University : Karunya Institute of Technology and Sciences
Country : India
Web Address : www.karunya.edu

[2] Energy and Climate Change (EC)

[2.16] Impact of Energy and Climate Change programs in supporting the Sustainable Development Goals (SDGs)

Karunya Institute of Technology and Sciences (KITS) demonstrates a strong institutional commitment to the United Nations Sustainable Development Goals (SDGs) through its comprehensive Energy and Climate Change (EC) initiatives. The University integrates sustainability into every aspect of campus operations, academics, and community engagement — reducing its carbon footprint, promoting renewable energy, and fostering environmental consciousness among students and staff.

KITS's programs emphasize smart energy management, clean energy production, digital monitoring systems, climate-resilient infrastructure, and community outreach, contributing directly to global sustainability efforts.

Key Energy and Climate Change Initiatives and SDG Linkages

1. Installation of Solar Power Plant Data Logging Systems

A fully automated data logging system records and monitors energy generation from the campus solar power plant. Real-time dashboards and analytics evaluate energy output, efficiency, and CO_2 reduction to optimize renewable energy use and system maintenance.

Supports SDG 7 – Affordable and Clean Energy, SDG 9 – Industry, Innovation, and Infrastructure, SDG 12 – Responsible Consumption and Production, and SDG 13 – Climate Action.

2. Automatic Lighting Control Systems

Smart lighting systems with motion sensors and ambient light detectors regulate illumination automatically in academic and administrative buildings. ICT-based platforms allow remote scheduling and monitoring to reduce energy wastage and promote efficient energy management.

Supports SDG 7 – Affordable and Clean Energy, SDG 9 – Industry, Innovation, and Infrastructure, SDG 11 – Sustainable Cities and Communities, SDG 12 – Responsible Consumption and Production, and SDG 13 – Climate Action.

3. Participation in NASA's AERONET (AErosol RObotic NETwork)

KITS collaborates with NASA's AERONET, a global aerosol monitoring network, using ICT-enabled photometric instruments to collect and transmit atmospheric data in real time. This enhances global understanding of climate patterns and air quality.

Supports SDG 3 – Good Health and Well-Being, SDG 9 – Industry, Innovation, and Infrastructure, SDG 13 – Climate Action, and SDG 17 – Partnerships for the Goals.

4. Digital Weather Logging Systems

A network of weather log stations records temperature, humidity, rainfall, and solar irradiance, automatically transmitting data for climate analysis and student research. These systems promote environmental literacy and preparedness for climate variability.

Supports SDG 4 – Quality Education, SDG 9 – Industry, Innovation, and Infrastructure, SDG 11 – Sustainable Cities and Communities, SDG 13 – Climate Action, and SDG 15 – Life on Land.

5. Remote Monitoring of Groundwater Levels

A low-cost IoT-based system measures groundwater recharge capacity through pressure sensors. Hourly and daily data transmission enables sustainable groundwater use and prevents over-extraction, especially in agricultural contexts.

Supports SDG 6 – Clean Water and Sanitation, SDG 9 – Industry, Innovation, and Infrastructure, SDG 12 – Responsible Consumption and Production, SDG 13 – Climate Action, and SDG 15 – Life on Land.

6. Real-Time Monitoring of Solar Data for Research

The Division of Electrical and Electronics Engineering (EEE) operates a 3 kW solar photovoltaic system dedicated to research and academic applications. Real-time generation data are analyzed through ICT-based interfaces to evaluate solar performance, load characteristics, and energy efficiency. This initiative integrates renewable energy monitoring directly into engineering education and fosters student-led sustainability projects.

Supports SDG 4 – Quality Education, SDG 7 – Affordable and Clean Energy, SDG 9 – Industry, Innovation, and Infrastructure, SDG 12 – Responsible Consumption and Production, and SDG 13 – Climate Action.

Sl. No.	Program / Initiative	Relevant Sustainable Development Goals (SDGs)
1	Solar Power Plant Data Logging System	SDG 7 – Affordable & Clean Energy SDG 9 – Industry, Innovation & Infrastructure SDG 12 – Responsible Consumption & Production SDG 13 – Climate Action
2	Automatic Lighting Control Systems	SDG 7 – Affordable & Clean Energy SDG 9 – Industry, Innovation & Infrastructure SDG 11 – Sustainable Cities & Communities SDG 12 – Responsible Consumption & Production SDG 13 – Climate Action
3	Participation in NASA's AERONET (AErosol RObotic NETwork)	SDG 3 – Good Health & Well-Being SDG 9 – Industry, Innovation & Infrastructure SDG 13 – Climate Action SDG 17 – Partnerships for the Goals
4	Digital Weather Logging System	SDG 4 – Quality Education SDG 9 – Industry, Innovation & Infrastructure SDG 11 – Sustainable Cities & Communities SDG 13 – Climate Action SDG 15 – Life on Land
5	Remote Monitoring of Groundwater Levels	SDG 6 – Clean Water & Sanitation SDG 9 – Industry, Innovation & Infrastructure SDG 12 – Responsible Consumption & Production SDG 13 – Climate Action SDG 15 – Life on Land
6	Real-Time Solar Data Monitoring for Research (3 kW EEE System)	SDG 4 – Quality Education SDG 7 – Affordable & Clean Energy SDG 9 – Industry, Innovation & Infrastructure SDG 12 – Responsible Consumption & Production SDG 13 – Climate Action
Through these initiatives, KITS contributes directly to the following SDGs: SDG 3, SDG 4, SDG 6, SDG 7, SDG 9, SDG 11, SDG 12, SDG 13, SDG 15, and SDG 17.		