



**M.Kumarasamy
College of Engineering**

NAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University

ISO 9001:2015 Certified Institution

Thalavapalayam, Karur - 639 113, TAMILNADU.



M.KUMARASAMY COLLEGE OF ENGINEERING

(An Autonomous Institution)

Thalavapalayam-639113, Karur

ENERGY POLICY

(Version – 1.0)

Policy No: MKCE/EN/2018

Date: 17.05.2018



Vision

To emerge as a leader among the top institutions in the field of Technical Education.

Mission

- Produce smart technocrats with empirical knowledge who can surmount the global challenges.
- Create a diverse, fully-engaged, learner-centric campus environment to provide quality education to the students.
- Maintain mutually beneficial partnerships with our alumni, industry and professional associations.



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INDEX

Sl.No.	Content	Page No.
1	Introduction	05
2	Objectives	06
3	Renewable Energy Systems Implemented	07
4	Action Plan to Save Energy	10
5	Monitoring and Review	11
6	Conclusion	12



1. Introduction

The **Alternative Energy Sources Initiative** of the College aims to promote the efficient utilization of renewable and sustainable energy sources to minimize environmental impact. The institution is committed to reducing dependence on non-renewable energy and fostering environmental consciousness among students, faculty, and staff.

This policy ensures that energy conservation measures are systematically implemented and monitored, offering opportunities for the student community to engage in energy-saving and environmental protection initiatives.

2. Objectives

The main objectives of this policy are to:

- Promote the use of renewable and clean energy sources within the campus.
- Reduce energy consumption and carbon footprint.
- Optimize energy efficiency in campus operations and infrastructure.
- Encourage awareness and participation in energy conservation initiatives.

3. Renewable Energy Systems Implemented

3.1 Solar Energy

The institute has established **250 kW solar power plants** on its rooftops to meet domestic and institutional energy needs. Approximately **96% of the total energy requirement** is met through solar and wind energy sources.

The **Solar PV system** is fully automated and requires no manual operation. In case of grid power failure, the inverter is automatically disabled (anti-islanding protection) and reactivated once the grid supply is restored, ensuring safe and efficient operation.

3.2 Biogas Plant

The institution has installed **three biogas plants** of **1,36,032-liter capacity each**, generating approximately **100 cubic feet of gas per unit**.

The installation has led to a significant reduction in LPG usage across campus. Kitchen waste is processed and converted into a bio-suspension that undergoes fermentation to produce biogas — a clean and renewable energy source.

The system includes:

- A **digester tank** for anaerobic processing
- An **inlet** for feeding kitchen waste
- A **gas holder tank**
- An **outlet** for digested slurry
- A **gas delivery system**

The digested slurry serves as **organic manure** for gardens, promoting sustainable waste management. The process is odor-free and fly-free, contributing to a clean campus environment.

3.3 Wheeling to the Grid

The college operates a **grid-connected photovoltaic (PV) system**, integrating the solar power plant with the utility building load. The system includes:

- Solar panels
- Inverter
- DC/AC isolator switch
- Power conditioning unit
- Grid connection equipment

Two scenarios are supported:

1. **Energy Shortfall:** When internal demand exceeds solar production, energy is drawn from the utility grid.
2. **Energy Surplus:** When solar energy production exceeds demand, surplus energy is exported to the grid.

This ensures continuous energy availability while contributing clean power back to the grid.

3.4 Use of LED Lighting

Energy-efficient **LED bulbs** are installed extensively across the campus to reduce power consumption by up to **75%** compared to conventional bulbs.

All CFL fittings of higher wattage have been replaced with LED lights of lower wattage but equal illumination. LED lighting is used in:

- Administrative offices
- Reception areas
- Seminar halls
- Corridors and classrooms



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LED lights are also installed on rooftop walls and across all major facilities to enhance illumination while minimizing energy consumption.

4. Action Plan to Save Energy

The college has adopted the following **energy-saving practices** to promote responsible energy usage:

1. **Computer and Monitor Management:** Enable power management settings to switch to “sleep mode” when not in use; prefer shutdown over logout.
2. **Monitor and Printer Usage:** Turn off monitors and activate energy-saving features on laser printers when idle.
3. **Lighting Management:**
 - Turn off unnecessary lights and use natural daylight whenever possible.
 - Switch off lights in conference halls, seminar rooms, and classrooms when not in use.
 - Use only **LED or compact fluorescent bulbs (CFLs)**.
4. **Fan Usage:** Operate ceiling or exhaust fans only when necessary.
5. **Awareness Programs:** Conduct periodic awareness drives, campaigns, and workshops to educate students and staff on energy conservation.
6. **Maintenance and Monitoring:** Regularly inspect and maintain electrical fixtures, solar systems, and energy equipment to ensure efficient operation.

5. Monitoring and Review

The **Energy Conservation Committee** of the institution, in coordination with the Estate and Maintenance Department, shall:

- Periodically review energy consumption reports.
- Monitor renewable energy generation statistics.
- Evaluate policy implementation effectiveness.
- Recommend improvements and report outcomes to the IQAC.

The policy shall be reviewed **annually** to incorporate advancements in technology and sustainability practices.



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6. Conclusion

The institution is dedicated to creating an energy-efficient campus through the adoption of renewable energy systems, eco-friendly practices, and continuous awareness programs. This commitment not only supports environmental sustainability but also serves as a model for responsible energy management in higher education institutions.