RAM KALAM -CENTRE FOR ENERGY CONSULTANCY & TRAINING

CHENNAI COIMBATORE ERODE

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CERTIFICATE FOR ENERGY-ENVIRONMENT-GREEN AUDIT PROCESS

This is to certify that, we have conducted an ***ENERGY-ENVIRONMENT-GREEN AUDIT*** in THAMIRABHARANI ENGINEERING COLLEGE, Thatchanallur, Tirunelveli – 627 358, Tamil Nadu, India on 13 JUNE 2018. The description of the audit process is given below.

S. No.	Description	Parameters
1.	Present Annual Energy Consumption	96,249 kWh + 4,182 kg of LPG
2.	Proposed % of Energy Savings	10.0 % Electrical + 5.0 % LPG
3.	Proposed Annual Energy Savings	9,625 kWh + 209 kg of LPG
4.	Proposed Financial Savings	Rs. 1.0 Lakhs
5.	Initial Investment Required	Rs. 1.8 Lakhs
6.	Simple Payback Period	Nearly 1.8 Years

Analysis of Environment Audit Process and CO_2 Balance Sheet:

S. No.	Annual Energy Consumption & CO_2 Emission			Annual CO_2 Neutralization		
	Description	Annual Usage	CO_2 Emission (Tons)	Description	Annual Usage	CO_2 Neutralized (Tons)
1.	Diesel	63,269 Litres	167.0	Mature Trees	626 No's	13.6
2.	Electrical Energy	96,249 kWh	78.9			
3.	LPG	4,182 kg	12.5			
4.	Total Emission		90.3	Total-Neutralized		13.6
Balance CO_2 to be Neutralized = 258.5 Tons/Annum & Per Capita CO_2 Consumption = 0.33 Tons/Annum [1]						

([1] Total strength of students, teaching and technical staff = 734)

Recommendations of the Audit Process:

I. Energy Conservation & Management:

1. Battery voltage of each UPS must be measured and monitored. This ensures good practices on UPS & battery maintenance.
2. Prepare and adhere a cleaning schedule for UPS (both inside and outside the cabinet) and ensure proper heat dissipation
3. Convert (one to one) the existing Fluorescent Lighting into non-blue tinge LED lightings in most utilized areas.
4. Conduct some kind of awareness programmes on Energy Conservation to all the stake holders.

PRINCIPAL
THAMIRABHARANI ENGINEERING COLLEGE
Chathirampudukulam Village,
Ghidambaranagar - Vepemkulam Road.
Thatchanallur, Tirunelveli

II. Environmental Management:

1. Develop a policy for waste handling and management
2. Segregation of different types of waste has to be done at source level
3. Establish an MoU with the third party to safely dispose the wastes
4. Conduct a study on water utilization in the college campus
5. Prepare a plan for maximum water utilization from natural source and reduce the water consumption from the bore wells
6. Convert the existing conventional pumps into BEE star rated energy efficient pumps which directly saves nearly 15 % of present energy consumption
7. Install drip irrigation or low pressure water sprinkler for gardening water supply
8. Conduct a study on availability of matured trees inside the campus along with their location, botanical name and landscape area.
9. Prepare a plan to increase the coverage of i) tree and ii) renewable energy sources.

Equipment's/Systems Audited:

• Electrical System & Network	• Motors & Water Pumping Systems
• Lighting, Fan & Air Conditioning System	• Cooking System Maintenance
• Inverter, UPS & Battery System	• LPG Consumption
• Diesel Consumption (Vehicles + DG)	• Solid & E-Waste Handling & Management
• Usage of Chemical, Salts & Acids	• RO Plant & Water Distribution System
• Coverage of mature trees	• Pollution certificates for all transport vehicles
• Rain Water Harvesting	• Survey on Bio-diversity

Note: Audited and Accounted from June-2017 to May-2018

Audit Conducted and Verified by

S.R. Sivarasu

(Dr. S.R. SIVARASU)

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