SDG - 7 Affordable and Clean Energy

7.2.5 - Energy Inspection/Audit to Identify Areas of Energy Wastage

The University ensures a comprehensive and systematic approach to energy management and safety through regular inspections and audits. An Annual Energy Inspection is carried out by the Chief Electrical Inspectorate, Government of Tamil Nadu, focusing on evaluating safety standards and the reliability of the electrical supply system across the campus. During this inspection, any defects, non-conformities, or potential safety hazards identified by the inspection team are formally reported to the Institution. The University treats these findings with utmost priority, ensuring that all recommended corrective actions are promptly implemented to maintain compliance and operational safety.

Annual Energy Inspection for measures relating to safety and electrical supply is being conducted by Chief Electrical Inspectorate, Govt of Tamil Nadu. The defects identified by the team will be notified to the Institution for rectification on priority.

Apart from this inspection, Energy Audit by Professional External Agency is being conducted periodically to arrive at strategy for minimizing the waste of energy.

Based on such audits the areas where energy may be conserved have been identified as follows:

1. Replacement of Conventional Tube Lights with LED Tube Lights:

The existing fluorescent tube lights with electromagnetic chokes shall be replaced with energy-efficient LED tube lights. This will significantly reduce power consumption, enhance illumination quality, and extend the service life of the lighting system. LEDs also reduce maintenance costs and improve the overall power factor due to lower reactive power demand.

2. **Upgradation of Street Lighting from Sodium Vapour Lamps to LED Lights:**

All sodium vapour street lights on campus shall be systematically replaced with LED street lights. LED luminaires offer better luminosity, uniform light distribution, instant start, and lower power consumption. They also enhance safety and visibility on campus while cutting down energy usage by nearly 50%.

3. Installation of Capacitor Banks for Motors and Pumps:

Motors and pumps across water supply, HVAC, and sewage systems will be equipped with automatic power factor correction (APFC) capacitor banks. This helps maintain unity power factor, reduce reactive power draw, improve voltage regulation, and minimize overall power

losses in the distribution system.

4. **Optimization of Air Conditioner Temperature Settings:**

Air conditioners in offices, laboratories, and residential areas shall be operated at a temperature setting between 22°C and 24°C. This optimal range ensures occupant comfort while minimizing the compressor's load, resulting in significant energy savings and increased equipment longevity.

5. **Use of Automatic Water Level Controllers in Sumps and Overhead Tanks:**

Automatic water level controllers shall be installed to regulate pump operations based on the actual water level in sumps and tanks. This prevents dry running of motors, minimizes wastage of water and electricity, and reduces manual intervention.

6. **Installation of Energy Monitoring and Management Systems (EMMS):**

Smart energy meters shall be installed in all academic blocks, hostels, administrative buildings, and STP plants. The collected data will be integrated into a centralized Energy Monitoring Dashboard for real-time tracking, analysis, and optimization of energy consumption trends. Periodic audits will be conducted based on this data.

7. Adoption of Motion Sensor-Based Lighting Systems:

To reduce wastage of electricity in low-occupancy areas such as corridors, restrooms, and staircases, motion-sensor-controlled LED lighting systems shall be implemented. These systems automatically turn lights on or off based on human presence, ensuring effective energy conservation.

8. Energy Conservation Awareness Programs:

Regular awareness campaigns, workshops, and competitions shall be conducted for students, faculty, and staff to promote sustainable practices. Training on efficient energy use, renewable energy adoption, and behavioral changes will be a part of the campus sustainability drive.

9. **Replacement of Conventional Fans with HVLS Fans in Auditoriums and Large Halls:**

High Volume Low Speed (HVLS) fans shall replace traditional ceiling fans in large spaces such as auditoriums, dining halls, and gymnasiums. HVLS fans move large volumes of air at low speed, providing superior air circulation and reducing the dependency on air conditioners.

10. Balancing of Phase Currents in MV and SSB Panels:

Periodic checks shall be conducted to identify and correct phase current imbalances in Main and Sub Switch Boards. Maintaining load balance across phases helps in minimizing neutral losses, improving efficiency, and preventing overheating of electrical equipment.

11. **Regular Preventive Maintenance of Electrical Installations:**

Routine inspection and preventive maintenance of electrical panels, cables, and distribution boards shall be carried out to detect faults early, ensure operational safety, and maintain system efficiency.

12. Integration of Renewable Energy Sources:

Solar photovoltaic (PV) panels shall be installed on rooftops of academic and residential buildings to harness clean energy and offset grid power consumption. This initiative will move the institution toward achieving carbon neutrality.

13. Energy-Efficient Equipment Procurement Policy:

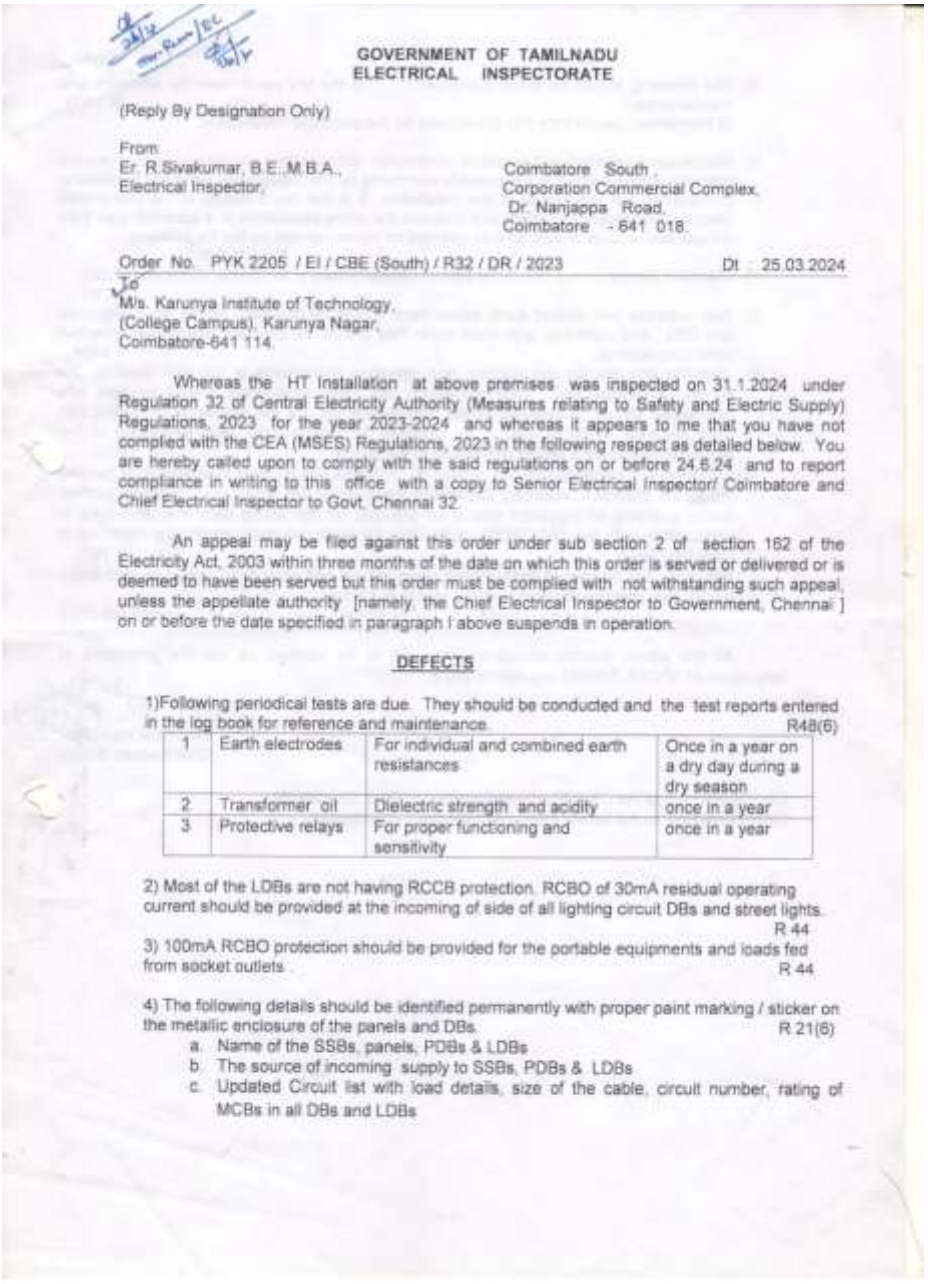
All future procurement of electrical appliances such as refrigerators, air conditioners, fans, and lighting systems shall comply with BEE 4-star or 5-star rating standards to ensure optimal energy performance.

14. Periodic Energy Audit:

A comprehensive energy audit shall be carried out annually by a certified agency to identify energy-saving opportunities, benchmark performance, and implement corrective actions for continual improvement.

Through these initiatives, the University demonstrates its strong commitment to energy efficiency, safety, and sustainable campus operations, aligning with its broader environmental and clean energy goals.

Energy Inspection Reports are given below:



GOVERNMENT OF TAMILNADU
ELECTRICAL INSPECTORATE

(Reply By Designation Only)

From
Er. R.Sivakumar, B.E.,M.B.A.,
Electrical Inspector,

Coimbatore South ,
Corporation Commercial Complex,
Dr. Nanjappa Road,
Coimbatore - 641 018.

Order No. PYK 2205 / EI / CBE (South) / R32 / DR / 2023 Dt : 25.03.2024

To
M/s. Karunya Institute of Technology,
(College Campus), Karunya Nagar,
Coimbatore-641 114.

Whereas the HT Installation at above premises was inspected on 31.1.2024 under Regulation 32 of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023 for the year 2023-2024 and whereas it appears to me that you have not complied with the CEA (MSES) Regulations, 2023 in the following respect as detailed below. You are hereby called upon to comply with the said regulations on or before 24.6.24 and to report compliance in writing to this office with a copy to Senior Electrical Inspector/ Coimbatore and Chief Electrical Inspector to Govt. Chennai 32.

An appeal may be filed against this order under sub section 2 of section 162 of the Electricity Act, 2003 within three months of the date on which this order is served or delivered or is deemed to have been served but this order must be complied with not withstanding such appeal, unless the appellate authority [namely, the Chief Electrical Inspector to Government, Chennai] on or before the date specified in paragraph I above suspends in operation.

DEFECTS

1)Following periodical tests are due. They should be conducted and the test reports entered in the log book for reference and maintenance. R48(6)

1	Earth electrodes	For individual and combined earth resistances	Once in a year on a dry day during a dry season
2	Transformer oil	Dielectric strength and acidity	once in a year
3	Protective relays	For proper functioning and sensitivity	once in a year

2) Most of the LDBs are not having RCCB protection. RCBO of 30mA residual operating current should be provided at the incoming of side of all lighting circuit DBs and street lights. R 44

3) 100mA RCBO protection should be provided for the portable equipments and loads fed from socket outlets. R 44

4) The following details should be identified permanently with proper paint marking / sticker on the metallic enclosure of the panels and DBs. R 21(6)

a. Name of the SSBs, panels, PDBs & LDBs
b. The source of incoming supply to SSBs, PDBs & LDBs
c. Updated Circuit list with load details, size of the cable, circuit number, rating of MCBs in all DBs and LDBs

5) The following should be made available in the MV panel room for reference and maintenance: R 14(1)
(i) Permission issued from this department for the electrical installations.

6) Maintenance registers and details of permission obtained from electrical inspector are not properly updated and it is not properly monitored by the Designated electrical supervisor. Considering the importance of the installation it is the responsibility of the Designated electrical supervisor to update and maintain the entire installation in a condition free from danger and records should be duly updated as recommended by the Regulations . R 14(1) & R3

7) Standard Danger notice should be pasted conspicuously in all panels, PDBs and LDBs. R 20.

8) Two separate and distinct earth connections should be provided for all lab equipments and DBs and continuity with main earth flats should be checked and ensure effective earth connections. R 44(vii)

9) Drawing proposal for the addition and alteration equipments at bio tech building, fire pumps, innovative cell , food processing lab , lab equipments should be sent and permission should be obtained as per Regulations 45 . As per regulation 45, permission from electrical inspector should be obtained for any addition and alterations of the electrical equipment's before connecting to the supply. R 45

10) Guarding is not provided for the 5 span of TANGEDCO's HT bare overhead lines running inside the premises, incoming OH line to the supplier DP structure . Suitable earthed cradle guarding arrangement should be provided for the above bare overhead lines in consultation with the TANGEDCO authorities for rendering them electrically harmless in case they break. R 76.

11) Electricity Tax on captive consumption using DG set and solar plant should be paid every month and monthly return in form C2 sent to this office . Sec 3 of the Tamil Nadu Tax on Consumption or Sale of Electricity Act-2003

All the above defects should be arranged to be rectified as per the provisions of Regulation 31 of CEA (MSES) regulations 2023.

25/3/24

Electrical Inspector
Coimbatore South

Copy Submitted to the Chief Electrical Inspector to Govt, Chennai 32.
Copy Submitted to the Senior Electrical Inspector / Coimbatore.

Safety Inspection for Lifts by Chief Electrical Inspectorate, GoI

FORM F

[See rules 4(2) and 5(2) and 6]

LICENCE TO WORK A LIFT

(This Licence is not transferable or assignable to any person, company, body of individuals or firm. This Licence is to be renewed once in three years and must be produced to the Licensing Authority when called for)

Registration No.: **30289/L/F/CBES/Dt:14/06/2018**

Under sub-section (3) of Section 5 of the Tamil Nadu Lifts and Escalators Act, 1997 (Tamil Nadu Act 35 of 1997) Thiru. Karunya University, are hereby Renewed Licence to work or cause to be worked or allow the working of the Lift erected at the premises No.Karunya Univesity Science And AddminBlok Karunya Nagar , Coimbatore-641114, subject to the provisions of the Tamil Nadu Lifts and Escalators Act, 1997 (Tamil Nadu Act 35 of 1997) and the Tamil Nadu Lifts and Escalators Rules, 1997 the particulars of which are given below:-

The Licence shall remain valid **from 14-06-2018 to 13-06-2019** and is issued subject to the conditions set out on the below:-

Particulars

1.	Make of Lift and Serial No.	Johnson and L J 4707
2.	Type of Lift	Passenger
3.	Type of Control	Simplex Selective Collective Control
4.	Capacity	8Persons

Date of Inspection	Valid From	Valid UpTo	Signature of the Officer Renewing the Licence
29-11-2019	14-06-2019	13-06-2022	
11-11-2022	14-06-2022	13-06-2025	