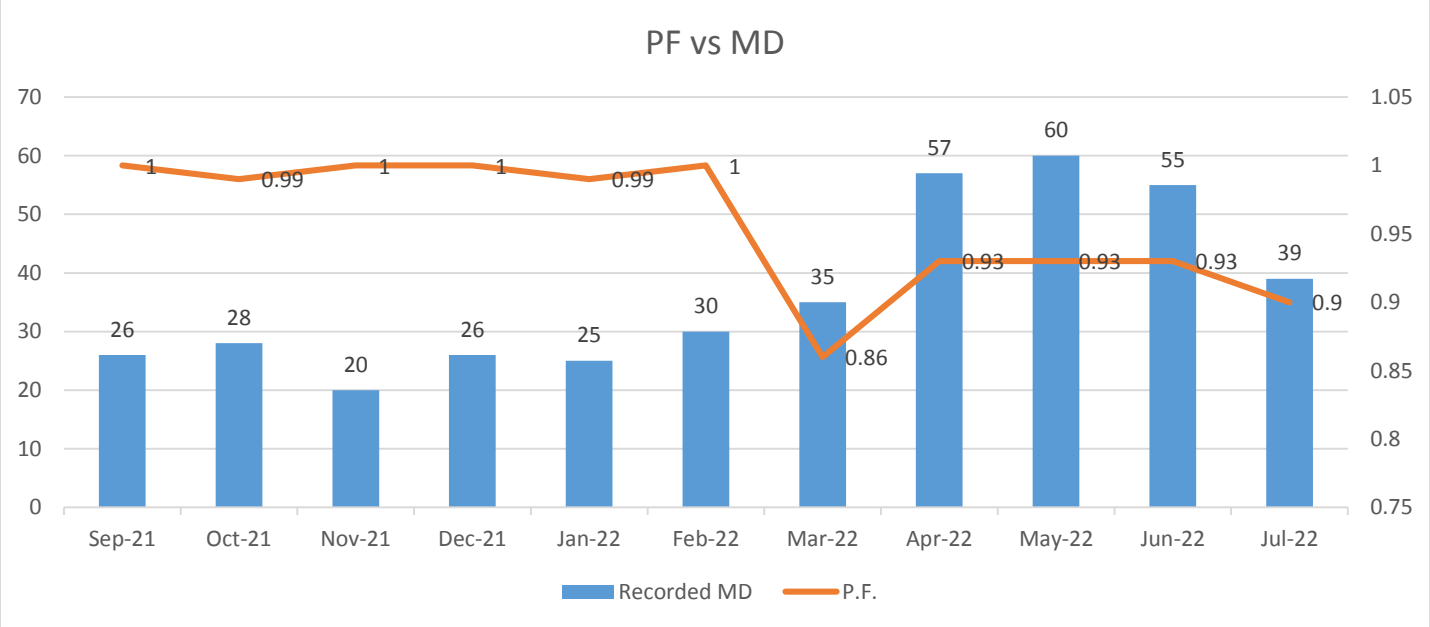


Demand Controller for Energy Management

Chapter: 9 Study of Power Factor

Power Factor (P.F.): A good Power Factor provides a better voltage. Reducing the pressure on electrical distribution network. Reducing cable heating, cable over loading and cable losses. Reducing over loadings of control gears and switch-gears etc.

Energy Meter – Consumer Number 610609001928



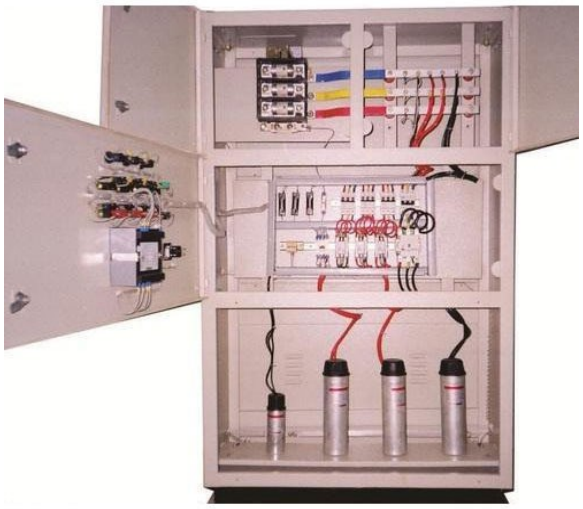
Observations:

Power factor found Very Poor in the Month of March 22 i.e. 0.86

Suggestions: Improve Power Factor up to 0.99 or UNITY.

To maintain Unity Power Factor install APFC.

Hence we have to more focus on power factor correction/improvement using capacitor bank i.e. APFC panel.



Chapter: 10 Study of Month wise Load Factor

Electrical Load factor is a measure of the utilization rate, or efficiency of electrical energy usage. It is the ratio of total energy (KWh) used in the billing period divided by the Possible total energy used within the period, if used at the peak demand (KW) during the entire period.

$$Load\ Factor\ (Monthly) = \frac{Total\ kWh\ throughout\ the\ Month}{Peak\ Load\ in\ kW \times 720Hr}$$

Thus,

If your load factor ratio is above 0.75 electrical usage is reasonably efficient.

If the load factor is below 0.5, you have periods of very high usage (demand) and a low utilization rate. Low load factor customers would benefit from a peak demand control system or from a Battery Energy Storage System to distribute electrical usage out over longer intervals of time and smooth peaks.

Low load factors, such as below 0.4, contribute significantly to the overall monthly electric bill in the form of demand charges. These demand charges are listed on the bill as coincident demand, facilities demand, and summer time related demand.

Month wise Load Factor Variation

Month	Load Factor
Sep-21	0.34
Oct-21	0.36
Nov-21	0.47
Dec-21	0.39
Jan-22	0.37
Feb-22	0.3
Mar-22	0.33
Apr-22	0.28
May-22	0.31
Jun-22	0.3
Jul-22	0.37

Observations: load factor is below 0.5

Suggestions: Improve Load Factor above 0.75

Chapter: 11 Performance Evaluation

a) Fan System: Total number of fans used in the campus = 774 Nos. @200 days Working 6 Hrs.

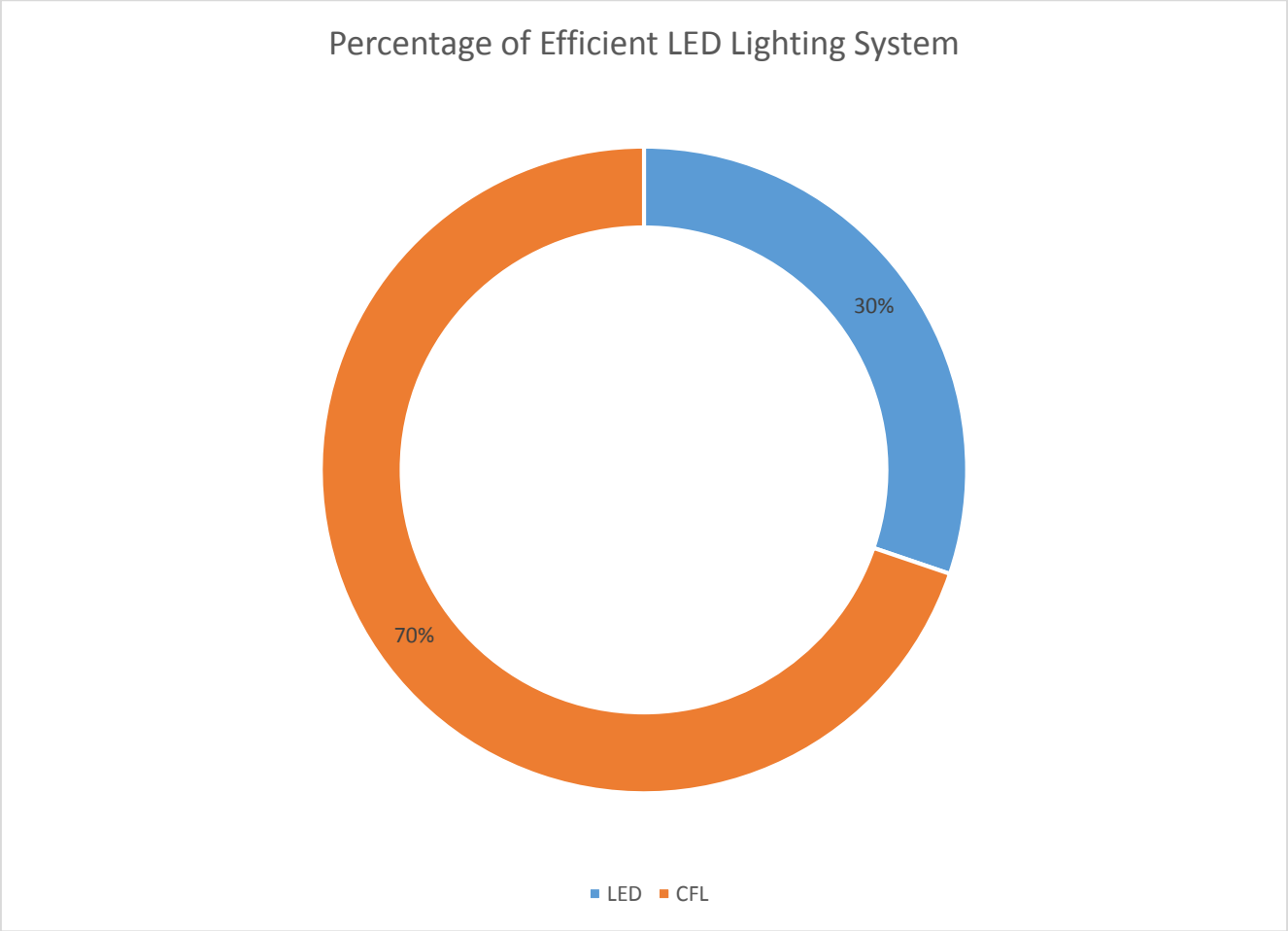
- Number of fans to be replace = 774Nos.
- The Total Current Consumption =65000 kWh
- The Expected fan Consumption =26000 kWh
- Expected Saving per year = 39000 kWh/year

Suggestions: Replace existing Inefficient Fan System (70W) with Five Star BLDC (28W)

b) Lighting System:

1. Percentage of use Energy Efficient LED Lighting:

Type	Wattage
LED Lights Connected Load	11480
Florescent Tube / Bulb Connected Load	26520
Total Lighting Load	**38000**



Observations:

Percentage of Annual Power requirements met through LED Bulb/Tube is 30%

Suggestions: Replace Inefficient 70% lighting with Efficient LED Lighting

2. Existing Tube lights are installed mostly without reflectors.

Observations: Measured & found very low insufficient i.e. 200 lux For general office tasks, a minimum illuminance level of 300 lux is suggested.

Suggestions:

Improve effectiveness of Lighting System as per BEE Guidelines

Activity	Illumination *(lux, lumen/m^2)*
Public areas with dark surroundings	20 - 50
Simple orientation for short visits	50 - 100
Working areas where visual tasks are only occasionally performed	100 - 150
Warehouses, Homes, Theaters, Archives	150
Easy Office Work, Classes	250
Normal Office Work, PC Work, Study Library, Groceries, Show Rooms, Laboratories	500
Supermarkets, Mechanical Workshops, Office Landscapes	750
Normal Drawing Work, Detailed Mechanical Workshops, Operation Theatres	1,000
Detailed Drawing Work, Very Detailed Mechanical Works	1500 - 2000
Performance of visual tasks of low contrast and very small size for prolonged periods of time	2000 - 5000
Performance of very prolonged and exacting visual tasks	5000 - 10000
Performance of very special visual tasks of extremely low contrast and small size	10000 - 20000

Chapter: 12 General Recommendations

-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).

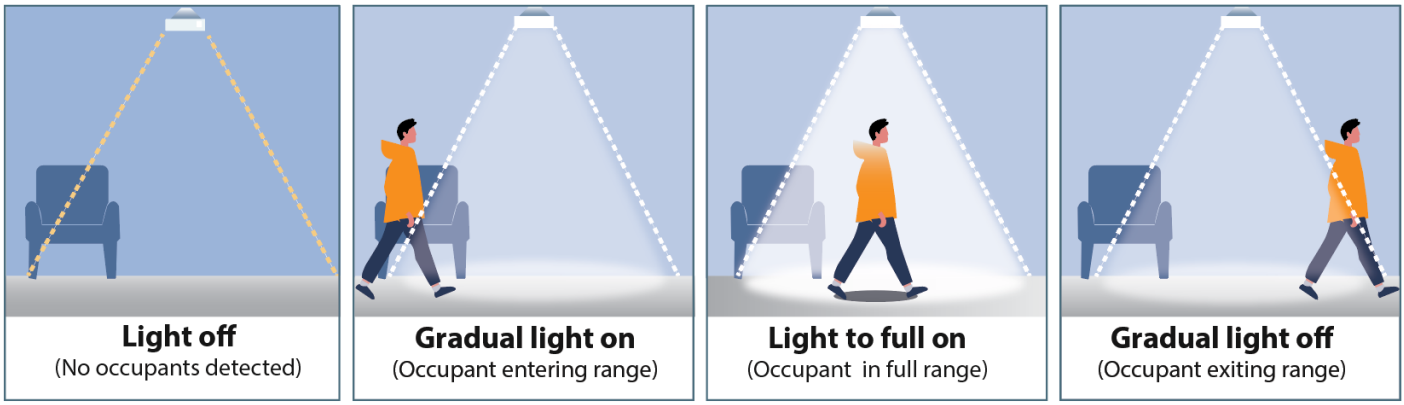
Silver Reflectors. This is the reflector that reflects the most light.

White Reflectors. More flexible between indoor and outdoor use.

1. Gold Reflectors 2. Black Reflectors 3. White Reflectors

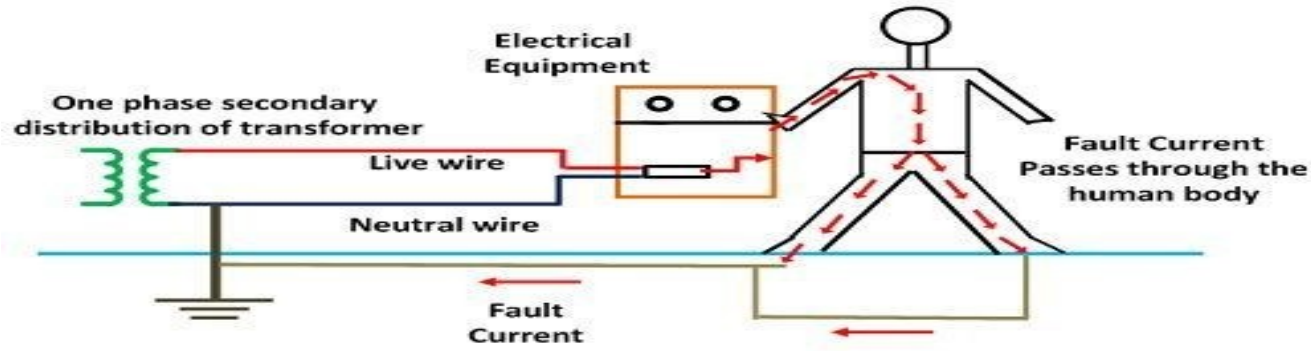
Proposed:-

- **Use motion sensors:** In places where lights are necessary but are not used continuously.



Chapter: 13 Electrical Safety

1. **Earth Resistance Test :** Ideally a ground should be of zero ohms resistance. There is not one standard ground resistance threshold that is recognized by all agencies. However, the NFPA and IEEE have recommended a ground resistance value of 5.0 ohms or less.



Electrical System Without Earthing Circuit Globe

Observations:

Earth resistance Found Higher i.e. 10.4 Ohm

Recommendations:

Recommended a ground resistance value of 5.0 ohms or less. The use of chemical elements around the electrode of earthing systems reduces the earth resistance which improves the efficiency of these systems.

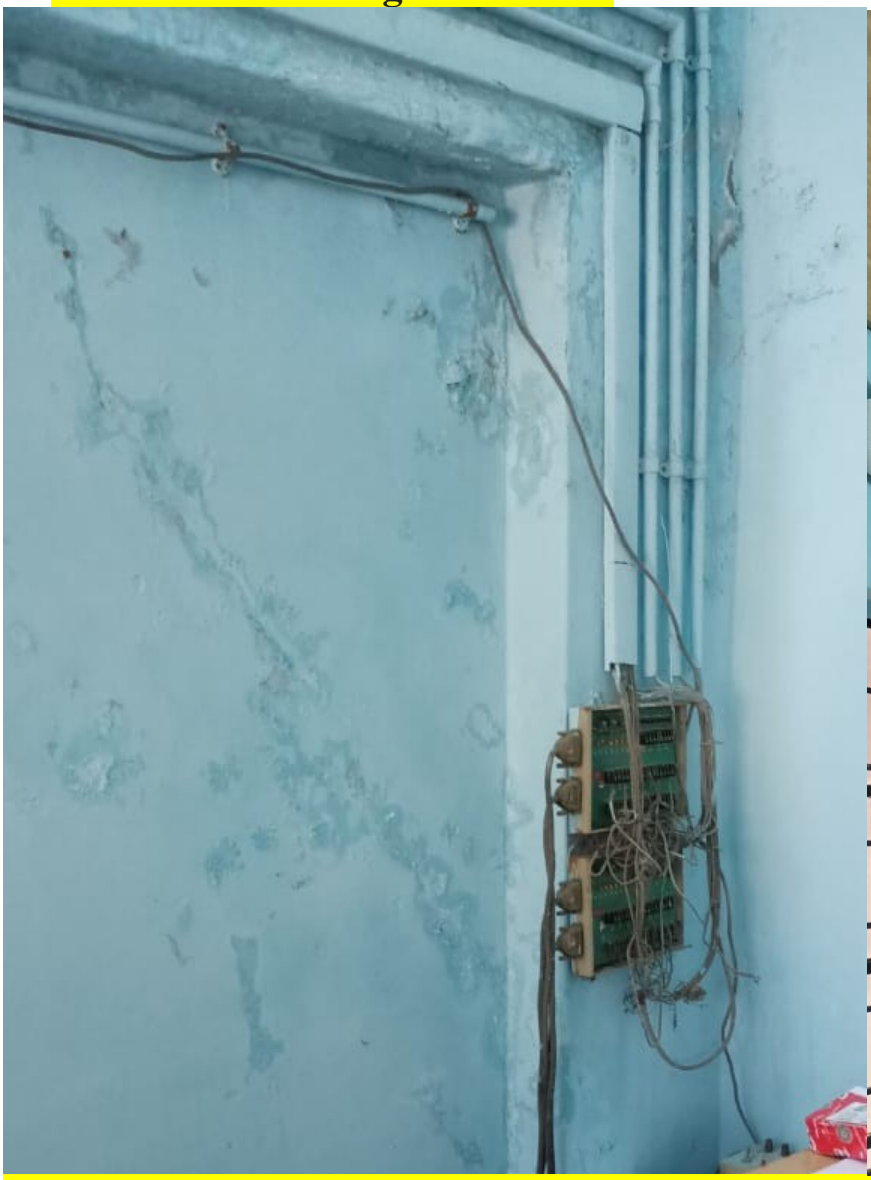
2. Thermography :

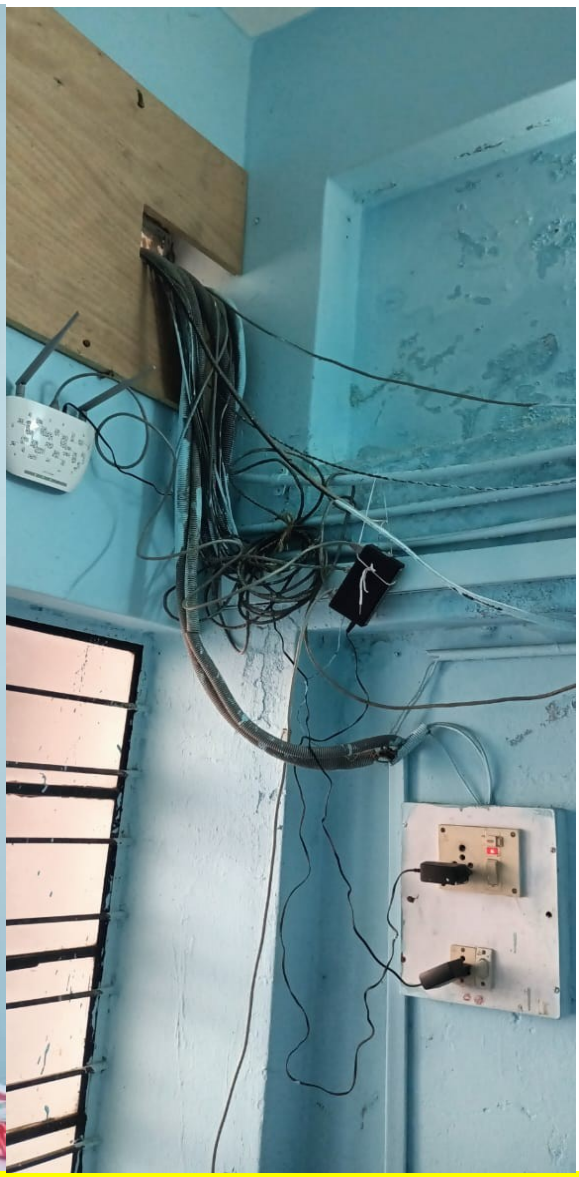
Existing Condition: Electrical Panel Board

Equipment	**Main Panel Board**	Equipment Name:	**Distribution Cables**	
Ambient Air Temp:		Wind Speed		
Load (%)		Max Rated Load:		
Exception Temperature:		Potential Problem		
Recommended Action		Repair Priority:		
Emissivity:	0.95	Reflected Temperature:	131.0 °F	
Camera Manufacturer	Fluke	Camera:	PTi120HT-21120397	

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.

3. Electrical Wring in Offices :





Observations: Found Inadequate Wiring and Overloaded Circuits using wires of inappropriate size for the current can cause overheating and fires to occur. Use the correct wire suitable for the operation and the electrical load to work on. Use the correct extension cord designed for heavy-duty use. Also, do not overload an outlet and use proper circuit breakers.

Suggestions:

Perform regular fire risk assessments to identify areas at risk of bad wiring and circuits.

Electrical Safety measures need to review!

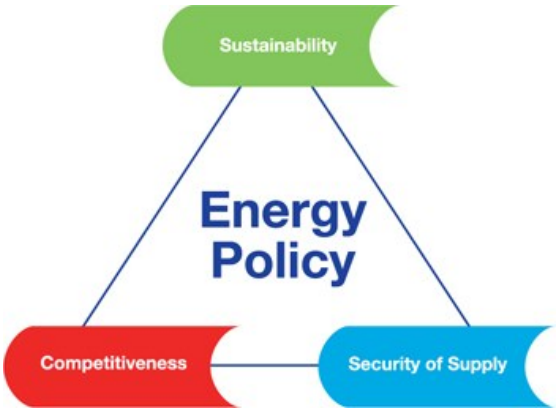
-Install Safety Distribution Panel board.

-Install Sign Boards. Prohibition, Warning, Mandatory and Emergency.

These 4 important safety signs can be broken into categories:

Chapter: 14 Executive **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. **MOU with Experts for Energy Conservation Project.** Energy auditing inside the campus has to be done on a regular basis and report should be made public to generate awareness.

3. **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 ½ an hour before leaving workplace.

4. Establish Energy Conservation Park

District level Energy Park is a Public Park for Education + Entertainment =Edutainment.

Objectives for establishing the park are:

- To impart awareness to the public, students, visitors, and beneficiaries about the use of renewable energy, its advantages, and its relation to the environment.
- Demonstrate the technology of various renewable energy devices to educate people on the subject.
- To provide a recreational center integrated with renewable energy education.
- To provide a forum for children to experiment with renewable energy devices.
- To fulfill the partial energy requirement of the park from renewable energy sources.

Educational models of solar energy, Hydel energy and Biogas energy projects etc. which provide information about their basic concepts to these young minds.

Install Electric Vehicle Solar Charging Stations, EV Chargers

Revenue Projections to the institute from a Typical Public Charging Station.

5.Apply for ECBC :

The Energy Conservation Building Code (ECBC) was developed by the BEE Govt. of India. ECBC sets minimum energy standards for commercial buildings having a connected load of 100kW or contract demand of 120 KVA and above.

While the Central Government has powers under the EC Act 2001, the state governments have the flexibility to modify the code to suit local or regional needs and notify them. Presently, the code is in voluntary phase of implementation. About 22 states are at various stages of mandating ECBC, wherein most of building construction activities are happening across the country.

ECBC scope for the Existing MSBECL Institute Building:

In existing MSBECL building we could save up to 30 percent of electricity by applying ECBC code. For this we could do retrofitting in the existing building and can make building close to ECBC compliant building.

Energy Audit Studies have revealed a savings potential to the extent of 40% in end use such as lighting, cooling, ventilation, refrigeration etc. In order to address this institutional barrier, the Bureau of Energy Efficiency has taken up the task of institutionalizing energy efficiency services, and of promoting energy efficiency delivery mechanisms.

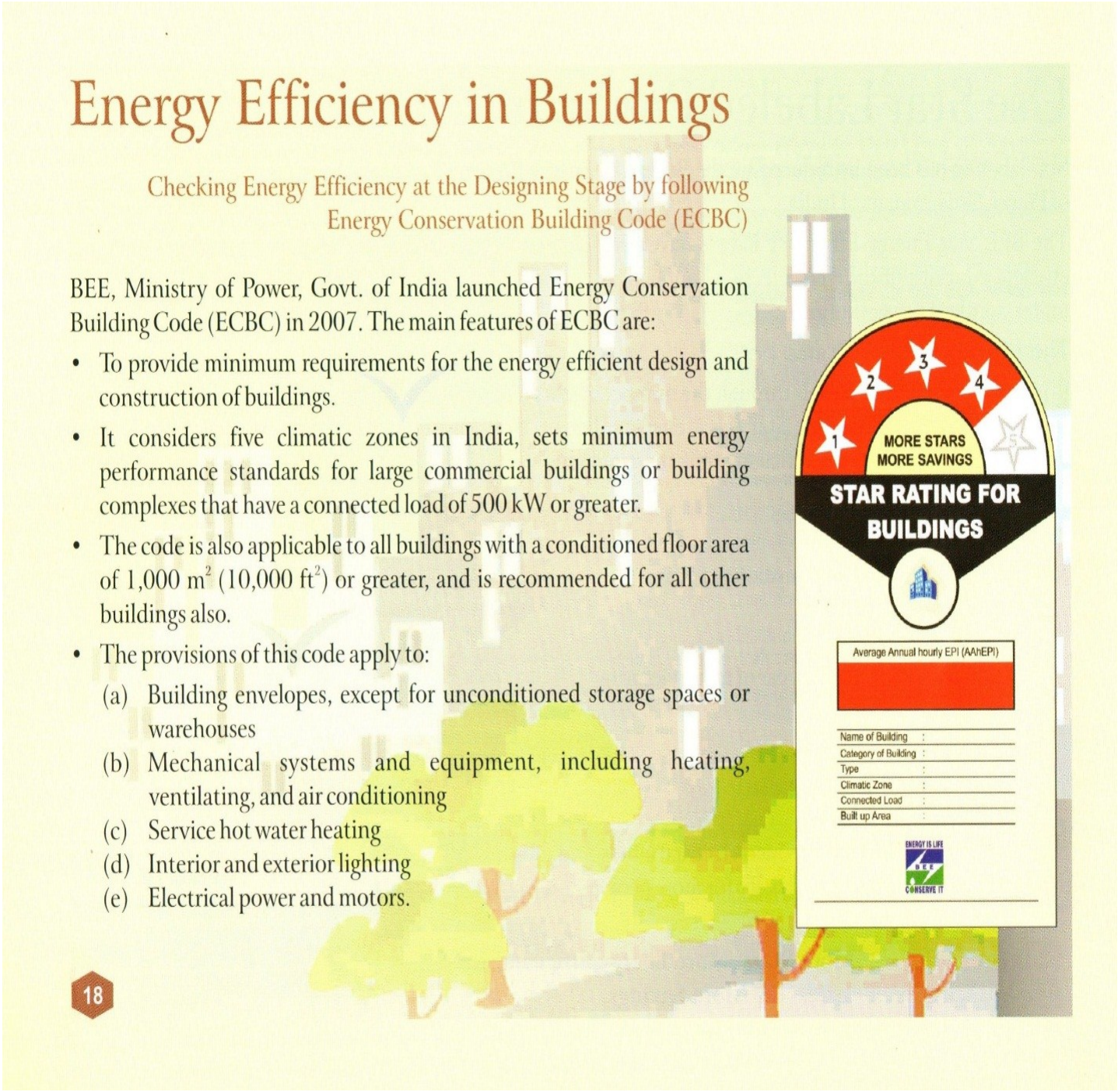
Complementing the efforts of the government of India, the ECBC has been integrated in other rating & compliance systems being followed in the country such as EIA (Environmental Impact Assessment) for large area development under MoEF (Ministry of Environment & Forest), Green Rating for Integrated Habitat Assessment (GRIHA) rating system of ADARSH **and** Leadership in Energy & Environmental Design (LEED) rating system of **the** Indian Green Building Council (IGBC)**.**

Chapter: 15 Conclusion:

A total Investment of Rs. 19.85/- Lakhs amount is estimated for the energy efficiency improvement projects.

Energy Savings expected around **67300** KWH/year.

Existing Annual Electrical Units Consumption from April 21 to March 2022 is 84406 KWH. If all the Efficiency projects with renewable energy project are implemented and actions are taken then there will be opportunity to reduce electricity consumption Bill up to ZERO.



प्रतिज्ञा

हम सत्यनिष्ठा से प्रतिज्ञा करते हैं कि अपने सभी कार्यों में पेट्रोलियम उत्पादों के संरक्षण हेतु सतत् प्रयासरत रहेंगे, ताकि देश की प्रगति के लिए आवश्यक ये दुर्लभ संसाधन दीर्घकाल तक टिके रहें। आदर्श नागरिक होने के नाते हम अधिकाधिक लोगों को तेल एवं गैस संरक्षण के प्रति सजग करेंगे ताकि पेट्रोलियम पदार्थों के दुरुपयोग से बचा जा सके।