SDG 7

AFFORDABLE AND CLEAN ENERGY

Institutional Impact Report 2026

Al-Iraqia University

Renewable Energy • Energy Efficiency • Smart Buildings • Low-Carbon Campus

Al-Iraqia University advances SDG 7 through on-campus solar generation, energy-efficient equipment, smart-building measures, green-building elements, and academic programs that build capacity in renewable energy and energy efficiency.

Reporting: year 2025–2026



1. Executive Summary

Al-Iraqia University advances SDG 7 through on-campus solar generation, energy-efficient equipment, smart-building measures, green-building elements, and academic programs that build capacity in renewable energy and energy efficiency. This report follows an evidence-led structure and relies on uploaded institutional documentation. All claims are limited to what the supplied evidence supports.

Institutional Capacity & Impact at a Glance

383.8 kW	560,468 kWh	6.7%	73%
installed solar PV capacity	annual renewable electricity generation	renewable generation / annual electricity use	energy-efficient appliances reported

Institutional contribution at a glance

Al-Iraqia University promotes clean and sustainable energy through renewable energy systems, energy-efficient technologies, smart infrastructure, and academic programs.

- **Renewable Energy: Solar PV systems are installed across several colleges, including Engineering, Medicine, Media, Islamic Sciences, and Dentistry. At the College of Engineering, a solar system supports the internal network and internet services during power outages, with participation from staff and Electrical Engineering students.**

- **Energy Efficiency: Approximately 73% of campus appliances are reported as energy efficient, including LED lighting and inverter air-conditioning systems.**

- **Smart and Green Infrastructure: The university applies automated lighting, centralized monitoring, solar energy systems, efficient lighting, and green spaces to improve campus energy performance.**

- **Education and Capacity Building: Academic programs cover renewable energy, energy storage and efficiency, smart grids, and sustainable engineering, strengthening students' knowledge and practical skills.**

Overall, these initiatives demonstrate Al-Iraqia University's commitment to renewable energy, energy efficiency, and sustainable campus development.



***Figure 1. Solar Energy System at Al-Iraqia University*.**

Link: https://www.facebook.com/100057399282133/posts/887170936539541/?mibextid=wwXIfr&rdid=UNCTHJ16g2GkUXzN#

2. Energy Efficiency, Conservation, and Sustainable Energy Transition

The College of Engineering at Al-Iraqia University has adopted an integrated approach to sustainable energy transition and energy conservation, combining renewable energy generation, energy-efficiency measures, and intelligent energy management systems. These efforts aim to reduce dependence on conventional electricity sources, optimize energy consumption, and improve the operational efficiency and continuity of essential services across college facilities.

Under the direct supervision of the Dean of the College of Engineering, Prof. Dr. Malik Abdul Razzaq Jabbar, the College implemented a solar photovoltaic (PV) system to provide an alternative source of electricity during power outages. The solar PV system is currently in operation and is being utilized to generate clean electricity from solar energy, contributing to the College's transition toward renewable and environmentally sustainable energy sources. The system also supports essential infrastructure, particularly the College's internal network and internet services, helping maintain their continuous operation throughout working hours.

In parallel with solar energy deployment, the College has implemented measures to improve energy efficiency and demand management. A control system has been introduced to manage high-load electrical equipment, particularly air-conditioning units, according to scheduled operating periods. In addition, sensors have been installed across College facilities to support more efficient and responsive operation of electrical systems. These measures are intended to minimize unnecessary energy consumption and improve the management of electricity demand.

The College also promotes broader energy-conservation practices through the efficient operation of lighting, cooling, laboratory equipment, and other energy-consuming systems. The integration of monitoring, control, scheduling, and sensor-based technologies provides a foundation for a more systematic approach to energy management, allowing energy use to be better aligned with actual operational requirements.

An important academic dimension of the initiative is the involvement of faculty members and students from the Department of Electrical Engineering in its implementation. The work was carried out with the participation of Dr. Hussein Jumaa Jaber, Dr. Bashar, faculty members, and students, providing an opportunity to connect theoretical engineering knowledge with practical applications in renewable energy, electrical systems, automation, and energy management.

The integration of solar power generation, high-load management, scheduled operation, and sensor-based control demonstrates a comprehensive approach that extends beyond renewable electricity generation to include the efficient management and conservation of energy. The adoption of solar energy and alternative green technologies supports the College's environmental responsibilities and represents a key component of its strategic direction toward sustainable campus operations.

Activity Objective:

To reduce electricity consumption and dependence on conventional energy sources through the generation and utilization of clean solar electricity, intelligent load management, and energy-efficient operational practices; to ensure the continuity of essential academic and digital services; and to enhance the operational and environmental performance of College facilities while providing students with practical experience in sustainable energy technologies.

Link: https://www.facebook.com/100057399282133/posts/934954845094483/?mibextid=wwXIfr&rdid=rut8IOaD94drIral#





Figure 2. The images show the College of Engineering's integrated solar energy and smart energy management system, including PV panels, inverters, and load-control systems designed to generate clean electricity and improve energy efficiency.

3. Solar Energy Transition at the College of Medicine

As part of its strategic approach toward clean energy and sustainable campus development, the College of Medicine at Al-Iraqia University has initiated a solar energy project designed to supply classrooms and scientific laboratories with clean and renewable electricity.

On 5 October 2026, the Dean of the College of Medicine, Prof. Dr. Ahmed Nizar Al-Dabbagh, accompanied by the Assistant Dean for Administrative Affairs, Prof. Dr. Haifa Mahmoud Fahad, conducted a field inspection of the designated site for the planned installation of the solar photovoltaic system.

The project represents an important step in the College's gradual transition toward solar energy and more efficient use of electricity. By integrating renewable energy into its educational infrastructure, the College aims to reduce dependence on conventional electricity sources, promote energy conservation, and support the continuity of electricity supply for classrooms and laboratories.

The initiative also reflects the College's broader commitment to environmental responsibility and sustainable resource management. The adoption of solar energy is expected to contribute to a healthier and more sustainable university environment while supporting the continuity and reliability of the educational process.

Activity Objective:

To expand the use of clean and renewable energy within the College of Medicine, improve energy efficiency, reduce reliance on conventional electricity sources, and support the continuous operation of classrooms and scientific laboratories through the gradual integration of solar energy into campus infrastructure.

Link: https://medic.aliraqia.edu.iq/987523747



Figure 3. Solar PV installation site at the College of Medicine, Al-Iraqia University, supporting the College's transition toward clean and renewable energy.

4. Sustainable Solar-Powered Parking Facility at the College of Engineering

Under the direct supervision of the Dean of the College of Engineering, Prof. Dr. Malik Abdul Razzaq Jabbar, the College of Engineering at Al-Iraqia University has completed a sustainable solar-powered parking facility designed to serve newly appointed faculty members while simultaneously contributing to clean electricity generation.

The facility integrates solar photovoltaic (PV) panels into the parking structure, combining functional campus infrastructure with renewable energy generation. The system has an installed capacity of 45 kW, increasing the College's total solar power capacity to approximately 150 kW (600 A).

This project represents a significant step in the College's transition toward sustainable energy by utilizing available campus infrastructure for clean electricity generation. It also demonstrates the practical integration of renewable energy technologies into university facilities, contributing to reduced dependence on conventional electricity sources and supporting the College's strategic direction toward energy efficiency and sustainable campus development.

Activity Objective:

To expand solar energy generation at the College of Engineering, integrate renewable energy into campus infrastructure, and provide sustainable facilities that combine practical services with clean electricity generation.

Link: https://www.facebook.com/100057399282133/posts/1167403665182932/?mibextid=wwXIfr&rdid=sZ3ml2d2pcHT8uOM#



Figure 4. Sustainable solar-powered parking facility at the College of Engineering, generating 45 kW of clean electricity.

6. Smart and Green Infrastructure

Smart-building implementation includes automated lighting and centralized monitoring, while green-building elements include solar panels, efficient lighting, indoor gardens and open green areas. Solar-powered EV charging stations extend clean-energy use into mobility and demonstrate the integration of energy and infrastructure planning.

7. Education, Research and Capacity Building

The academic evidence includes Renewable Energy, Energy Storage and Efficiency, Renewable Energy and Smart Grid, Sustainable Engineering and Environmental Design, and related engineering subjects. Energy and Renewable Energy Engineering is also identified as a sustainability-related study program, connecting campus operations with formal teaching and professional capacity building.

8. Enhancing Energy Efficiency in Support of Sustainable Development

As part of its institutional commitment to sustainability and the efficient management of energy resources, Al-Iraqia University / College of Engineering has obtained the ISO 50001:2018 Energy Management System Certification, covering the rationalization and optimization of electrical energy and fossil fuel (diesel) consumption.

This certification demonstrates the College’s commitment to adopting a systematic and internationally recognized approach to energy management, with a focus on improving energy performance, enhancing energy efficiency, and reducing unnecessary energy consumption. These efforts contribute directly to the United Nations Sustainable Development Goal of Affordable and Clean Energy by promoting responsible energy management and the continuous improvement of energy efficiency.

Furthermore, the implementation of the ISO 50001:2018 Energy Management System supports Responsible Consumption and Production by encouraging the efficient and sustainable use of energy resources. It also contributes to Climate Action through efforts to reduce fossil fuel consumption, minimize associated environmental impacts, and support the reduction of greenhouse gas emissions.

The achievement of this international certification reflects Al-Iraqia University’s ongoing commitment to integrating sustainability principles into its institutional operations. It also highlights the College of Engineering’s role in promoting energy-efficient and environmentally responsible practices and advancing the broader objectives of the United Nations Sustainable Development Goals.



Figure 5. ISO 50001:2018 Energy Management System Certification awarded to Al-Iraqia University / College of Engineering, reflecting the University's institutional commitment to enhancing energy efficiency, promoting sustainable energy management, and supporting the United Nations Sustainable Development Goal of Affordable and Clean Energy.

9. SDG 7 Evidence and Impact Matrix

Impact area	Verified university evidence	Contribution to SDG 7
Renewable electricity	383.8 kW PV; 560,468 kWh/year	Expands clean-energy supply and reduces fossil-energy dependence.
Energy efficiency	73% efficient appliances; LED and inverter systems	Reduces electricity demand and operating emissions.
Smart buildings	Automated lighting, monitoring, daylighting and natural ventilation	Improves energy performance through intelligent infrastructure.
Clean mobility energy	Solar-powered EV charging	Links renewable electricity to low-carbon transport.
Academic capacity	Renewable-energy courses and study programs	Builds technical knowledge for the energy transition.