SDG 13: Climate Action
(Report 2023-24)

13.1 Research on climate action

K.R. Mangalam University demonstrates a proactive research focus on Climate Action, contributing to global efforts in climate mitigation, adaptation, and sustainable environmental management. Between 2014 and 2024, the University produced 1,042 Scopus-indexed publications, of which 72. These publications have collectively received 1,102 paper views, achieved a citation index of 17.22, and recorded a Field Citation Average (FCA) of 4.48, reflecting both the academic influence and global relevance of the University's climate-focused research initiatives.

13.1.1: Climate Action – CiteScore

In 2024, the Cumulative CiteScore of 74.4 highlights the strong scholarly impact and visibility of K.R. Mangalam University's publications on climate action. The research covers critical areas including climate modeling, renewable energy integration, carbon footprint reduction, environmental policy, and sustainable urban planning. High CiteScores indicate that these publications are consistently cited in reputable journals, demonstrating their relevance to both the scientific community and policy stakeholders engaged in climate action.

13.1.2: Climate Action – FWCI

The average Field-Weighted Citation Impact (FWCI) of 4.01 indicates that the University's research on climate action is cited over four times more than the global average for similar publications. This metric demonstrates the exceptional quality, influence, and global recognition of the University's work in climate science and sustainability research, emphasizing its leadership role in addressing environmental challenges through evidence-based studies.

13.1.3: Climate Action – Publications

The 72 Climate action aligned publications reflect K.R. Mangalam University's commitment to interdisciplinary approaches, combining environmental science, engineering, social sciences, and policy research to address climate challenges. Through these research efforts, the

University contributes meaningfully to knowledge generation, climate solutions, and sustainable development strategies, reinforcing its alignment with the global objectives

13.2 Low-carbon energy use

K.R. Mangalam University demonstrates a structured and measurable commitment to Climate Action through renewable energy adoption, low-carbon infrastructure, carbon-reduction strategies, and climate-focused research and outreach. For the reporting period (AY 2023–24), the University continued to expand solar energy generation, enhance campus energy efficiency, and strengthen environmental education initiatives.

13.2.1 Low Carbon Energy Tracking

Total energy used in Gigajoule (GJ) for the year 2023 & Energy used from low-carbon sources in 2023 in Gigajoule (GJ)

K.R. Mangalam University actively monitors its total energy use and low-carbon energy contribution as part of its environmental and sustainability commitments., the total energy used by the University in 2023 is estimated to be between 6,400 and 7,000 GJ, covering both grid electricity and fossil fuel consumption (primarily diesel used for DG sets). Of this, approximately 1,225 GJ of energy was generated from low-carbon sources, specifically through the 310 kW rooftop solar photovoltaic (PV) installation, which produced 340,142 kWh in 2023–24. The on-campus biogas plant generates renewable energy from organic waste, replacing conventional fossil fuels and contributing to low-carbon energy use

This clean energy generation significantly reduces the University's dependence on grid electricity, thereby offsetting its operational carbon footprint. The low-carbon energy share currently represents around 17–19% of total energy consumption, positioning K.R. Mangalam University on a clear path toward its 100% renewable energy pledge, as stated in its Sustainable Environment and Green Campus Policy.

In addition to direct solar generation, the University has also implemented energy efficiency measures—such as LED retrofitting, BLDC fan installation, sensor-based lighting, and power factor optimisation—to reduce energy intensity and improve the share of renewable energy over time. These actions are complemented by tree plantation drives, waste-to-energy initiatives, and mobility interventions that further support carbon reduction goals.

By integrating energy audits, renewable energy expansion, and operational efficiency strategies, K.R. Mangalam University demonstrates a measurable commitment to low-carbon energy use, contributing to national climate targets.

Energy Audit Report

Bio Gas Plant

Campus biogas plant converting food waste into clean energy, replacing LPG & generating organic fertiliser

Food waste inlet chamber demonstrating closed-loop waste-to-energy system

Biogas outlet & slurry discharge used as organic manure for campus horticulture sustainability

13.2.2 Low-carbon energy use

K.R. Mangalam University is actively implementing energy-efficient renovation and building initiatives across its campus to promote sustainability and reduce environmental impact and to promote low carbon energy use. The University's infrastructure strategy emphasizes retrofitting existing buildings with advanced energy-saving technologies, including LED and sensor based lighting, BLDC fans, and energy-efficient HVAC systems. Continuous energy audits guide targeted interventions to minimize consumption and optimize building performance. In new constructions, green building design principles are followed—ensuring ample natural light, thermal insulation, and the integration of renewable energy systems such as rooftop solar panels. Through these combined measures, K.R. Mangalam University demonstrates its commitment to sustainable campus development.

Sustainable Environment and Green Campus Policy

Implementation measures of energy-efficient **renovation (detailed guidelines are given in the policy**)

1. Sensor-based systems
2. Solar Panels
3. Solar Heaters
4. LED Lighting

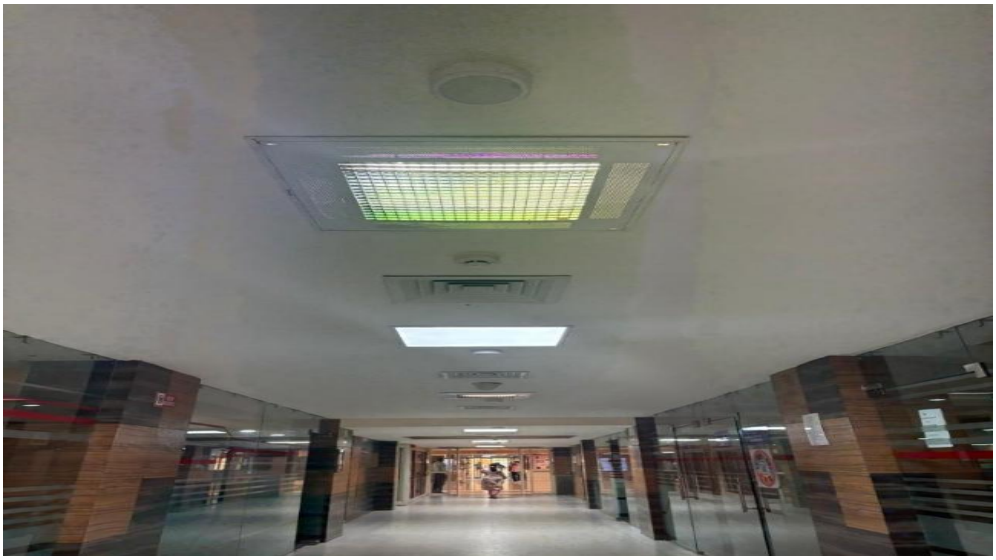
Sensor-based systems

K.R. Mangalam University prioritises energy efficiency as a core strategy for sustainable campus operations. To achieve this, the University has implemented **sensor-based systems** for both water and energy conservation. Sensor-operated taps are installed in all washrooms to minimise water wastage, while **PIR (Passive Infrared) motion sensors** are integrated at building entry points and common areas to automatically regulate lighting and reduce idle power consumption. These sensors detect human movement and control relays that switch lights or circuits on and off, thereby optimising energy usage.

Sensor-based Energy Conservation

Automated sensor-operated entry doors reducing conditioned-air loss & improving building energy efficiency

Sensor Taps in the Washrooms of the University to reduce water wastage



Motion-activated LED lighting optimizing corridor energy use through PIR sensors and smart control

Solar Panels

K.R. Mangalam University has established a **310-kW rooftop solar power generation system** across Academic Blocks A, B, and C, as well as the hostel buildings. This system provides a reliable, uninterrupted supply of clean energy during daytime hours throughout the year, significantly reducing dependence on conventional grid electricity.

Solar energy

Data for Solar Panels						
Sr.No	**Building**	**No. of Panels**	**Total no. of solar panels**	**Capacity**	**Total capacity**	**Rebate rate**
1	**A**	**157**	**984**	**310 Kw/day**	**41850 units/month**	**0.25**
2	**B**	**375**				
3	**C**	**204**				
4	**DG**	**120**				

K.R. Mangalam University has demonstrated steady progress toward achieving **Affordable and Clean Energy** by significantly enhancing the contribution of solar energy to its overall electricity consumption. the University generated a cumulative **870,125 kWh** of solar power, while in 2021–2023, this figure rose to **912,489 kWh**, reflecting an improvement of

approximately **4.9 %** in renewable energy generation. The increase indicates more efficient operation and maintenance of the installed solar photovoltaic system, supported by favourable weather conditions and optimization of load management. The University's annual solar generation now averages around **304,000 kWh**, contributing substantially to its **yearly power requirement of 1.82 million kWh**. This consistent generation pattern signifies a growing **renewable energy share** in total electricity use and directly supports the University's **low-carbon transition strategy** by reducing dependence on conventional grid supply. Through sustained efforts in clean energy adoption, K.R. Mangalam University continues to promote **energy efficiency, environmental responsibility, and climate action readiness** within its campus operations.

SOLAR PANEL DATA				
Sr. No	**Month**	**Solar Energy consumption in KWH**	**Solar Energy consumption in KWH**	**Solar Energy consumption in KWH**
1	January	25984	30390	NIL
2	February	34484	28877	NIL
3	March	32059	41233	NIL
4	April	33773	41425	20013
5	May	30546	43858	37669
6	June	21128	36766	34233
7	July	19136	25186	28081
8	August	18119	32736	28410
9	September	NIL	31637	28810
10	October	NIL	35536	30062
11	November	NIL	24634	28237
12	December	NIL	19066	28037
		215229	**391344**	**263552**
Total for 29 months = 215229+391344+263552 =870125 KWH				
Note: Sanctioned load for the Institution is 2000 Ampere				
Source: K R MANGALAM UNIVERSITY State Electricity Bills				

SOLAR PANEL DATA FROM YEAR 2021-23				
Sr. No	**Month**	**Solar Energy consumption in KWH (Year 2021)**	**Solar Energy consumption in KWH (Year 2022)**	**Solar Energy consumption in KWH (Year 2023)**
1	January	7383	23992	18169
2	February	20657	35860	29464
3	March	25815	40903	33764
4	April	33501	39729	36798
5	May	25630	34145	36308
6	June	23627	33135	31117
7	July	18385	21836	22951
8	August	29952	23911	31238
9	September	27302	26479	27498
10	October	40038	28519	29577
11	November	26160	27659	19158
12	December	25997	22668	22382
		215229	**358836**	338424
Total for 36 months = 912489KWH				
Note: Sanctioned load for the Institution is 2000 Ampere				
Yearly power Requirement: 1824978KWH				
Source: K R MANGALAM UNIVERSITY State Electricity Bills				

310-kW rooftop solar plant powering academic blocks & hostels, enabling clean-energy transition

Solar thermal system providing hot water in hostels, reducing LPG and grid energy dependence

Excess solar power integrated with the grid through net-metering, supporting regional energy sustainability

Energy-efficient LED fixtures

K.R. Mangalam University has undertaken a comprehensive replacement of conventional lighting with **energy-efficient LED fixtures** across all academic and residential blocks to minimize energy consumption and carbon emissions. This transition has significantly reduced CO_2 output, lowered maintenance costs, and enhanced overall system efficiency. As of **2 June 2023**, a total of **2,111 LED units** have been installed throughout the campus, meeting an annual lighting energy requirement of approximately **17,384 kWh**. The LED retrofit is part of the University's broader green-campus initiative focused on optimizing resource use, reducing operational energy demand, and fostering sustainable infrastructure.

LED and Energy Efficient Equipment

Energy-efficient LED lighting across campus, replacing CFL & tube lights for improved performance & reduced carbon footprint

Details Of LEDs Fitment

A Block		
Location	**Capacity In Watt**	**Total**
Canteen	20 Watt	26
Library	15 Watt	36
Ground Floor	20 Watt	25
(Admission area)		
Wash room	18 Watt	26
Moot court	15 Watt	52
Class Rooms	20 Watt	186

Corridor 1st Floor	20 Watt	24
B Block		
Class Rooms	20 Watt	111
C Block		
Basement	24 Watt	92
Basement	14 Watt	24
Basement	36 Watt	36
Class Rooms/Corrridor	20 Watt	509
Wash room	24 Watt	44
Hostel		
Boys Gym	40 Watt	19
Ground Floor corridor	24 Watt	31
1st Floor corridor	24 Watt	29
3rd Floor Washrooms & Toilets	08 Watt	112
3rd Floor Study Light	9 Watt	54
3r Floor Washbasin	5 Watt	54
4th Floor Washrooms & Toilets	08 Watt	112
4th Floor Study Light	9 Watt	54
4th Floor Washbasin	5 Watt	54
Girls Mess	20 Watt	35
Boys Mess	20 watt	26
3rd Floor inside Room (surface Light)	20 Watt	28
3rd Floor Inside Room (Tube Light)	20 Watt	54
3rd Floor Corridor	20 Watt	60
4th Floor inside Room (surface Light)	20 Watt	28
4th Floor Inside Room (Tube Light)	20 Watt	54
4th Floor Corridor	20 Watt	60
Outer Area		
A Block Terrace	400 Watt	8
B Block Terrace	400 Watt	1
C Block Terrace	400 Watt	1
Hostel Terrace	200 Watt	8
Sports Club	250 Watt	36
DG Room Terrace	200 Watt	2
		2111

13.3 Environmental Education Measures

It assesses the initiatives taken by the university to integrate environmental education into its academic, co-curricular, and community engagement activities. It evaluates how effectively the institution promotes environmental awareness, sustainability values, and responsible behavior among students, faculty, and the surrounding community.

K.R. Mangalam University has taken several measures to strengthen environmental education. Environmental studies are incorporated into the curriculum across various programs to develop awareness about climate change, conservation, and sustainable living. The university regularly organizes seminars, expert lectures, plantation drives, and clean campus campaigns to engage students in environmental protection activities. Additionally, workshops on waste management, water conservation, and renewable energy are conducted in collaboration with environmental NGOs. Through these continuous efforts, the university nurtures environmentally conscious citizens dedicated to building a sustainable future.

13.3.1 Local Education Programmes on Climate

K.R. Mangalam University is deeply committed to promoting climate awareness and sustainability education among students and the wider community. The University has organized multiple climate-focused initiatives, including 2 workshops, 1 national conference, 3 extension activities, 1 faculty development programme (FDP), 5 field visits, 11 student projects, and 3 case studies centered on climate resilience and environmental protection. These programs aim to build environmental consciousness, encourage sustainable practices, and empower participants to take proactive steps toward mitigating climate change. Through such consistent engagement, K.R. Mangalam University strengthens its role as a catalyst for local and global climate action.

Details of events and activities:

Title of the Activity	Nature of the Activity	Date of Activity	School	Links
International Conference on Advanced Materials for Green Chemistry and Sustainable Environment	Conference	Feb-15-16-2024	School of Basic & Applied Sciences	Conference Report

The Climate Reality Project	MoU	2023	School of Basic & Applied Sciences	MoU-Climate Project
Poster Making Competition on Clean Energy for a Green	Extension Activity	5-06-2024	NSS	Report-Poster Making
Plantation and Energy Efficiency Awareness Drive	Extension Activity	29-06-25	NSS, in collaboration with K R MANGALAM UNIVERSITY– KEIC STI Hub Foundation	Report Awareness Drive
Awareness on Sustainable Agriculture and Solar Pump Irrigation	Extension Activity	27-10-2023	NSS and School of Agricultural Sciences	Report-Sustainable Agriculture
Swachhta and Clean Energy Awareness Camp	Extension Activity	29-9-2023	NSS	Report-Swachhta Camp
Cleanliness Drive as a tribute to Mahatma Gandhi on his Birth Anniversary	Extension Activity	1-10-2023	NSS	Report-Cleanliness Drive
Hands-on Training for Bio-fertilizers and Biogas as Clean Energy	Workshop	07–15 May 2024	School of Agricultural Sciences	Report-Hands on Training
Workshop on Protected Cultivation and Solar-Powered Farming Solutions	Workshop	21-Sep-23	School of Agricultural Sciences	Report-Workshop
Protection and Conservation of Species in Aravali Range, Faridabad	Project	2023-24	School of Education	Project Report
Wastewater Management by Save Aravali Trust in Faridabad	Project	2023-24	School of Education	Project Report

Practical training of students: Students learning energy-efficient and sustainable farming methods through plug tray sowing.

Bio-fertilizer granules prepared during the training session, showcasing practical applications of sustainable agricultural inputs.

Community outreach in action: Sensitising farmers to climate-smart and energy-efficient agricultural practices at K R Mangalam University

Creative awareness campaign by students on renewable energy adoption and carbon-neutral lifestyles

List of Projects aligned with Climate Action

Title of the Activity	Type of Activity	Date of Activity	MoU Partner
Training on the production of organic Farm Produce and supply chain in collaboration with Dharuhera Organic Agro Farm	Project	27/03/2024 to 30/04/2024	Dharuhera Agro Pvt Ltd.
"Project on the inclination of farmers towards adoption of natural farming in southern Haryana in collaboration with Dharuhera Organic Agro Farm	Project	27/03/2024 to 30/04/2024	Dharuhera Agro Pvt Ltd.
Research project on mass multiplication of horticultural crops through tissue culture techniques (Activity 1 under new MoU with Neer Care Agro pvt. Ltd.)	Project	3/7/2024	Neer Care Agro pvt. Ltd.
Project on Processing of mustard seed: FROM SEED TO BOTTLE in collaboration with Verdanta Food industry	Project	3/5/2024	Richa Food Industry (Verdanta)
Training on Fruit and Vegetable Preservation Techniques (under new MoU with Verdanta Food industry,	Project	05/03/2024 to 05/04/2024	Richa Food Industry (Verdanta)
Training and Project Work on food processing (extraction of juice from various fruits & and their preservation methods) at Verdanta Food Industry	Project	05/03/2024 to 05/04/2024	Richa Food Industry (Verdanta)
Identification of insects on sesional vegetables and their management at farmer's field in-collaboration with Insecticides India ltd, Lusa Tower, Azadpur, New Delhi-110033	Project	12/30/2023	Insecticide India Ltd.
Field Project on transfer of tissue culture plants in soilless substrates and hardening of plantlets under protected environment	Project	30-11-23 to 30-12-23	Neer Care Agro pvt. Ltd.

Establishment of a small functional model at K R Mangalam University on Litopenaeus Vannammi (prawn culture) in-collaboration with Growel Formulation Pvt Ltd.	Project	Oct 2023 to Nov 2023	Growel Formulation Pvt Ltd.
Project on salt water prawn farming (fish farming) at Rewari lakhnor farmer's unit in-collaboration with Growel Formulation Pvt Ltd.	Project	06-09-23 to 05-10-23	Growel Formulation Pvt Ltd.
Project work in collaboration with save Aravali (MoU partner)	Project work (2)	04/03/24-30/05/24	Save Aravali Trust

13.3.2 Climate Action Plan shared

K.R. Mangalam University has established a comprehensive Climate Action Plan embedded within its Integrated Sustainable Environment and Green Campus Policy. This strategic framework outlines clear goals and actionable measures for reducing greenhouse gas emissions, enhancing energy efficiency, promoting renewable energy use, and implementing effective waste management and green infrastructure initiatives. The plan also emphasizes climate resilience, environmental education, and continuous monitoring of sustainability progress. Through this structured and forward-looking approach, K.R. Mangalam University reaffirms its dedication to environmental stewardship and long-term climate sustainability.

K.R. Mangalam University has adopted a clear divestment commitment as part of its broader sustainability and climate action strategy. The University's Carbon Divestment and Renewable Commitment Policy explicitly state that no institutional endowment, surplus funds, procurement contracts, or CSR collaborations shall be linked to coal mining, coal-based power generation, crude oil exploration, or other carbon-intensive energy industries. Instead, the University prioritises partnerships with renewable technology providers, clean energy start-ups, and low-carbon service providers. This ensures that institutional financial and operational decisions align with a low-carbon future, supporting India's clean energy transition. The policy reflects a formal and proactive stance on fossil fuel divestment

Sustainable Environment and Green Campus Policy
Carbon Divestment and Renewable Commitment Policy

13.3.3 Co-operative Planning for Climate Change

It assesses how the university collaborates with local authorities, organizations, and the community to plan and respond to climate change challenges. It emphasizes cooperative initiatives such as disaster management drills, awareness campaigns, and joint programs aimed at enhancing climate resilience and preparedness.

K.R. Mangalam University actively engages in cooperative planning for climate change by collaborating with local government bodies and environmental departments. The university has conducted fire evacuation and safety drills in association with the Sohna Fire Department, training over 250 participants in emergency response and disaster management. Additionally, the campus implements rainwater harvesting systems, wastewater recycling through the STP, and tree plantation drives to mitigate the impacts of climate change. These collective actions reflect the university's proactive approach to community partnership and sustainable environmental management.

K.R. Mangalam University undertakes regular energy reviews and audits to systematically identify areas of highest energy waste and prioritise efficiency interventions. As part of the comprehensive Energy Audits, consumption patterns are mapped across academic blocks, hostels, and utility systems. The data-driven insights from the Audit reports has informed targeted action plans focusing on lighting retrofits, HVAC system optimisation, and the replacement of inefficient fans and equipment. In addition, periodic performance assessments of transformers, DG sets, and solar power generation help detect load imbalances, avoid leakage losses, and optimize energy use. These structured energy reviews enable the institution to pinpoint and address wastage sources proactively, ensuring continuous improvement in operational efficiency.

Energy Audit Report 2023

Energy Audit Report 2024

13.2.2: Low-Carbon Energy Use

This metric assesses the University's **use of low-carbon and renewable energy sources** as part of its strategy to reduce greenhouse gas emissions and promote environmental sustainability. It focuses on tracking energy generation from clean sources such as solar power

and comparing it with fossil fuel consumption to evaluate overall energy efficiency and sustainability.

Renewable Energy Generation

K.R. Mangalam University demonstrates a comprehensive low-carbon transition through renewable energy deployment, waste-to-energy systems, energy-efficiency upgrades, emission monitoring, and sustainable mobility planning. The campus operates a 310-kW rooftop solar PV system across academic and hostel blocks, generating ≈ 340,142 kWh (Jan–Dec 2024) and 118,249 kWh (Jan–Apr 2025), which is wheeled to the grid to reduce grid-electricity dependence. Complementing this, a 100 kg/day biogas plant converts food waste from hostels and cafeterias into clean energy—equivalent to one LPG cylinder every three days—while slurry is reused as organic fertilizer, strengthening the zero-waste cycle. Energy-efficiency measures include complete transition to LED fixtures (delivering an estimated 28% energy saving), 135+ sensor-based taps and automatic doors to reduce idle consumption, and power factor optimization maintained between 0.94–0.99 through capacitor banks. As part of emission control, diesel consumption has been reduced to 122 kL (2024–25) with quarterly monitoring. This, combined with renewable energy and biogas, avoids ≈ 280 tonnes of CO_2e emissions annually, supported by systematic energy audits that track usage, GHG indices, and per-capita emissions. In mobility, the University promotes low-carbon transport through EV charging stations, restrictions on diesel vehicles, and the “Ride Green Initiative”, which encourages cycling, pedestrian-friendly movement, and efficient university bus routing to minimize fuel consumption and air pollution. Overall, these integrated strategies underscore the University's measurable progress toward a cleaner, energy-efficient, and climate-responsible campus.

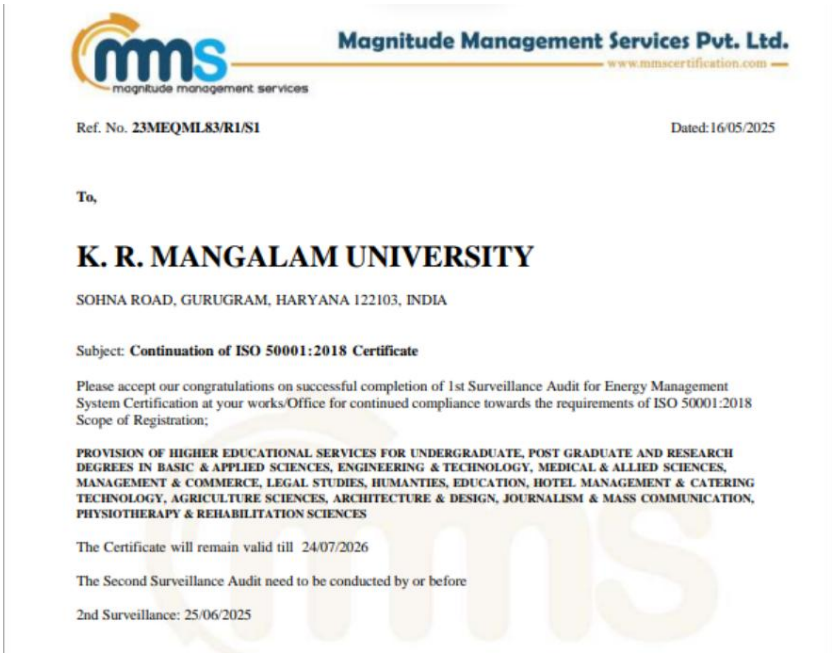
K.R. Mangalam University has a comprehensive energy efficiency plan designed to systematically reduce overall energy consumption across academic, residential, and administrative infrastructure. Guided by findings from the Energy Audit, the University has identified key consumption hotspots and developed a phased action plan to address them through technological upgrades, operational optimization, and behavioral change initiatives.The University is committed to sustainable campus operations and reflects this in its energy strategy and actively integrates alternative energy sources and energy conservation mechanisms.

The University has set progressive targets through 2030, aiming to achieve a 10 % reduction in lighting energy consumption by 2027 through complete LED retrofits and sensor-based controls, a 5 % reduction in HVAC energy use by 2027 through variable frequency drives and maintenance optimisation, installation of additional rooftop solar panels to supply 30 % of total electricity demand by 2027, and a 25 % reduction in overall energy intensity (kWh per m²) within three years of baseline measurement. These measures, supported by annual energy audits and continuous monitoring, are expected to significantly reduce energy use and fuel dependence, improve operational efficiency, and enhance the share of renewable energy in the total energy mix.

Energy Audit Report 2023

Energy Audit Report 2024

Sustainable Environment and Green Campus Policy



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Ref. No. **23MEQML83/R1/S1** Dated:16/05/2025

To,

K. R. MANGALAM UNIVERSITY

SOHNA ROAD, GURUGRAM, HARYANA 122103, INDIA

Subject: **Continuation of ISO 50001:2018 Certificate**

Please accept our congratulations on successful completion of 1st Surveillance Audit for Energy Management System Certification at your works/Office for continued compliance towards the requirements of ISO 50001:2018 Scope of Registration;

PROVISION OF HIGHER EDUCATIONAL SERVICES FOR UNDERGRADUATE, POST GRADUATE AND RESEARCH DEGREES IN BASIC & APPLIED SCIENCES, ENGINEERING & TECHNOLOGY, MEDICAL & ALLIED SCIENCES, MANAGEMENT & COMMERCE, LEGAL STUDIES, HUMANTIES, EDUCATION, HOTEL MANAGEMENT & CATERING TECHNOLOGY, AGRICULTURE SCIENCES, ARCHITECTURE & DESIGN, JOURNALISM & MASS COMMUNICATION, PHYSIOTHERAPY & REHABILITATION SCIENCES

The Certificate will remain valid till 24/07/2026

The Second Surveillance Audit need to be conducted by or before

2nd Surveillance: 25/06/2025

13.2.3 Co-operative Planning for Climate Change Disasters

K.R. Mangalam University prioritizes climate resilience and disaster preparedness through active collaboration with local authorities and emergency response agencies. In partnership with the Sohna Fire Department, the University successfully conducted a fire evacuation drill, training 258 individuals in safety protocols and emergency response procedures. Beyond immediate safety measures, the University has implemented sustainable infrastructure

solutions such as a Sewage Treatment Plant (STP) and rainwater harvesting systems to enhance water management and mitigate climate-related risks. These coordinated efforts demonstrate K.R. Mangalam University's commitment to proactive disaster management, community safety, and sustainable resilience

13.3.4 Inform and Support Government

K.R. Mangalam University demonstrates strong alignment with government sustainability policies and environmental regulations through active collaboration and compliance initiatives. The University strictly follows the guidelines of the Haryana State Pollution Control Board (HSPCB) by regularly monitoring air and water quality and ensuring efficient waste management practices. It has also secured a No Objection Certificate (NOC) from the Forest Department, affirming its commitment to protecting nearby green zones during infrastructural development. Furthermore, in partnership with the National Highways Authority of India (NHAI), the University has implemented robust flood water management systems, including well-designed drainage networks and rainwater harvesting structures, to prevent waterlogging and enhance groundwater recharge. These measures underscore K.R. Mangalam University's dedication to ecological responsibility, regulatory compliance, and sustainable campus development.

In addition to institutional policies, the University has demonstrated strong research engagement in clean energy domains, with 57 publications in 2024 and 36 in 2023 related to sustainability, renewable energy, and green technologies. This research outputs contribute to the knowledge base that can inform evidence-based policymaking at both state and national levels. The University has also hosted conferences, workshops, and faculty development programs on renewable energy and energy efficiency, including the *International Conference on Advanced Materials for Green Chemistry and Sustainable Environment (2024)*, which involved local industry experts and practitioners. Furthermore, partnerships such as the MoU with The Climate Reality Project (2023) strengthen the University's capacity to support policy advocacy and outreach on clean energy. Through these combined efforts in policy alignment, applied research, stakeholder engagement, and knowledge transfer, K.R. Mangalam University plays a proactive role in informing and supporting clean energy and energy-efficient technology policy development

Conference Link

MOU- Climate Project

13.3.5 Environmental Education – Collaboration with NGO

K.R. Mangalam University demonstrates its commitment to energy efficiency and clean-energy advocacy through active engagement with industry, academic networks, and community stakeholders. The University hosted the *International Conference on Advanced Materials for Green Chemistry and Sustainable Environment* (February 2024), convening industry professionals, researchers, and academic leaders to exchange workable strategies on resource-efficient technologies, renewable energy systems, and sustainable innovation. Further strengthening its outreach, the University formalised a collaboration with **The Climate Reality Project (2023)** to co-develop awareness programmes, training initiatives, and capacity-building sessions focused on clean energy and climate action.

These initiatives provide external stakeholders—including industry representatives and community participants—opportunities to access expert-led workshops, research insights, and collaborative learning platforms that support adoption of energy-efficient practices and renewable energy solutions. Collectively, they position K.R. Mangalam University as a regional knowledge catalyst for advancing sustainable energy transition.

In addition, the University organised an educational visit to Tosh Dam and the Jirah Hydro Power Plant, enabling engineering students to gain practical exposure to real-time hydroelectric systems such as penstock networks, turbine assemblies, and control-operation mechanisms. This experiential learning initiative reinforced the principles of affordable, reliable, and clean energy, bridging classroom knowledge with applied infrastructure systems. Such learning pathways enhance students' technical competencies and empower them to actively contribute to future clean-energy transitions and low-carbon development pathways.

13.4 Commitment to Carbon Neutral University

K.R. Mangalam University is deeply committed to achieving carbon neutrality through a strategic and multi-dimensional approach outlined in its Integrated Sustainable Environment and Green Campus Policy. The University actively implements initiatives such as solar power generation, rainwater harvesting, and comprehensive solid and liquid waste management to reduce greenhouse gas emissions and promote sustainable resource use. Regular plantation drives, energy-efficient infrastructure, and digital (paperless) administrative processes further

contribute to lowering its carbon footprint. By continuously monitoring progress and integrating eco-friendly technologies across operations, K.R. Mangalam University is steadily advancing toward a carbon-neutral campus, exemplifying leadership in environmental sustainability within higher education.

13.4.1 Commitment to Carbon Neutral University

K.R. Mangalam University is firmly committed to achieving a carbon-neutral campus through a comprehensive and strategic approach embedded in its Integrated Sustainable Environment and Green Campus Policy. This policy guides the University's sustainability initiatives, emphasizing energy conservation, solar power utilization, waste segregation, green landscaping, and efficient water recycling through Sewage Treatment Plant (STP) systems. The University also undertakes regular tree plantation drives, campaigns to reduce plastic usage, and awareness programs that encourage environmentally responsible behavior among students and staff. Through these sustained efforts, K.R. Mangalam University continues to advance toward carbon neutrality, reflecting its dedication to environmental stewardship and sustainable campus development.

K.R. Mangalam University has made a formal public pledge to transition toward 100% renewable energy, aligning its institutional vision with India's National Renewable Energy Mission and SDG 7 (Affordable and Clean Energy). As stated in the University's *Sustainable Environment and Green Campus Policy* , the commitment extends beyond campus operations, encouraging partner schools, affiliated institutions, and local panchayat bodies to adopt clean energy solutions through collaborations, MoUs, workshops, and model green campus visits. This pledge is supported by concrete actions outlined in the University's Energy, Environmental, and Green Audit Reports, which include the installation of a 310-kW rooftop solar power system, a target of meeting 30% of energy demand through renewables by 2027, and long-term efforts toward a Net Zero campus. By combining on-campus renewable energy expansion with active community engagement, the University demonstrates a strategic and public commitment to achieving 100% renewable energy, advancing national energy transition goals and contributing meaningfully to climate action.

Sustainable Environment and Green Campus Policy

13.4.2: Achieve by Date

This metric highlights the institution's structured timeline and strategic roadmap for achieving carbon neutrality and sustainability goals. It emphasizes measurable targets, continuous monitoring, and accountability through well-defined environmental initiatives. K.R. Mangalam University, under its **Integrated Sustainable Environment and Green Campus Policy**, has established a phased plan to advance toward carbon neutrality. The policy outlines specific long-term goals such as increased renewable energy utilization, waste reduction, and efficient management of water and energy resources.

K.R. Mangalam University has made a formal public pledge to transition toward 100% renewable energy, aligning its institutional vision with India's National Renewable Energy Mission and SDG 7 (Affordable and Clean Energy). As stated in the University's *Sustainable Environment and Green Campus Policy* , the commitment extends beyond campus operations, encouraging partner schools, affiliated institutions, and local panchayat bodies to adopt clean energy solutions through collaborations, MoUs, workshops, and model green campus visits. This pledge is supported by concrete actions outlined in the University's Energy, Environmental, and Green Audit Reports, which include the installation of a 310-kW rooftop solar power system, a target of meeting 30% of energy demand through renewables by 2027, and long-term efforts toward a Net Zero campus. By combining on-campus renewable energy expansion with active community engagement, the University demonstrates a strategic and public commitment to achieving 100% renewable energy, advancing national energy transition goals and contributing meaningfully to climate action. Sustainable Environment and Green Campus Policy