Welcome to

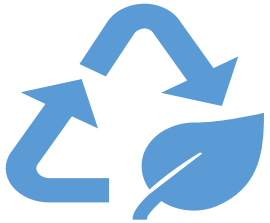
CII - Energy Management Competition 2022

Jury Members

About us

- The **Koneru Lakshamaiah Charities** was established in 1980 and started KL College of Engineering in the academic year 1980 - 81.
- **Year of Autonomous Status:** 2006 by UGC.
- **Year of Deemed to be University Status:** 2009 by UGC, MHRD, Govt. of India.
- In 2012 as Deemed to be University, the institution was **accredited by NAAC with A Grade.**
- **NAAC A++ Grade with 3.57 CGPA** on a 4-point scale, in the year 2018.
- **CATEGORY-1 University** by UGC under the categorization of universities for grant of Graded Autonomy, in the year 2019.
- KLEF is **recognized under section 12B** of the UGC Act 1956.
- NIRF 2022 Rankings:
  - 27 in University
  - 44 in Engineering
  - 47 in Management
  - 54 Overall

KLEF Energy Policy



KLEF strives to use energy in the most efficient, cost effective, and environmentally responsible manner possible. The purpose of this policy is to optimize energy use throughout KLEF, improve cost-effectiveness, enhance working conditions, reduce greenhouse gas emissions, contribute to sustainability and otherwise reduce waste associated with energy use.

KLEF is committed to:

Minimise the energy requirements of our assets

support sustainable sourced energy Fostering an organisational culture that promotes energy conservation and engages with its stakeholders to encourage energy saving behaviour.

Developing and maintaining environmental frameworks and reporting that promotes data integrity, enables transparent communication & continuous improvement.

Implementation of the Energy Management Policy

The strategy uses the 5 R's principle

- Reduce: Conserve the energy without effecting working environment - Searching for opportunities.
- Reengineering: Operational management reengineering applied for the efficient use of energy and resources.
- Renovation: Replacement of conventional equipment with energy efficient equipment with early payback.
- Renewable Energy: Setting up various renewable resources to become self sustainable.
- Recycle: All the scrap items are sending for recycling through registered vendors.

Confederation of Indian Industry

GREEN Audit by

CONFEDERATION OF INDIAN INDUSTRY (CII)

TITLE - CARBON FOOTPRINT, ENERGY AUDIT, GREEN AUDIT AND ENVIRONMENTAL AUDIT

Ref Link: https://tiny.one/CII-Green-Audit)

KLEF Green Policy

Ref Link: https://tiny.one/Green-Policy

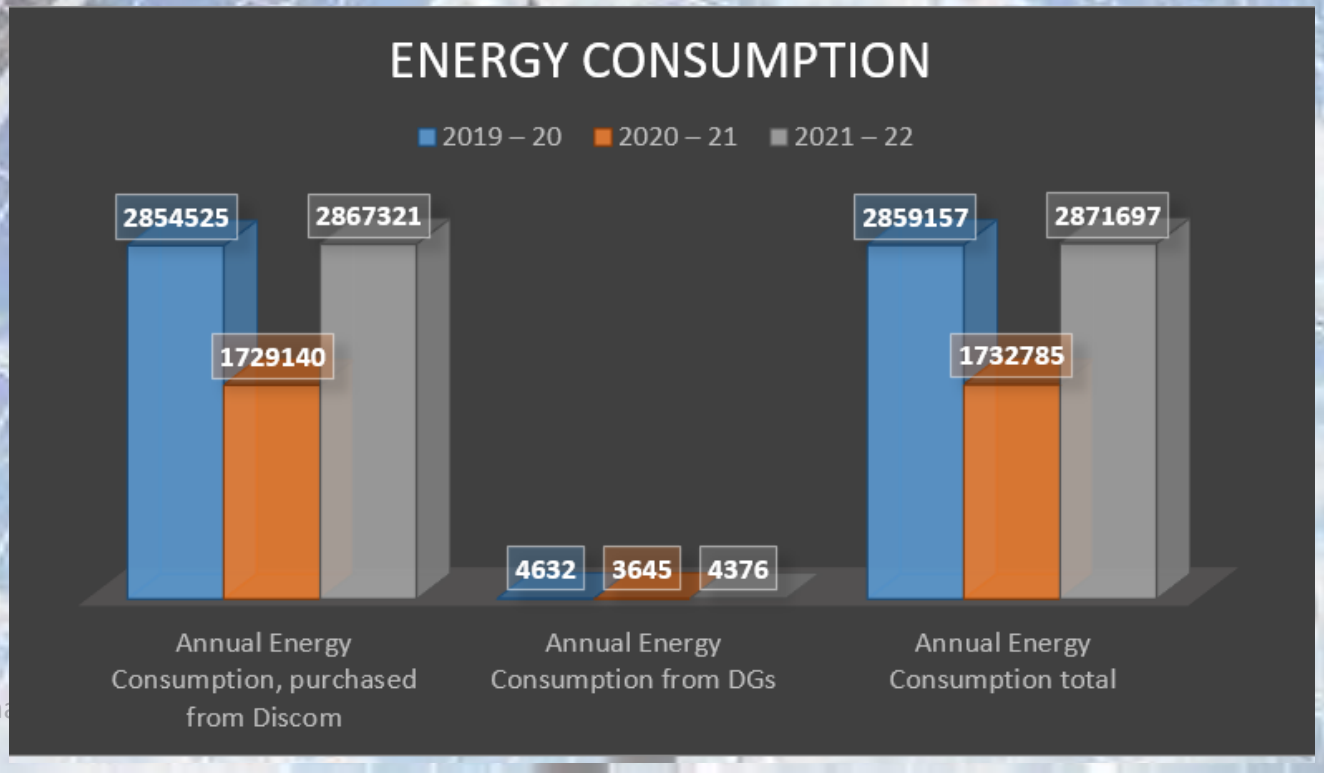
Energy Consumption Overview

overall energy consumption data of last three years (FY 19-20 to FY 21-22

	2019 – 20 kWh	2020 – 21 kWh	2021 – 22 kWh
Annual Energy Consumption, purchased from Discom	**2854525**	**1729140**	**2867321**
Annual Energy Consumption from DGs	**4632**	**3645**	**4376**
Annual Energy Consumption total	**2859157**	**1732785**	**2871697**

Thermal energy consumption kCal (If Any): Nil

Electrical Energy consumption – 2871697 kWh

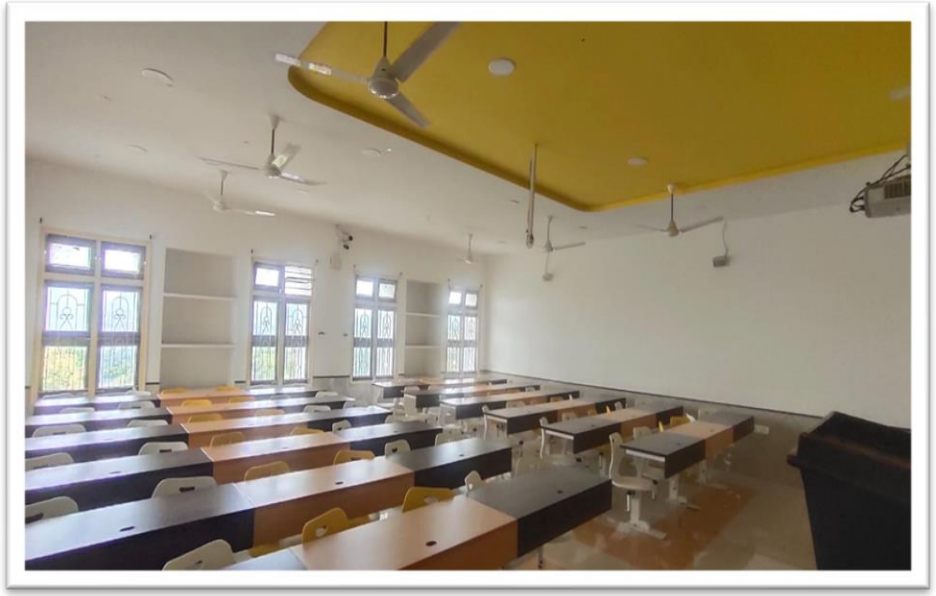


Architectural design of the building and energy efficient features architecturally

- High Voltage distribution to minimize local distribution losses as well maintain voltage profile.
- All the outer walls of the buildings are double walls with puff insulation.
- Big windows provided with double glazed glass, which allows maximum light by arresting heat.
- All the partitions were done with greenply plywood.
- Library block provided with radiant pipes inside slab and floor to circulate cool water to minimize HVAC consumption.
- Library block had thermal storage tank to preserve the cooling at -5^{o}C with glycol mixed water.
- Library and Research blocks provided with BMS for efficient operation of HVAC system to maintain CO_2, Humidity and indoor air quality.
- All the artificial lightings are LED lighting.
- All the ceiling fans must be BLDC energy efficient fans.

High Voltage Distribution, Radiant pipes & Thermal storage tank, Big double-glazed glass for windows

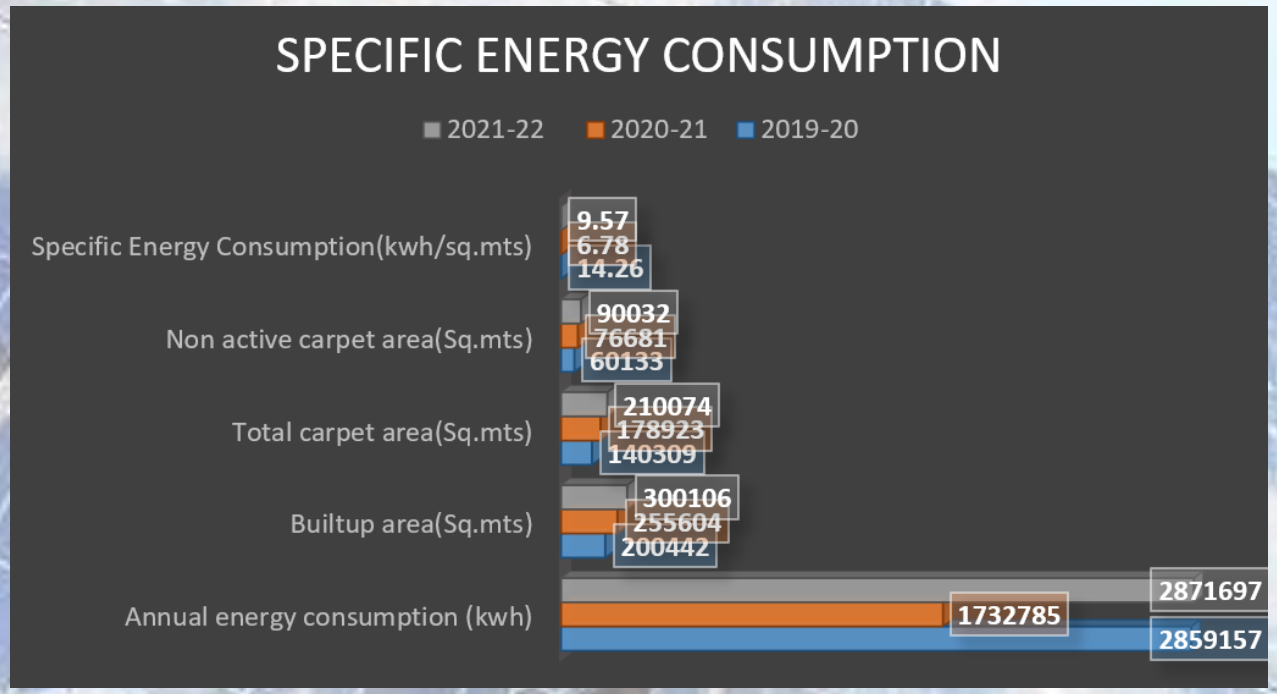
Renovation with BLDC fans & LED Lights



Block	Ceiling Fans		36W F.T.L's (Fluorescent Bulbs)	28W F.T.L's (Fluorescent Bulbs)	CFL Lights	LED Lights (All Models)
	Non-Energy Efficient	Energy Efficient	Non-Energy Efficient			Energy Efficient
FED Block	427 No's (Orient -182, Havells - 185, CG-60)	90 No's (Gorilla-50, Superfans-40)	175 No's	240 No's	425 No's	107 No's
CSE Block	685 No's (Orient -172, Havells - 398, CG -115,	257 No's Gorilla-95, Superfans-162)	78 No's	315 No's	614 No's	936 No's
Mechanical Block	132 No's (Orient -70, Havells -34, CG -28,	145 No's (Gorilla-30, Superfans-115)	28 No's	136 No's	Nil	390 No's
Old EEE Block	64 No's (Orient-23, Havel -22, CG -18,	100 No's (Gorilla-95, Superfans-5)	46 No's	212 No's	152 No's	118 No's
Library Block	Nil	716 No's (Gorilla-92, Superfans-624)	Nil	30 No's	Nil	1702 No's
Law College	59 No's (Orient -16, Havells-10, CG -33,	2 No's (Gorilla-2)	24 No's	22 No's	Nil	68 No's
Main Canteen	26 No's (Orient -10, Havells-16)	Nil	9 No's	Nil	Nil	24 No's
Indoor Stadium	68 No's (Orient-30, Havells-38,	9 No's (Gorilla-2, Superfans-7)	30 No's	38 No's	40 No's	238 No's
R & D Block	Nil	875 No's (Gorilla-875)	Nil	Nil	Nil	2289 No's
Temple	Nil	Nil	Nil	Nil	30 No's	Nil
TOTAL	1461 No's	2194 No's	390 No's	993 No's	1261 No's	5872 No's

Specific Energy Consumption in last 3 years (FY 19-20 to FY 21-22)

	2019-20	2020-21	2021-22
Annual energy consumption (kwh)	2859157	1732785	2871697
Builtup area(Sq.mts)	200442	255604	300106
Total carpet area(Sq.mts)	140309	178923	210074
Non active carpet area(Sq.mts)	60133	76681	90032
Specific Energy Consumption(kwh/sq.mts)	14.26	6.78	9.57



Competitors, National & Global benchmark

Specific Energy consumption (Kwh/Sq.M) in 2020-21	KLEF	Global Bench Mark Value		
		Highest	Lowest	Average
	9.57	216	137	164

Energy Conservation Projects FY 2022-23

S. No	Year	Title of Project	Annual Electrical Saving (Million kWh)	Annual Thermal Saving (Million Kcal)	Investment (Rs in Million)	Comment
1	2022 - 23	Grid tied Roof Top Solar PV Plant 276 kWp with raised structure	0.442	379.96	15.62	Targeted to complete the project by Nov, 2022
2	2022 - 23	Grid tied Roof Top Solar PV Plant 679 kWp with raised structure	1.078	927.87	38.43	Targeted to complete the project by Oct, 2022

Energy Saving projects implemented in last three years

S. No	Year	Title of Project	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs Million)	Annual Thermal Saving (Million Kcal)		Annual Thermal Cost Saving (Rs Million)	Total Annual Savings (Rs Million)	Investment (Rs in Million)	Payback (Months)
					Quantity	Unit of Measurement				
1	2019 - 20	Grid tied Roof Top Solar PV Plant 151.2 kWp	241600	2.66	207877714	kcal	1.33	3.99	8.305	32
2	2020 - 21	Renovation of CSE Block with Energy Efficient Systems	345600	3.81	297361498	kcal	1.9	5.71	10.08	22
3	2021 - 22	Grid tied Roof Top Solar PV Plant 454 kWp with raised structures	726400	7.99	625008914	kcal	3.99	11.98	35.87	36

Innovative Projects implemented

Name of the Project	Brief description on innovative	Trigger for implementing the project	Select Project category	Replicability	Impact on SEC	Year of Implementation	Annual Savings (Rs. In	Investment (Rs. In lakhs)
Replacement of conventional ceiling fans	BLDC Ceiling fans consumes less energy as compared with conventional ceiling fans for the same amount of air circulation and life would be high with minimal maintenance	Conservation of energy is mainmotivation, after investigation and seen the energy consumption patterns wefound ceiling fans are consuming more energy. Hence, we ecommend to manage ment with complete budget with management approval we implemented the project.	B	Yes	Yes	2019	18.36	29.45
Smart Campus	1. Smart Street lighting system: Astronomical timer and LDR sensor 2. Smart Parking System: With LED Display at entrance of Parking block specifying no. vacant slots 3. Smart Corridor Lighting: Timer and LDR based control 4. Smart parking lights: Timer based lighting control 5. Smart control of Central Exhaust system	Implementation of various IoT system to conserve energy in all possible avenues	B	Yes	Yes	2020	12.48	2.14

- ❑ Please provide information on how and what impact it created

Utilization of Renewable Energy sources

PART-A: Renewable Generation

CSE Block:

Unit Type	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	161.72 (3-Inverter units)	2084	3058	974	One 50 kVA Inverter main control board problem, technician visited 02-07-2022, existing spares not set into inverter, he will come again with alternative spares on 12-08-2022.
SPV-Wind Hybrid	68 (2-Inverter units)	861	1285	424	7 Windmills had problem, as per the management instructions, work assigned to Mr. VV Subba Rao, He is preparing setup to unload machines, he is planning to unload from28-07-2022.

EEE Block:

Unit Type	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	69 (3-Inverter units)	1297	1304	7	

FED Block:

Unit Type	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	10.98 (1-Inverter unit)	211	207	-4	

Girls Hostel Block:

Unit Type	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	105 (3-Inverter units)	1978	1985	7	

Indoor Stadium:

UnitType	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	137.5 (6-Inverter units)	2608	2600	-8	

Mechanical Block:

Unit Type	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	78.75 (3-Inverter Units)	1498	1489	-9	Good

R&D Block:

Unit Type	Rated Capacity (kWp)	Units Generated	Units Estimated	Shortage	Remarks
SPV	151.2 (3-Inverter Units)	2872	2859	-13	Good

L-Block:

Unit Type	Rated Capacity (kWp)	Units generated	Units Estimated	Shortage	Remarks
SPV	10.08 (1-Inverter Unit)	197	190	-7	Good
SPV-Wind Hybrid	34 (1-Inverter Unit)	352	643	290	3 Windmills had problem, as per the management instructions, work assigned to Mr. VV Subba Rao, He is preparing setup to unload machines, he is planning to unload from 28-07-2022.

SDC-Block:

Unit Type	Rated Capacity (kWp)	Units generated	Units Estimated	Shortage	Remarks
SPV	454 (4-Inverter Unit)	9867	9845	-22	Good

PART-B: University Energy Consumption from APCPDCL:

Date	Units (kVAH) consumed from APCPDCL
30 July 2022	19550
31 July 2022	17140
01August 2022	17305
02 August 2022	14910
03 August 2022	17315
04 August 2022	16425
05 August 2022	17400

Total Units consumed from APCPDCL during23 July 2022 to 29July 2022 :1,08,050

Total Units consumed from APCPDCL during30 July 2022 to 05August 2022 :1,20,045

Difference in units:- 11,995 kVAh (Usage halls were increased student activities and students got occupied in hostels)

PART-C: Girls Hostel Energy Consumption from APCPDCL:

Date	Units (kVAH) consumed from APCPDCL
30 July 2022	3865
31 July 2022	4055
01 August 2022	5125
02 August 2022	4765
03 August 2022	4265
04 August 2022	4210
05 August 2022	4445

Total Units consumed from APCPDCL during23 July 2022 to 29July 2022 :24, 310

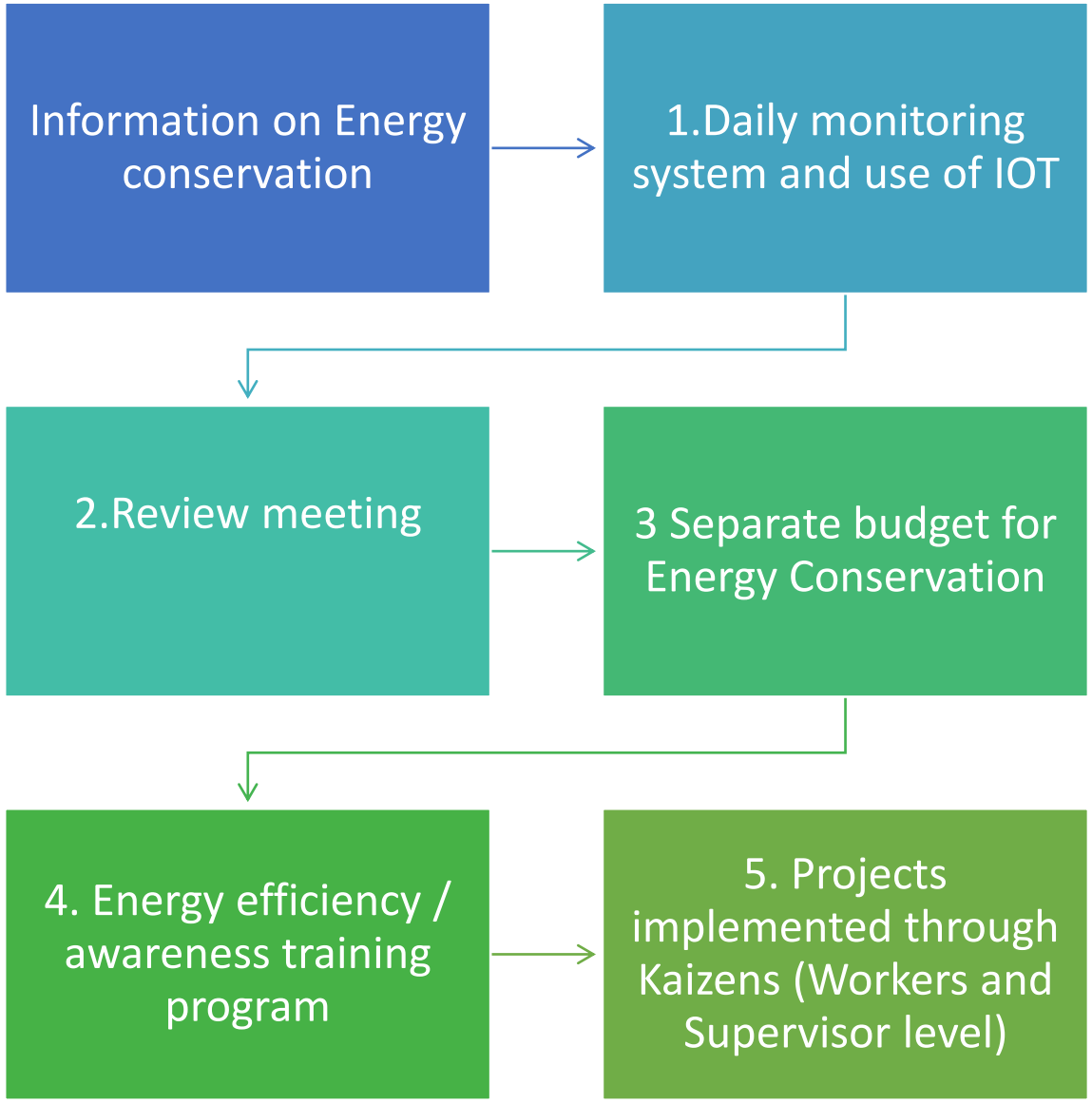
Total Units consumed from APCPDCL during30 July 2022 to 05August 2022 :30, 730

Difference in units:-6,420 kVAh (Consumption was increased due to occupancy increased in hostel)

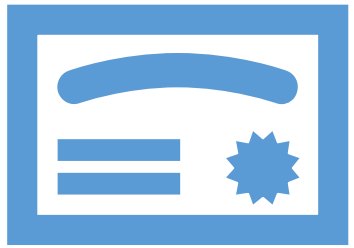
GHG emission and indoor air quality

- Information on GHG Inventorisation and public disclosure
- ❑ Please mention the scope of emissions (I,II,III) you have considered
- ❑ Absolute Emissions and Emissions intensity of last three years (FY 19-20 to FY 21-22) to be mentioned
- ❑ Target (short term/ long term) for CO2 emission reduction and action plan to be mentioned
- ❑ Indoor Air quality(CO2, PM 2.5, PM 10, CO, O3, TVOC, SO2, NO2, etc..)

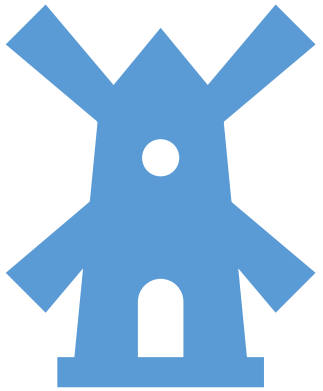
Teamwork, Employee Involvement & Monitoring



Implementation of ISO 50001/Green Co/IGBC rating



Implementation of ISO 50001/ Green Co /IGBC certification



% investment of energy saving projects on total turnover of the company (FY 21-22)

Institution awards / Special recognition

Institution: (Govt)

- NAAC assessed the University and accredited for a period of five years from 2018 to 2023 with a CGPA of 3.57 with A++ grade.
- The University has accorded Category-1 status.
- KLEF is recognized under section 12B of UGC Act 1956.
- NIRF awarded 41st and 58th Rank to the University and Engineering College respectively for the year 2020.
- KLEF was awarded Second Prize for application of "Excellence in Water Management" in Water Management Competition organized by CII Southern Region in 2022.
- KLEF was awarded Third Prize for application of "Best Solid Waste Management Practices" in Waste Management Competition organized by CII Southern Region in 2022.
- KLEF got State Energy Conservation award-2021 in Gold category award from APSEM, Government of AP.
- **The KLEF has achieved All India 1st Rank under Swacctha Institute Rankings-2019 for Deemed Institutions.**
- **The KLEF has been awarded as the Most Clean Campus in South-Central Region for the Year 2017 by AICTE.**
- **Green Champion Award 2021 announced by the Mahatma Gandhi National Council of Rural Education for the implementation of the Swachhta Action Plan 2020-2021 in Guntur District from the Department of Higher Education, Ministry of Education, Government of India,**
- The KLEF is categorized as a 'Band A' institution (rank between 06-25) in the category of 'University & deemed to be University (Private-Self-Financed)' in Atal Ranking of Institutions on Innovation Achievement (ARIIA) 2020.

Koneru Lakshmaiah Education Foundation (Deemed-to-be University) was awarded Second Prize for application of “Excellence in Water Management” in Water Management Competition organized by CII Southern Region

CII
Confederation of Indian Industry

Certificate of Winners

This is to certify that

KONERU LAKSHMAIAH EDUCATIONAL FOUNDATION

has secured

2nd Place

under the category

Excellence in Water Management

CII-Southern Region ***Water Management Competition***

organized on 5th July 2022 in Chennai

Ravi Purushothaman
Chairman
CII-SR Sustainability Sub-committee 2022-23 & President
Danfoss India Pvt Ltd

Sohanjeet Randhawa
Co-Chairman
CII-SR Sustainability Sub-committee 2022-23 &
Sustainability Affairs & Group Communication
Volvo Group

Koneru Lakshmaiah Education Foundation (Deemed-to-be University) was awarded Third Prize for application of “Best Solid Waste Management Practices” in Waste Management Competition organized by CII Southern Region

CII

Confederation of Indian Industry

Certificate of Winners

This is to certify that

KONERU LAKSHMAIAH EDUCATIONAL FOUNDATION

has secured

3rd Place

under the category

Best Solid Waste Management Practices

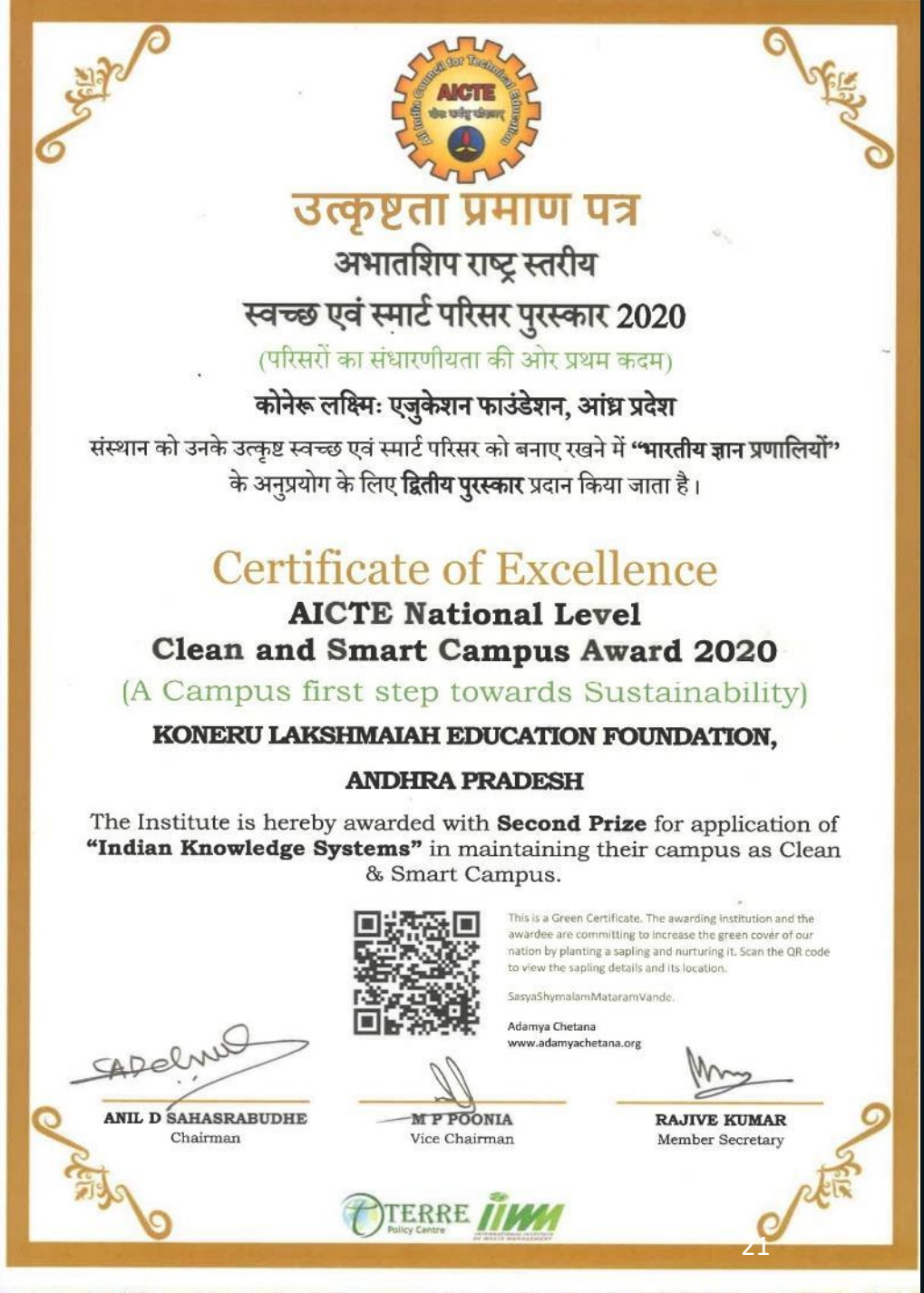
CII-Southern Region ***Waste Management Competition***

organized on 5th July 2022 in Chennai

Ravi Purushothaman
Chairman
CII-SR Sustainability Sub-committee 2022-23 & President
Danfoss India Pvt Ltd

Sohanjeet Randhawa
Co-Chairman
CII-SR Sustainability Sub-committee 2022-23 &
Sustainability Affairs & Group Communication
Volvo Group

Koneru Lakshmaiah Education Foundation (Deemed-to-be University) was awarded Second Prize for application of “Indian Knowledge Systems” in maintaining their campus as a Clean & Smart Campus by AICTE (All India Council for Technical), New Delhi.



उत्कृष्टता प्रमाण पत्र

अभातशिप राष्ट्र स्तरीय

स्वच्छ एवं स्मार्ट परिसर पुरस्कार 2020

(परिसरों का संधारणीयता की ओर प्रथम कदम)

कोनेरू लक्ष्मिः एजुकेशन फाउंडेशन, आंध्र प्रदेश

संस्थान को उनके उत्कृष्ट स्वच्छ एवं स्मार्ट परिसर को बनाए रखने में **“भारतीय ज्ञान प्रणालियों”** के अनुप्रयोग के लिए **द्वितीय पुरस्कार** प्रदान किया जाता है।

Certificate of Excellence

AICTE National Level

Clean and Smart Campus Award 2020

(A Campus first step towards Sustainability)

KONERU LAKSHMAIAH EDUCATION FOUNDATION,

ANDHRA PRADESH

The Institute is hereby awarded with **Second Prize** for application of **“Indian Knowledge Systems”** in maintaining their campus as Clean & Smart Campus.

This is a Green Certificate. The awarding institution and the awardee are committing to increase the green cover of our nation by planting a sapling and nurturing it. Scan the QR code to view the sapling details and its location.

SasyaShymalamMataramVande.

Adamya Chetana
www.adamyachetana.org

ANIL D SAHASRABUDHE
Chairman

M P POONIA
Vice Chairman

RAJIVE KUMAR
Member Secretary

TERRE Policy Centre IIMA

KL Deemed to be University has achieved All India 1st Rank under Swachhta Institute Rankings-2019 in the category of residential universities – UGC by MHRD, Govt. of India.

Ministry of Human Resource Development
Government of India

Swachh Campus Ranking 2019 of Higher Educational Institutions

The Koneru Lakshmaiah Education Foundation, Guntur has been ranked First amongst the cleanest Higher Educational Institutions in the Country in the category Residential Universities - UGC and was awarded on 3rd December, 2019 at Prajnan (Auditorium), AICTE, New Delhi

This is a Green Certificate

This award is in the form of a sapling planted by AICTE to increase green cover on Mother Earth in recognition of the institute's performance. We take responsibility for nurturing the plant which can be viewed by scanning the QR Code.

R. Subrahmanyam
Secretary, Department of Higher Education,
Ministry of Human Resource Development, Govt. of India

Ramesh Pokhriyal 'Nishank'
Minister of Human Resource Development,
Govt of India

KL Deemed to be University got Andhra Pradesh State Energy Conservation Award – 2021. It is a prestigious award instituted in 2020 to commemorate the efforts of various organizations in the state of Andhra Pradesh. APSECM announced the State Energy Conservation Awards 2021 on December 14, 2021.

State Energy Conservation Mission (SECM),
A Govt. of AP Society

(A State Designated Agency (SDA) of Bureau of Energy Efficiency (BEE), GoI under EC Act-2001)

STATE ENERGY CONSERVATION AWARD (SECA) 2021

In recognition to the achievements in Energy Conservation and Energy Efficiency in the Universities/Engineering Colleges *Sector for the year 2021, APSECM, GoAP Society, SDA of Bureau of energy Efficiency (BEE), GoI is pleased to present the* Gold *category award to M/s* Koneru Lakshmaiah Education Foundation (Deemed to be University), Guntur.

APSECM
Vijayawada, Dt.20.12.2021

On behalf of AP State Energy Conservation Mission, Govt. of Andhra Pradesh.

The Project "Koneru Lakshmaiah Education Foundation, Central Research Block, Vijayawada, Andhra Pradesh" has been awarded a “Five Star” GRIHA (Provisional) V3.1 rating


GRIHA

GREEN RATING FOR INTEGRATED HABITAT ASSESSMENT

Koneru Lakshmaiah Education Foundation, Central Research Block
Vijayawada, Andhra Pradesh

has been provisionally certified with a

'Five Star'

rating under

GRIHA

An initiative of Ministry of New and Renewable Energy
Government of India
and The Energy and Resources Institute

Date of Issue: 19th July 2021

Chief Executive Officer
GRIHA Council

Highlights of KLEF

- Building Management system facility
- Green building Certified
- 80% of lighting in the campus with LED bulbs & DC fans
- Proximity Lighting in the corridors/LDR-based Lighting.
- Sensor-based parking in the campus
- 100 villages adopted in Smart Village Revolution Program by KLEF
- 4 Villages nominated for Adarsh gram (health, hygiene and community actions)
- Under SVR Burujawada village-saravakota Mandal-Srikakulam district was declared as Adarsh gram by the state government of Andhra Pradesh.

- **Water Management(STP)- 980 KLD**
- **Sensor-based toilets**
- **Sowing of medicinal/rare plants in the campus**
- **In-house composting unit**
- **Dual Plumbing System**
- **Rainwater harvesting pits - 35**
- **Campus KL Radio**

Thank you