



University:Northern Technical UniversityCountry:IraqWeb Address :<a href="https://www.ntu.edu.iq">https://www.ntu.edu.iq</a>

## SDG 7.2: University measures towards affordable and clean energy

# 7.2.2: Does your university as a body have plans to upgrade existing buildings to higher energy efficiency?

## Energy Efficiency Initiative at Northern Technical University

Northern Technical University (NTU) is embarking on a strategic journey towards enhanced energy efficiency, embracing the principles of green building as a fundamental part of its vision. This initiative underscores the critical importance of energy conservation and management as the university seeks to foster a culture of energy saving throughout its campus community.

Transitioning from conventional appliances and systems, NTU is implementing energy-efficient alternatives to set a benchmark in sustainable operations. This commitment aims to create a sustainable university ecosystem that is reliant on clean and affordable energy by the year 2030. This endeavor aligns with the United Nations Sustainable Development Goal 7 (UN SDG-7), which seeks to significantly reduce energy consumption while promoting the adoption of renewable energy sources and energy-efficient technologies.

#### **Goals and Targets**

The primary target established by NTU is to achieve 100% utilization of energy-efficient appliances across all university facilities by 2030. This ambitious goal signifies a substantial milestone in NTU's sustainability agenda and dedication to environmental stewardship.

#### **Energy Consumption Program Overview**

NTU's energy consumption program is structured around two core segments:

#### • Awareness Campaign:

Objective: This educational initiative is designed to inform and engage students, staff, and the surrounding community about the importance of energy conservation, climate change, and global warming.

Methods: The campaign employs a variety of communication channels, including posters, workshops, conferences, and social media platforms, to disseminate knowledge and raise awareness about energy reduction practices. By fostering a deeper understanding of energy management, NTU aims to cultivate a proactive approach to sustainability within the campus populace.





• Technical Industrial Applications:

Objective: This segment is focused on enriching the academic experience of students through hands-on projects that provide practical learning experiences during their undergraduate studies.

Collaborations: NTU will facilitate applied research projects in collaboration with private and public sector entities, including ministries of electricity and oil. These partnerships are designed to integrate theoretical knowledge with real-world applications, offering students vital insights into energy management solutions while contributing to the university's sustainability goals.

In a concerted effort to phase out conventional appliances, Northern Technical University (NTU) envisions replacing outdated systems with high-efficiency alternatives by 2030. This strategic shift aims to significantly reduce electricity usage while advancing energy conversion and management practices across the campus.

NTU is committed to enhancing its energy savings initiatives by meticulously focusing on energy management. Every segment of the institution is encouraged to assess its energy utilization and identify opportunities for conservation through various measures, including improved insulation, the use of LED lighting, and the integration of sustainable technologies.

In 2021, the average percentage of energy-efficient appliances used at Northern Technical University was approximately 71 %. Whereas, in 2022 was about 76%.

Then, in 2023, Northern Technical University (NTU) significantly intensified its commitment to sustainability, making substantial strides toward becoming a green university. Under the leadership of the President, the university prioritized research and innovation in energy efficiency, crystallizing its vision for a more sustainable campus.

As a testament to this commitment, NTU successfully transitioned to low-energy-consuming devices, achieving an impressive of more than 90% utilization rate. This shift not only reflects the university's dedication to reducing its carbon footprint but also reinforces its role as a leader in sustainable practices within the academic community.

The administration has actively encouraged collaboration among faculty, researchers, and students to explore and implement cutting-edge solutions that promote energy conservation. By prioritizing sustainable technologies and practices, NTU has not only enhanced its energy management strategies but has also created an environment that fosters eco-consciousness and responsibility among all campus stakeholders.

This concerted effort positions Northern Technical University at the forefront of the sustainability movement in higher education, exemplifying how proactive measures can yield meaningful environmental impacts while serving the educational mission of the institution.





# Sustainability Initiatives at Northern Technical University (NTU)

- Northern Technical University (NTU) has successfully advanced its sustainability goals through a series of strategic implementations across its campus:
- Solar Energy Integration: NTU has installed solar panels on campus buildings, providing a reliable and renewable source of energy. This initiative significantly reduces reliance on conventional energy sources and lowers overall energy costs.
- Wind Energy Utilization: A wind turbine has been installed to supply electrical power for mobile charging stations and fan operations within the Renewable Energy Laboratory Buildings, enhancing the university's commitment to renewable energy.
- Water Conservation Practices: Effective water conservation measures have been adopted across the campus, promoting the efficient use of this vital resource and fostering a culture of sustainability among students and faculty.
- Expansion of Green Spaces: The university has increased its green areas, which not only mitigate indoor health risks but also enhance the overall campus environment, providing spaces for recreation and relaxation.
- Energy-Efficient Climate Control: Given Iraq's hot and dry summer climate, the deployment of inverter split units has proven pivotal in promoting energy efficiency, contributing to the university's green building initiatives.
- Enhanced Energy Management: Energy management strategies have been refined through the incorporation of better insulation, LED lighting, and the application of sustainable technologies, thereby improving overall energy efficiency.
- Natural Lighting Solutions: The strategic use of windows and skylights has facilitated natural lighting throughout campus buildings, reducing dependence on artificial lighting and decreasing the need for heating during winter months.
- Rainwater Harvesting System: implement a rainwater harvesting system that is collect and reuse rainwater, leading to substantial water and energy conservation. This harvested water is utilized for landscape irrigation, cooling towers in HVAC systems, and other applications aligned with local environmental policies.
- Improved Ventilation: The installation of vents and operable windows has improved air circulation across campus facilities, enhancing heating and cooling efficiency while reducing reliance on HVAC systems through the effective use of natural ventilation techniques.

Through these initiatives, Northern Technical University is not only exemplifying leadership in sustainability within the higher education sector but also fostering an environment that promotes ecological responsibility and energy conservation among its community.























































