SUSTAINABLE DEVELOPMENT GOAL NO. 7 “AFFORDABLE AND CLEAN ENERGY”

Energy is one of the fundamental conditions for the functioning of modern civilization. It determines economic and infrastructural development, quality of life, societal resilience, security, and the capacity for recovery after crises.

In the twenty-first century, the issue of energy increasingly extends beyond the technical sphere. It has become part of the global environmental agenda associated with climate change, decarbonization, energy security, and the transition to renewable energy sources.

For Ukraine in 2025, energy challenges became particularly acute as a result of the full-scale war, which affected energy infrastructure, logistics, and the stability of supply systems. Under these circumstances, the issue of affordable and clean energy acquired both strategic and security significance.

In this context, universities serve as educational and scientific centers that shape new approaches to the energy transformation of society

In 2025, V. N. Karazin Kharkiv National University continued implementing Sustainable Development Goal No. 7 “Affordable and Clean Energy” through:

- scientific research in the field of energy;
- development of energy-efficient technologies;
- educational programs;
- environmental initiatives;
- international cooperation;
- infrastructure modernization.

For Karazin University, energy represents a sphere where science, ecology, economics, and responsibility toward the future intersect.

SCIENTIFIC RESEARCH IN THE FIELD OF ENERGY

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In 2025, the University continued developing scientific research aimed at improving energy efficiency and implementing modern energy solutions.

The main directions included:

- research on renewable energy sources;
- energy-efficient technologies;
- modeling of energy systems;
- analysis of energy security;
- integration of “green” technologies into the urban environment.

Particular attention was devoted to the resilience of energy systems under conditions of crises and wartime risks.

ENERGY EFFICIENCY OF UNIVERSITY INFRASTRUCTURE

In 2025, Karazin University continued measures aimed at improving the energy efficiency of its infrastructure.

The following initiatives were implemented:

- modernization of heating and lighting systems;
- introduction of energy-saving technologies;
- optimization of electricity consumption;
- improvement of building infrastructure efficiency.

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EDUCATION IN THE FIELD OF ENERGY AND SUSTAINABLE DEVELOPMENT

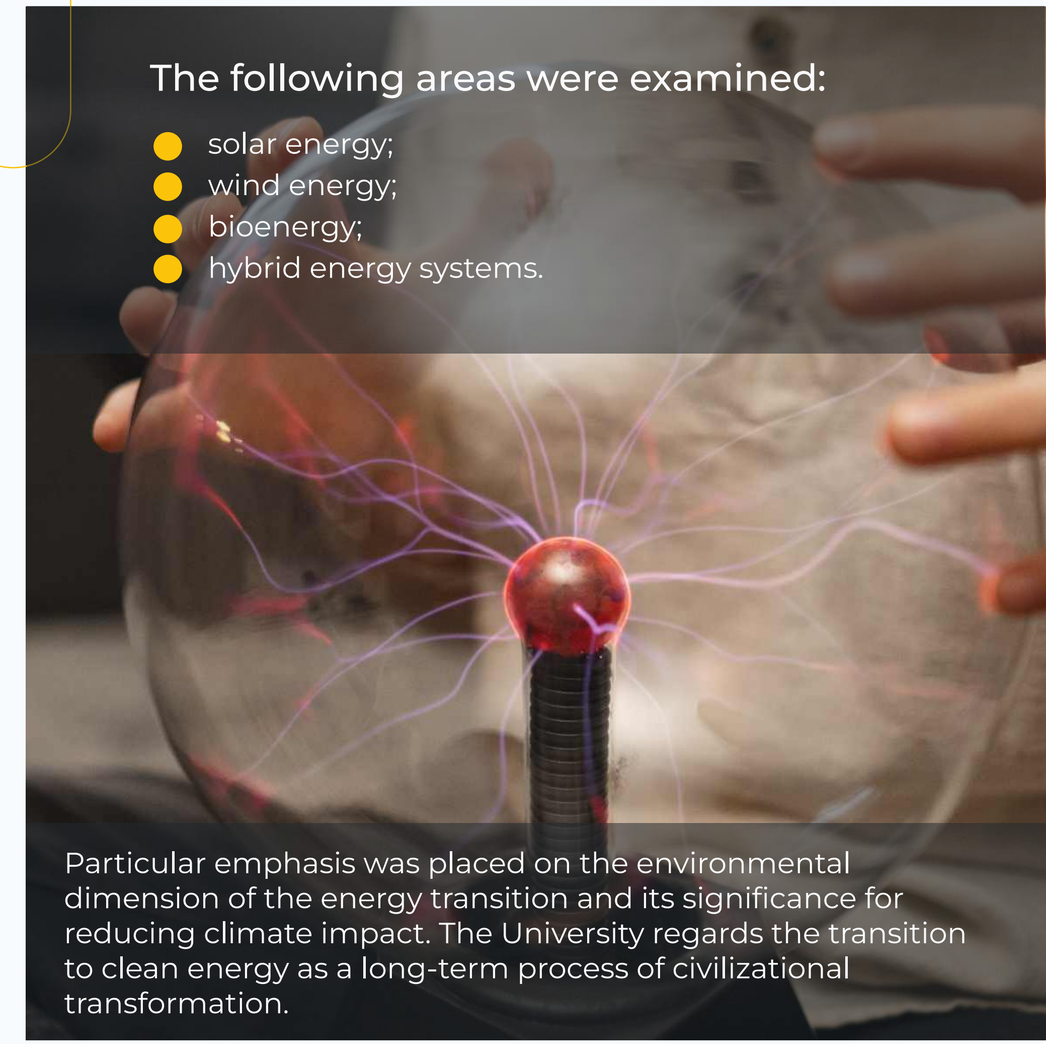
In 2025, the University continued integrating energy-related topics into the curricula of natural sciences, engineering, and socio-economic disciplines.

Students acquired knowledge concerning:

- principles of sustainable energy development;
- renewable energy sources;
- energy security;
- environmental consequences of energy-related decisions;
- climate policy.

RENEWABLE ENERGY AND ENVIRONMENTAL TRANSFORMATION

In 2025, the University devoted attention to the study and promotion of renewable energy sources.



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ENERGY SECURITY UNDER WARTIME CONDITIONS

In 2025, an important area of research remained energy security under wartime risks.

The following issues were analyzed:

- resilience of energy systems;
- risks of infrastructural damage;
- possibilities of decentralized energy systems;
- adaptive models of energy supply.

These studies possess practical significance for shaping strategies aimed at restoring and strengthening the national energy system.

INTERNATIONAL COOPERATION IN THE ENERGY SECTOR

In 2025, Karazin University continued participating in international programs related to:

- *energy transformation;*
- *climate policy;*
- *sustainable development;*
- *“green” technologies.*

International cooperation enabled the University to:

- *exchange scientific expertise;*
- *participate in joint research projects;*
- *integrate Ukrainian science into global energy discussions.*

The energy transition is regarded as a shared challenge for humanity that requires coordinated efforts at the global level.



DEVELOPING A CULTURE OF ENERGY RESPONSIBILITY

In 2025, the University continued awareness-raising activities aimed at fostering a culture of rational energy consumption.

The following activities were organized:

- *educational events;*
- *student initiatives;*
- *popular science lectures;*
- *discussions on sustainable development.*

The objective is to develop among students and staff an understanding of energy as a shared resource requiring responsible use.

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CONCLUSIONS

In 2025, Karazin University continued implementing Sustainable Development Goal No. 7 “Affordable and Clean Energy” through:

- scientific research;
- development of energy efficiency;
- educational programs;
- support for renewable energy;
- research on energy security;
- international cooperation;
- fostering a culture of responsible energy consumption.

The University regards energy as a key element of modern civilizational transformation, where technology, ecology, security, and ethical responsibility toward future generations converge.