GREEN TRANSITION UNIVERSITY

Kharkiv National University of Radio Electronics (NURE) Self-Assessment Report

Institution	*Kharkiv National University of Radio Electronics (NURE)*
Period	*2019-2023*
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INTRODUCTION

Universities are a source of knowledge, perform a special mission for the benefit of society and traditionally occupy a unique position in society – this makes them particularly suitable for leadership in the implementation of the SDGs. Using their unique position in society, universities – both individually and in partnership – can help guide, direct and support local, national and international organizations for the SDGs.

The objectives of NURE to implement the SDGs has been established at our university. The university act as a key factor for the introduction of the SDGs into the mass consciousness through the dissemination of knowledge in the most convenient and understandable form for society.

NURE intensively deals with issues of sustainable development, promotes the development of competences in the field of sustainable development and develops specific study programs or implements educational disciplines related to SDGs. The university is also aimed at popularizing sustainable development among society and organizations. Also NURE tries to apply the ideas of sustainable development, specified in the list of the SDGs, when organizing its own activities, reworking educational programs, modernizing the campus, etc.

NURE in Times Higher Education World University Rankings 2024, 3d in THE WUR2024 among 14 Top Ukrainian Universities https://benchmarking.nure.ua/nure-in-the-2024/

NURE in UI Greenmetric 2022: 899th in the world, 13th among Ukrainian universities https://nure.ua/en/nure-in-ui-greenmetric-2022;
https://greenmetric.ui.ac.id/rankings/overall_rankings_2022

In the direction of green transformation, NURE has certain achievements, as evidenced by its participation in world rankingsю In the world ranking of the best universities QS World University Rankings 2023 NURE took a position in the group 1001-1200; in the QS EECA 2022 regional ranking, NURE took a position in the range of 221-230.

Kharkiv National University of Radio Electronics joined the Race to Zero global initiative, One of the two universities of Ukraine
https://www.educationracetozero.org/current-signatories;
https://nure.ua/khnure-pryiednavsia-do-initsiatyvy-race-to-zero;

This document presents the results of a self-assessment of Kharkiv National University of Radio Electronics Green Transition process in three aspects: green campus, green research and green education.

PART I
GREEN RESEARCH

1.1. Is there institutional, divisional, or university sustainability/green transition planning and action in research activities?

The general issues of planning compliance with the goals of sustainable development in scientific activity (among which, first of all, SDGs 8-13) are determined by Chapter 9 Scientific, scientific, technical and innovative activities of the *Charter of the NURE*, which was approved by the Ministry of Education and Science of Ukraine, order No. 759, 22.08.2022 (https://nure.ua/wp-content/uploads/Main_Docs_NURE/statut.pdf) and the *Strategy and perspective directions for the development of educational, scientific and innovative activities of NURE* **(**https://nure.ua/wp-content/uploads/Main_Docs_NURE/strategy_nure_2022.pdf).

RESEARCH. We always support research that is conducted in compliance with the highest standards of quality, integrity and has the potential to make a significant contribution to the development of science as a whole. The priority of scientific research is the main dominant factor in the development of the university as an innovative one. We will increase the competition and grant activity of scientists to ensure equal opportunities for participation in international scientific projects.

OBLIGATIONS 1. To provide and encourage ambitious research. We will develop scientific schools of NURE, which have become the key to the success of many outstanding scientists with world names. We will create the best conditions for young scientists and students who are attracted to the world of scientific research. We will provide a favorable environment for conducting research. We will attract investments in the preparation and support of scientific research. We will try to attract scientists from all over the world to participate in our research.

COMMITMENT 2. Attract investments to support scientists and their research environment, thereby enabling researchers to develop sustainably.

PRIORITIES OF SCIENTIFIC AND INNOVATIVE ACTIVITIES:

1. Increasing opportunities and supporting young scientists.
2. Investing in the research environment (employees, infrastructure, equipment).
3. Cooperation with business, non-governmental organizations and other organizations to increase the volume and value of scientific research that is not funded by the government.
4. Continue to expand and invest in innovative activities and promote the development of an entrepreneurial environment for scientists and students.

1.2. Regardless of the origin of the green transition strategy in research, do these initiatives receive the support needed to be successful?

The implementation of scientific research with an emphasis on ensuring the goals of sustainable development is actively supported by the administration and staff of the university. All events and activities from such activities are presented and constantly updated on the tab of the "UNIVERSITY" website in the GOALS OF SUSTAINABLE DEVELOPMENT section (https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii). Coordination is carried out by a specialist in the benchmarking department, Hanna Belyaninova, who has completed a series of trainings on green transformation, which is confirmed by certificates https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/sertifikacija-fahivciv.

Its position in the Times Higher Education World University Rankings testifies to the efficiency of this policy of NURE. The 2024 ranking is based on the new WUR 3.0 methodology, which includes 18 indicators that measure the activities of universities in five areas that are directly related to the goals of sustainable development: education, science,

research quality, technology transfer and international cooperation. In the 20th release of the Times Higher Education World University Rankings 2024 ranking of the best universities in the world, the Kharkiv National University of Radio Electronics took place in the 1001-1200 group and retained its third position among the 14 top universities of Ukraine (after Sumy State University and Lviv Polytechnic University) https://benchmarking.nure.ua/nure-in-the-2024/.

1.3. Are there internal policies in place to monitor the alignment of the research strategy with specific Sustainable Development Goals and to assess progress?

The issue of sustainable development/green transformation is reflected in a number of normative documents and policies of NURE that regulate its activities:

1) To the SDGs 16-17 correspond the *Internationalization Strategy of NURE*, Rector's order No. 14, January 4, 2019, section "Internationalization of scientific activity", Page 4-5 https://nure.ua/wp-content/uploads/Main_Docs_NURE/stratehiia-internatsionalizatsii.pdf. The results of international cooperation and partnership development are widely covered on the website https://nure.ua/en/university/international-activity.

2) Inclusion of tasks in the field of scientific and technical activities in the ENERGY SAVING AND CLIMATE CHANGE MITIGATION PROGRAMS (https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/energetika-ta-zmina-klimatu).

For example, in the COMPREHENSIVE LONG-TERM ENERGY SAVING PROGRAM IN NURE FOR THE PERIOD 2020-2025**,** Page 3, part II, Science-technical and study activities (https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf) the need to include issues of energy conservation in the subject of scientific and research works for the performance of calculation studies and engineering studies (p. 2.1) and the development of energy-saving technologies, engineering and scientific and technical proposals for saving energy resources at the university (p. 2.3) is foreseen.

3) In p. 1.4. of GENDER EQUALITY PLAN for 2023-2025, which corresponds to SDG 5, order of the rector of NURE No. 215, 6.10.2023 (https://nure.ua/wp-content/uploads/2023/215_06.10.2023.pdf), it is emphasized on the need to integrate gender aspects into the content of research and development.

4) NURE ENVIRONMENTAL POLICY, order No. 241, 26.12.2022 (https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf).

Point 2.2 of the Environmental Policy envisages obligations in scientific activity: to develop existing and to initiate new areas of ecologically oriented scientific research and development, in particular, which are interdisciplinary and focused on the needs of society; take into account and minimize the negative environmental consequences that may be caused by conducting research and development, or using its results; to cooperate with the state authorities and local self-government in direction of consulting and scientific services, the implementation of scientific research works, developments in the field of ecology, clean energy and sustainable nature management. In p. 2.3 “Organizational measures” the university undertakes to increase the environmental education and awareness of employees and students, in particular by: carrying out activities to popularize ecologically oriented knowledge, as well as the results of its own ecologically oriented research and development; carrying out targeted events and supporting environmental volunteer initiatives.

5) In the POLICY OF IMPLEMENTING OF HEALTHY LIFESTYLE AND MENTAL HEALTH SUPPORT (https://nure.ua/wp-content/uploads/Benchmarking/polityka-zszh-.pdf) is prescribed to carry out scientific research in the field of disease prevention and identification of risk factors for their development (department of Physical education and sports, BME department). Main areas of activity within the Policy:

Scientific and educational activities. Comprehensive information of students and teachers in matters of health preservation and strengthening:

• introduction into the educational process at the university of disciplines that teach techniques and methods of preserving and strengthening health, legal issues of health care.

Inclusion of students in research activities on health care issues and the formation of physical and psychological health:

• organization of conferences on issues of preserving and strengthening the health of university students and teachers;

• preparation by students and teachers of scientific articles, monographs, and reports at scientific conferences on topics related to various aspects of human health.

Involvement of students and teachers in the promotion of Healthy Lifestyle:

• public lectures by students and teachers on topics related to various aspects of human health;

• performance of students and teachers in mass media (newspapers, radio, television, Internet);

• holding optional classes on teaching methods of propaganda of the Healthy Lifestyle.

https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/micne-zdorov-ja-i-blagopoluchchja.

6) NURE EQUALITY, DIVERSITY AND INCLUSION POLICY meets Goal 10 Reduced inequality (https://nure.ua/wp-content/uploads/Benchmarking/polityka-rivnosti-10.pdf).

The website of the university presents relevant results, among which scientific research occupies a significant place. For example, Report on the work of the Special training and rehabilitation department for 2020 (https://nure.ua/wp-content/uploads/Benchmarking/sdg_10_2022.pdf) and for 2021 (https://nure.ua/wp-content/uploads/Benchmarking/sdg_10_2021.pdf), Report on the scientific work of the Special educational and rehabilitation department for students with special educational needs regarding the achievement of SDG 10 (Pages 5-17). For example, a mock-up of the AEFE registration device in functionally healthy respondents; study of the electromagnetic component of the living system as an indicator of the system energy processes of vital activity by the method of electrophoton emission analysis using the model of the AEFE registration device.

1.4. Does the university have thematic communities (formal or informal) in areas related to the Sustainable Development Goals (priorities SDG 7-9, 11-13, 15)?

To raise awareness and interest in the SDGs, there is a permanent Workshop on Sustainable Development Goals (SDGs). The objectives of NURE to implement the SDGs has been established at our university. At the events, presentations by scientists working on issues related to the SDGs are presented, recommendations on how to achieve the SDGs by the university are developed, discussions on the implementation of the SDG achievement tools are held. The priority of this initiative is to provide an analytical and systematic approach in studying the problems and opportunities of the university in achieving specific SDGs.

https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/ekologichnij-ruh-v-hnure

The science park SYNERGY was created to popularize scientific activity and conduct scientific events in NURE (https://nure.ua/nauka/populjarizacija-nauki/prirodnichi-nauki-ta-matematika/naukovij-park-sinergija).

A group of scientists and students are working towards the development of green energy. For example, student scientific work on experimental research of the modes of operation of a solar station based on silicon monocrystalline panels. Installed solar panels on the roof of the main building of the University https://nure.ua/en/nure-solar-station. Scientists

of the CITAR department developed the "Nure energy" automated lighting control system. Professor Pysmenetskyi V.O. developed and patented a solar concentrator prototype https://nure.ua/en/prototype-solar-hub.

The team of scientists of the CITAR and BME departments received the State Award in the field of education шт 2019 for the work "Integrated information and educational environment and rehabilitation measures to ensure equal access to quality education for persons with special educational needs" https://www.president.gov.ua/documents/4182020-35213.

Participation of university staff in the Erasmus Jean Monnet Modules project "Ukraine-EU: circular economy solutions for smart and sustainable cities" (SDG 4,11,12,17). The overall goal of the project is to draw the attention of the Ukrainian community to the need for circular economy solutions for the development of smart cities and a sustainable future https://nure.ua/en/university/international-activity/international-programs-and-academic-mobility/erasmus/about-erasmus/jean-monnet-programme/eco4smart.

1.5. Which departments have been visibly successful in dealing with green transition issues in research and development activities? What explains their success?

The departments that are most successful in promoting and moving in the direction of research in the field of green transformation include::

- Departments of Biomedical Engineering
https://www.bme.nure.ua/en/department-of-biomedical-engineering-bme-kharkov-ukraine/
https://www.bme.nure.ua/inter-projects/
https://www.bme.nure.ua/scientific-school-of-research-on-electrochemiluminescence/
- Departments of Artificial Intelligence https://ai.nure.ua/en/research-and-international-cooperation-2.html ; https://ai.nure.ua/en/research-directions.html
- Departments of Computer-Integrated Technologies, Automation and Robotics https://tapr.nure.ua/
- Departments of Occupational Safety https://os.nure.ua/
- Research and development laboratory of electronic and non-traditional energy technologies of the Research and Development Center of Integrated Information Radio Electronic Systems and Technologies (RDC IIREST). Provisions of RDC IIREST https://nure.ua/wp-content/uploads/2021/polozhennja-ndc-iirest-proekt.pdf, page 5-6, p.2.1.4 provides for: development of new energy-saving technologies based on the combined action of electromagnetic energy of the microwave range, cavitation and other types of influence of physical fields on materials and objects; creation of promising microwave technology for use in technological processes in the processing of food, agricultural, other types of products and materials for various purposes; development of new technologies in the field of alternative energy.

1.6 Results of Green Research Self-assessment

OBJECTIVES	**INDICATORS**	**RATING** **Evidence of Institutional / Faculty Recognition & Action** **0 = No** **1 = Minimal** **2 = Weak** **3 = Adequate** **4 = Strong** **5 = Very strong**	**URL or location of supporting documents** (e.g., strategic and organizational plans, meeting agendas or minutes, white papers, mission & policy statements, etc.)
The university promotes the activities and results of the research teams' work on achieving the Sustainable Development Goals among external stakeholders.	University's podcasts, social media, online/offline public speaking, YouTube channels, etc.	**4**	Sustainable Development Goals. The objectivies of NURE to implement the SDGs. https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii Scholary publications on sustainability https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/environmental-sustainability/scholarly-publications-on-sustainability Science labs NURE https://nure.ua/nauka/sciencelabnure Conference/workshops https://nure.ua/en/conference-workshops NURE ecological movement https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/ekologichnij-ruh-v-hnure Participation in the Energy Efficiency and Alternative Energy Forum as part of the exhibition KharkivBUILD & Energy. KharkivBUILD & Energy https://nure.ua/hnure-vzjav-uchast-u-forumi-energoefektivnosti-ta-alternativnoi-energetiki

The university has mechanisms for assessing planned/prepared research projects for the environmental impact of activities during project implementation.	Institutional documentation, which defines the assessment procedure for planned/prepared research projects	**5**	COMPREHENSIVE LONG-TERM ENERGY SAVING PROGRAM IN NURE FOR THE PERIOD 2020-2025**,** Page 3, part II, Science-technical and study activities https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf NURE ENVIRONMENTAL POLICY, order №241, 26.12.2022 https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf POLICY OF IMPLEMENTING OF HEALTHY LIFESTYLE AND MENTAL HEALTH SUPPORT https://nure.ua/wp-content/uploads/Benchmarking/polityka-zszh-.pdf NURE EQUALITY, DIVERSITY AND INCLUSION POLICY, Goal 10 Reduced inequality https://nure.ua/wp-content/uploads/Benchmarking/polityka-rivnosti-10.pdf GENDER EQUALITY PLAN for 2023-2025 respond to SDG 5 **(**order №215, 6.10.2023) https://nure.ua/wp-content/uploads/2023/215_06.10.2023.pdf The Collective agreement between the administration and the Committee of the Primary trade union organization NURE for 2019-2022 in terms of the implementation of SDGs 3,5,8. Changes and additions to the Collective agreement concluded for 2019-2022 between the administration and the Committee of the Primary trade union organization NURE https://nure.ua/wp-content/uploads/2021/Docs/zmini-do-koldogovoru.pdf
The university has the mechanisms to promote and stimulate research activities to minimize environmental impact.	Institution documentation, which describes the mechanism for promotion and stimulation	**4**	NURE ENVIRONMENTAL POLICY, order №241, 26.12.2022 https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf Research and Development Center of Integrated Information Radio Electronic Systems and Technologies https://nure.ua/wp-content/uploads/2021/polozhennja-ndc-iirest-proekt.pdf, page 5-6, p.2.1.4: development of new energy-saving technologies based on the combined effect of electromagnetic energy of the microwave range, cavitation and other types of influence of physical fields on materials and objects; creation of promising microwave technology for use in technological processes in the processing of food, agricultural, other

			types of products and materials for various purposes; development of new technologies in the field of alternative energy. POLICY OF IMPLEMENTING OF HEALTHY LIFESTYLE AND MENTAL HEALTH SUPPORT https://nure.ua/wp-content/uploads/Benchmarking/polityka-zszh-.pdf Provisions on bonuses for NURE employees, section 2, p. 7 https://nure.ua/wp-content/uploads/Main_Docs_NURE/kolektyvnyj-dohovir-z-dodatkamy-na-sajt.pdf
The University ensures the implementation of the results of research projects to achieve the Sustainable Development Goals in the educational process.	The list of cases and best practices	**5**	Report on the implementation of the tasks of NURE for goal 3 Good health and well-being 2022 https://nure.ua/wp-content/uploads/Benchmarking/sdg_3_2022.pdf Report on the implementation of the tasks of NURE for goal 3 Good health and well-being 2021 https://nure.ua/wp-content/uploads/Benchmarking/sdg_3_2021.pdf Report on the implementation of the tasks of NURE for goal 3 Good health and well-being 2020 https://nure.ua/wp-content/uploads/Benchmarking/sdg_3-2020.pdf Report on the implementation of the tasks of NURE for goal 3 Good health and well-being 2019 https://nure.ua/wp-content/uploads/Benchmarking/zvit-3-cur-2019.pdf
			Report on the implementation of the tasks of NURE for goal 9 Infrastructure, industrialization 2021 https://nure.ua/wp-content/uploads/Benchmarking/sdg_9_2021.pdf Report on the implementation of the tasks of NURE for goal 9 Infrastructure, industrialization 2019 https://nure.ua/wp-content/uploads/Benchmarking/zvit-9-cur-2019.pdf
			Report on the work of the Special educational and rehabilitation department for 2022 https://nure.ua/wp-content/uploads/Benchmarking/sdg_10_2022.pdf Report on the work of the Special educational and rehabilitation department for 2021 https://nure.ua/wp-content/uploads/Benchmarking/sdg_10_2021.pdf

			Students from nure conduct research on climate change https://nure.ua/en/students-from-nure-conduct-research-on-climate-change As part of InnoBioDiv, an innovative study of the interaction between plants and the environment in a changing climate that combines biology and modern Internet of Things technologies, our students Kateryna Stetsenko (AKTAKIT-20-3 group) and Daryna Nenova (AKTAKIT-21-1 group) visited the University of Köln, where they conducted research together with students of this university! The main goal of the joint research project InnoBioDiv of the University of Cologne and TH Köln is to create an innovation platform that will allow to test the impact of climatic parameters on plant growth performance and soil biodiversity using the results of the research of the Cluster of Excellence in Plant Science (CEPLAS). The innovation platform serves, on the one hand, to make the ecological interconnections in the root zone tangible, and on the other hand, as a communication platform for collecting concepts and exchanging ideas.
			NURE solar station https://nure.ua/en/nure-solar-station Solar cells are durable, environmentally friendly and energy-balanced alternative energy sources. Now alternative sources of electricity based on solar panels are being actively introduced into urban utilities, security systems, base stations for mobile communications, etc. Student scientific research of solar stations based on silicon monocrystalline panels was carried out at NURE. After studying solar panel KV 150/24 parameters: voltage, current, output power, taking into account illumination and temperature in winter conditions within daylight hours, the panels were installed on the University main building roof. These solar panels power spotlights that illuminate NURE logo at night. Prototype solar concentrator https://nure.ua/en/prototype-solar-hub

			Multifunctional 3D printer "TOWER"https://nure.ua/wp-content/uploads/Scientific_research_part/bagatofunkcionalnij-3d-printer-vezha-.pdf Scientific developments of NURE https://nure.ua/branch/naukovo-doslidna-chastina/rozrobki-hnure Implementation of "green" technologies in the educational process of the BME department https://youtu.be/Ghw-0Fz-5ns https://www.bme.nure.ua/learning-by-research/

PART 2 GREEN EDUCATION

2.1. Does more than one university unit (division, school, department, etc.) have specific responsibilities for green education?

A number of departments and associations have been created at the university, which contribute to the educational activities of the university to achieve the SDGs by the university and ensure the sustainable development of society as a whole:

1. Research and development center of integrated information radio electronic systems and technologies. The center was established with the aim of more efficient use of human, financial and material and technical resources for the development of promising radio-electronic systems and technologies, scientific support for the training of specialists in this area, as well as for the development of new technologies in the field of alternative energy and energy conservation based on the use of the effects of electromagnetic fields and cavitation on substances, implementation and commercialization.

https://nure.ua/en/branch/scientific-research-part-srp/srp-structure/research-and-development-center-of-integrated-information-radio-electronic-systems-and-technologies-rdc-iirest

2. Kharkiv National University of Radio Electronics (NURE) Scientific Society of Young Scientists (Council of young scientists) promoting of development of youth research initiatives, including interdisciplinary research and research that promotes sustainable development; takes part in the formation University's "youth policy", involvement of young people in decision-making to achieve the Sustainable Development Goals.

https://nure.ua/en/branch/council-of-young-scientists

3. The University Council for Quality Assurance of Educational Activities, which was created for the effective implementation by the university of measures related to the system of internal quality assurance of educational activities at the university, principles and procedures for quality assurance of educational activities, operational monitoring and resolution of quality assurance issues.

https://nure.ua/branch/akademichna-dobrochesnist-ta-zabezpechennja-jakosti-osviti

4. Special educational and rehabilitation department for students with special educational needs, which was created to organize inclusive education of students at the university.

https://nure.ua/en/branch/special-educational-and-rehabilitation-department-for-students-with-special-educational-needs

5. Department of benchmarking and web-management.

https://nure.ua/en/branch/department-of-benchmarking-and-web-management

6. Development office (Department of perspective development), which was created for the purpose of organization and coordination of grant activities and programs of perspective development at the university.

https://nure.ua/en/branch/development-office

7. Center for the collective use of scientific equipment "Research center of laser and optoelectronic technologies", the purpose of which is to promoting the research and scientific and technical developments, the results of which have national and international recognition, the implementation of the most important and relevant directions for science and technology development for the state by providing domestic and foreign scientists, industry representatives and other interested parties and organizations with the access to unique scientific equipment. The main tasks of the Center: promoting the scientific and scientific and technical activity of institutions (organizations) of Ukraine aimed at obtaining scientific and technical result which is in accordance with the state's priorities to ensure the development of the economy, society,

strengthening national security, and etc.; internship of students, postgraduates, and young scientists on the Center's equipment.

https://nure.ua/en/branch/scientific-research-part-srp/srp-structure/center-for-the-collective-use-of-scientific-equipment-research-center-of-laser-and-optoelectronic-technologies

8. Gender education center. https://nure.ua/en/branch/gender-education-centerr

9. The Departments of Biomedical Engineering (BME), Computer-Integrated Technologies, Automation and Robotics (CITAR), Artificial Intelligence are the most active in implementing the goals of green education.

In 2020 By Decree of the President of Ukraine No. 418/2020 of October 2, 2020 to the staff of the CITAR Department Filipenko O.I. , I.Sh. Nevlyudov and of the BME Department O.G. Avrunin, V.V. Semenets was awarded the State Prize of Ukraine in the field of education for 2019 for the series of works "Integrated information and educational environment and rehabilitation measures to ensure equal access to quality education for persons with special educational needs".

https://nure.ua/naukovcjam-hnure-prisudzheno-derzhavnu-premiju-ukraini-v-galuzi-osviti https://tapr.nure.ua/nashim-kolegam-vruchili

2.2. Is “green transition” as subject, topic, option, etc. taught in any non-engineering or engineering departments or faculties?

The course “Environmental Safety” is taught for all university study programs. The purpose and objectives of the discipline are to form students’ skills and competencies to ensure effective management of environmental safety of modern industrial production, environmental quality based on modern advances in science, technology and international experience. After studying the discipline, students should know management systems in the field of environmental safety, methods and technologies for forecasting emergencies caused by disruption of technological processes and their impact on the environment, determining the level of environmental risks, and justifying a set of measures to prevent emergencies and eliminate their consequences.

https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/environmental-sustainability/sustainability-courses/environmental-safety

A number of other disciplines are presented in the University catalog of selective disciplines for all study programs of the university and departmental catalogs: "Smart House", "Information logistics systems", "Quantum measurement technologies", " Programming of Smart Home microprocessor devices", " Development of Smart Home microprocessor devices ", "Development of strategies for sustainable development of systems", "Management, control and automation at nuclear power plants" https://nure.ua/zagalnij-katalog-vibirkovih-navchalnih-disciplin/vibirkovi-navchalni-disciplini-ciklu-profesijno-praktichnoi-pidgotovki.

2.3. Are there approved regulations/mechanisms/procedures in the University with recommendations on the need to reflect the selected GSDs in the objectives, orientation, and main focus of the study program? (Please add the link at the University site).

Strategy and prospective directions of development of educational, scientific and innovative activity of NURE. Sections "Goal", "Strategy of development", "Education": https://nure.ua/wp-content/uploads/Main_Docs_NURE/strategy_nure_2022.pdf

The "System of quality assurance of educational activity", which was approved by order of NURE No. 325, 16.09.2020, defines the principles and procedures of internal quality assurance of higher education at the University through integration with research, innovation and through improving the quality of research and management activities. Quality assurance

policy is an integral part of the university's strategic management, and its implementation and improvement is a task for all stakeholders. The document contains procedures with recommendations on the need to take into account the goals of sustainable development in sections "2 Development and approval of educational programs", "9 Current monitoring of training programs", "10 Organization of internal quality assurance of educational activities".

https://nure.ua/wp-content/uploads/Main_Docs_NURE/sistema-vnutr-zabezp-jakosti.pdf

2.4. How is green transition education delivered (in the form of elective courses, as a defined module or option, a degree program, or a mixture of formats)?

Obtaining competencies and program learning outcomes, which include selected goals from the SDGs list, at the university is carried out in various formats: study of individual courses, study of individual topics of relevant courses, completion of various optional courses within the framework of non-formal/informal education. At the university, approved by Order No. 130, 08.02.2022, "Procedure for recognition in higher and professional education of learning results obtained through non-formal and/or informal education" https://nure.ua/wp-content/uploads/poriadok_monu.pdf

2.5. Are the results of cooperation with employers and other stakeholders taken into account in new study programmes and modifying existing curricula to achieve the selected goals from the list of SDGs? (Please add examples of good practices).

The result of cooperation between NURE (CITAR department) and Zaporizhzhya Nuclear Power Plant (https://tapr.nure.ua/nashi-vikladachi-vidvidali-zaporizku-atomnu-elektrostanciju) is the creation of the course "Management, control and automation at nuclear power plants" and its inclusion in University-wide catalog of optional disciplines for all study programs of the university https://nure.ua/zagalnij-katalog-vibirkovih-navchalnih-disciplin/vibirkovi-navchalni-disciplini-ciklu-profesijno-praktichnoi-pidgotovki.

Study program "Biomedical engineering" specialty 163 "Biomedical engineering" in the framework of cooperation with the Ukrainian Research Institute of Prosthetics, Prosthetics Construction and Rehabilitation and Sytenko Institute of Spine and Joint Pathology National Academy of Medical Sciences of Ukraine (https://nure.ua/wp-content/uploads/Education_programs/2023/2023_mag_163_opp_bmi.pdf) introduced the disciplines "Design of biotechnical systems" (https://www.bme.nure.ua/wp-content/uploads/2023/02/Проектування-біотехнічних-систем.pdf, https://nure.ua/wp-content/uploads/Education_programs/2023/2023_-bak_163_opp_bibmi.pdf), "Devices and systems for replacing lost human organs and functions" (http://bme.nure.ua/wp-content/uploads/2021/12/Апарати-і-системи-заміщення-втрачених-органів-та-функцій-людини.pdf). BME Department has been cooperating for many years with the Ukrainian Research Institute of Prosthetics, Prosthetics and restoration of working capacity in the field of medical-technical problems of rehabilitation and social adaptation of persons with disabilities. Over the past several years, the project "Creation of prosthetic and orthopedic education in Ukraine" has been implemented, which was initiated by the NATO Support and Supply Agency, the Ministry of Social Policy of Ukraine and the Human Study School of Rehabilitation Sciences, within the framework of which the Department of Biomedical Engineering has implemented the training of teachers and trainers in prosthetics and orthotics according to modern ISPO category II international standards (https://protez.eu/navchalni-programi-ta-kursi/ , https://nure.ua/naukovcjam-hnure-prisudzheno-derzhavnu-premiju-ukraini-v-galuzi-osviti). In 2022-2023, the department is implementing an educational project funded by the German Academic Exchange Service DAAD "Ukraine digital: Ensuring academic success in times of crisis (2022). OER with Ukraine".

2.6. Are there transparent links to the selected goals from SDGs in the learning outcomes for the study programme? (Please add examples of good practices).

In NURE, within the framework of the educational and professional program "Automation and computer-integrated technologies" for the training of students of the first (bachelor's) level of higher education, four goals from the list of SDGs are implemented: Goal 3 Good health and well-being; Goal 4 Quality education, Goal 9 Industry, innovation and infrastructure, Goal 17 Partnership for the goals.

The total number of competencies related to the selected goals from the SDG list is 11.

Goal 3 – GC10: The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of physical activity for active recreation and leading a healthy lifestyle.

Goal 4 – GC04: Skills in using information and communication technologies; GC 05: Ability to search, process and analyze information from various sources; GC11: The ability to understand and apply in practice the main provisions of national legislation on ensuring the quality of education and academic integrity; GC12: The ability to influence the formation of a culture of academic integrity in the academic community.

Goal 9 – GC 06: Skills of performing safe activities; GC 07: Efforts to preserve the environment; SC 06: The ability to use the latest technologies in the field of automation and computer-integrated technologies to solve professional tasks, in particular, the design of multi-level control systems, data collection and their archiving to form a database of process parameters and their visualization using human-machine interface tools; SC 09: The ability to freely use modern computer and information technologies to solve professional tasks, to programming and use applied and specialized computer-integrated environments to solve automation problems; SC 10: The ability to take into account social, ecological, ethical, economic aspects, requirements of occupational safety, industrial sanitation and fire safety during the formation of technical solutions.

Goal 17 – GC 08: Ability to work in a team; GC 09: The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

The total number of programmatic learning outcomes related to the selected goals from the SDGs list is 7.

Goal 3 – PO 13: Be able to take into account social, ecological, ethical, economic aspects, requirements of occupational safety, industrial sanitation and fire safety during the formation of technical solutions. To be able to use different types and forms of physical activity for active recreation and leading a healthy lifestyle.

Goal 4 – PO 16: Be able to organize the production process using the concept of Industry 4.0 and the use of modern intelligent means of managing technological processes, components of the industrial Internet of Things, communication organization technology and cloud computing; PH18: To be able to create technological processes of modern production with the help of computer-integrated technologies and special software.

Goal 9 – PO 3: Be able to apply modern information technologies and have the skills to develop algorithms and computer programs using high-level languages and object-oriented programming technologies, create databases and use Internet resources; PO 6: Be able to apply the methods of system analysis, modeling, identification and numerical methods to develop mathematical and simulation models of individual elements and automation systems as a whole, to analyze the quality of their functioning using the latest computer technologies; P0 9: Be able

to design multi-level control and data collection systems for the formation of a database of process parameters and their visualization using human-machine interface tools, using the latest computer-integrated technologies.

Goal 17 – PO 14: To be able to use the fundamental concepts and categories of state-building in industrial and social activities to substantiate one's worldview positions and political beliefs, taking into account the processes of the socio-political history of Ukraine, legal foundations and ethical norms.

2.7. Can students in any engineering degree program take elective courses related to green transition? Who can participate in sustainability or green transition-related problem- or project-based studies/projects for students/non-curriculum activities etc.?

Students can choose disciplines related to the "green transition" from the General catalog of elective academic courses, which is posted on the university's website (https://nure.ua/zagalnij-katalog-vibirkovih-navchalnih-disciplin) and which includes a list and description of humanitarian and socio-economic disciplines, general university disciplines of professional and practical training and the list and syllabus of the disciplines of professional and practical training offered by graduation departments according to the study program. Also, students have the right to choose educational components offered for other levels of higher education and other educational programs, in agreement with the dean of the faculty. The amount of educational components that students can choose independently is at least 25% of the total number of ECTS credits. The right of students to choose academic disciplines is regulated by the Regulation on the organization of the educational process at the NURE (https://nure.ua/wp-content/uploads/Main_Docs_NURE/polozhennja-pro-organizaciju-osvitnogo-procesu-v-hnure-2023.pdf), Regulations on the organization of the educational process regarding the selective component of educational programs at the Kharkiv National University of Radio Electronics (https://nure.ua/wp-content/uploads/2023/150_07.07.2023.pdf).

Any student can participate in problem- or project-oriented student projects on sustainable development or green transition that are not related to the curriculum. All information about current events is widely covered on the website of the university and relevant departments (https://nure.ua/en/science, https://nure.ua/en/university/international-activity/international-programs-and-academic-mobility).

2.8. If you and your colleagues were just starting to develop the activities under review, what would you do differently?

In the relevant normative documents of the university, which regulate issues related to education, mechanisms/procedures for creating and modifying curricula, it is necessary to provide recommendations on the presence of transparent references to specific goals of sustainable development, consideration of issues related to the achievement of selected goals from the list of Sustainable Development Goals. These procedures should also take into account the results of cooperation with employers and other interested stakeholders (students of higher education, graduates, representatives of the academic community, local authorities, etc.), the experience of similar local and foreign programs, current trends in the development of the specialty and the labor market, industry and regional context. All educational institutions should consider it their duty to intensively deal with issues of sustainable development, promote the development of competences in the field of sustainable development and develop specific training programs related to the SDGs. Therefore, it is vital not only to include issues related to the SDGs in curricula, but also to use action-oriented transformational pedagogy.

The inclusion of components of sustainable development in the study program should, first of all, contribute to the achievement of valuable and fair quality education, employability,

indicate the place of the program in the lifelong learning system (SDG 4). The goals, orientation, main focus of the study program and its features should be aimed at taking into account the peculiarities of personnel training for the implementation of sustainable development tasks. The study program should support the accessibility and quality of education, which should primarily be aimed at teaching methods and assessment procedures, the creation of barrier-free learning tools (inclusive educational environment) for learners with special educational needs. Modern challenges, such as pandemics, the need to support public health, considering the consequences of a catastrophic increase in the number of victims of military aggressions require taking into account among the general competencies and learning outcomes the presence of components for ensuring a healthy life, a safe, social and psychological component and promoting well-being for all (SDG 3).

2.9. Brief evaluative summary of the green transition-related program(s) or offerings of your university, e.g., the strengths, accomplishments, limitations, and work in progress.

Department/Unit	Green transition-related program(s)	Topical Target / Learning Objective	URL or location of supporting documents
Department CITAR	1. Degree Program Educational professional program «Automation and computer-integrated technologies» specialty 151 Automation and computer-integrated technologies	Within the framework of the study program, specialists capable of solving tasks related to the automation of production processes, developing new and improving existing automation systems using modern software and technical complexes, technical means of automation and information technologies are being trained; able to perform a complex analysis of automation objects, justify the choice of technical means of automation, design management systems for modern productions, develop software that is focused on the use of Internet of Things and cloud computing technology. The program implements four goals from the SDGs list: Goal 3 Good health and well-being; Goal 4 Quality education, Goal 9 Industry, innovation and infrastructure, Goal 17 Partnership for goals.	https://nure.ua/wp-content/uploads/Education_programs/2022/2022_bak_151_opp_aktakit.pdf
	2. Concentrations and Elective Options related to green transition issues	The total number of competencies related to the selected goals from the SDG list is 11. Goal 3 – GC10: The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of physical activity for active recreation and leading a healthy lifestyle. Goal 4 – GC04: Skills in using information and communication technologies; GC 05: Ability to search, process and analyze information from various sources; GC11: The ability to understand and apply in practice the main provisions of national legislation on ensuring the quality of education and academic integrity; GC12: The ability to influence the formation of a culture of academic integrity in the academic community.	https://nure.ua/wp-content/uploads/Education_programs/2022/2022_bak_151_opp_aktakit.pdf

		Goal 9 – GC 06: Skills of performing safe activities; GC 07: Efforts to preserve the environment; SC 06: The ability to use the latest technologies in the field of automation and computer-integrated technologies to solve professional tasks, in particular, the design of multi-level control systems, data collection and their archiving to form a database of process parameters and their visualization using human-machine interface tools; SC 09: The ability to freely use modern computer and information technologies to solve professional tasks, to programming and use applied and specialized computer-integrated environments to solve automation problems; SC 10: The ability to take into account social, ecological, ethical, economic aspects, requirements of occupational safety, industrial sanitation and fire safety during the formation of technical solutions. Goal 17 – GC 08: Ability to work in a team; GC 09: The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine. The total number of programmatic learning outcomes related to the selected goals from the SDGs list is 7. Goal 3 – PO 13: Be able to take into account social, ecological, ethical, economic aspects, requirements of occupational safety, industrial sanitation and fire safety during the formation of technical solutions. To be able to use different types and forms of physical activity for active recreation and leading a healthy lifestyle. Goal 4 – PO 16: Be able to organize the production process using the concept of Industry 4.0 and the use of modern intelligent means of managing technological processes, components of the industrial Internet of Things, communication organization technology and cloud computing; PH18: To be able to create technological processes of modern production with the help of computer-integrated technologies and special software.	

		Goal 9 – PO 3: Be able to apply modern information technologies and have the skills to develop algorithms and computer programs using high-level languages and object-oriented programming technologies, create databases and use Internet resources; PO 6: Be able to apply the methods of system analysis, modeling, identification and numerical methods to develop mathematical and simulation models of individual elements and automation systems as a whole, to analyze the quality of their functioning using the latest computer technologies; P0 9: Be able to design multi-level control and data collection systems for the formation of a database of process parameters and their visualization using human-machine interface tools, using the latest computer-integrated technologies. Goal 17 – PO 14: To be able to use the fundamental concepts and categories of state-building in industrial and social activities to substantiate one's worldview positions and political beliefs, taking into account the processes of the socio-political history of Ukraine, legal foundations and ethical norms.	
	3. Green transition activities in the Curriculum	1. Study of disciplines and/or individual topics: "Intelligent components of pneumatic mechatronic devices", "Computer-integrated technologies of Industry 4.0", "Software development technology of computer-integrated systems", "Management, control and automation at atomic power plants", "Ecological safety". 2. The topic of the students' qualification works is related to the selected goals from the list of SDGs. For example, the following works: student of the group AKTAKIT-19-2 Vakulenko A.O. "Development of Automated Module for sorting plastic Products»; student of group AKTAKIT-19-2 Dyachenko E.S. «Development of Air Quality Control System for Smart Home»; student of group AKTAKITy-20-1 Borodoy E.I. «Development of Portable Individual Source of Alternative Energy»; student of group AKTCI-19-2 Vitokhin M.M. «Development of Automated Energy Saving System in «Smart House»; student of group AKTAKIT-17-1 Tsurkina O.M. «Development of Module for Portable Charger Based on Solar Cells».	1. https://nure.ua/wp-content/uploads/Education_programs/2022/2022_bak_151_opp_aktakit.pdf 2. https://tapr.nure.ua/dijalnist-kafedri/navchalno-metodichna-robota/atestacija-zdobuvachiv

	4. Student Involvement (Non-curricular activity) in green transition activities	1. Participation of students of the CITAR Department in the International Competition of Student Research Works in the specialty 151 "Automation and computer-integrated technologies", which was held on the basis of Mykhailo Ostrogradsky National University of Kremenchug. Student Slyusar Andriy (scientific supervisor Ph.D., associate professor S. V. Khrustalova) won the competition and received the First Degree Diploma with the work "System of Remote Accounting and Control of Water Consumption". 2. Participation of students of the ACT faculty Darina Nenova, Kateryna Stetsenko, Anna Shevchenko, Anastasia Prilipko and Oleksandra Chygrin in the international educational program Summer School “Green Transition for Ukrainian students” at the Wroclaw University of Science and Technology (Wroclaw Tech, Wroclaw, Republic of Poland). 3. Participation of students of the ACT Faculty Darina Nenova, Kateryna Stetsenko in the educational module and research projects of InnoBioDiv at the Biocenter of the University of Cologne. 4. Implementation of training through research by students of the Department of Biomedical Engineering at the educational and scientific base of the department at the Grigoriev Institute for Medical Radiology and Oncology of the National Academy of Medical Sciences of Ukraine	1. https://tapr.nure.ua/vitaiemo-nashogo-studenta-z-peremogoju-u-mizhnarodnomu-konkursi-studentskih-naukovih-robit 2. https://tapr.nure.ua/nashi-studentki-prijnjali-uchast-u-summer-school-green-transition-for-ukrainian-students 3. https://tapr.nure.ua/studenti-z-kelna-ta-ukraini-provodjat-doslidzhennja-na-temu-zmini-klimatu 4. https://www.bme.nure.ua/learning-by-research/

2.10. Self-Ratings in the Green Education

OBJECTIVES	INDICATORS	RATING Evidence of Institutional/ Faculty recognition & action 0 = No 1 = Minimal 2 = Weak 3 = Adequate 4 = Strong 5 = Very strong	URL or location of supporting documents
The University has policies/procedures for considering sustainable development goals in the design and development of the offered study programs	Institutional documents and/or faculty/department/study unit level documents presented on their websites clearly show that green strategies influence the planning, implementation and development of study programs	5	1. Strategy and prospective directions of development of educational, scientific and innovative activity of NURE https://nure.ua/wp-content/uploads/Main_Docs_NURE/strategy_nure_2022.pdf 2. Internationalization strategy of NURE https://nure.ua/wp-content/uploads/Main_Docs_NURE/stratehiia-internatsionalizatsii.pdf 3. The system of ensuring the quality of educational activities https://nure.ua/wp-content/uploads/Main_Docs_NURE/sistema-vnutr-zabezp-jakosti.pdf 4. Regulations on the organization of an inclusive educational process and special educational and rehabilitation support for persons with special educational needs

			https://nure.ua/wp-content/uploads/Main_Docs_NURE/polozhennja-inkljuzivna-osvita.pdf 5. Regulations on the organization of the educational process in NURE https://nure.ua/wp-content/uploads/Main_Docs_NURE/polozhennja-pro-organizaciju-osvitnogo-procesu-v-hnure-2023.pdf
The university offers extracurricular green transition courses	The university offers a university-wide list/catalogue of courses (microcredits) with topics corresponding to the green transition	**5**	1. The course “Environmental Safety” is taught for all university programs https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/environmental-sustainability/sustainability-courses/environmental-safety 2. Course «Smart House» https://nure.ua/wp-content/uploads/Catalog_SD/ppp/smart-house_kaf.imi.pdf 3. Course "Information logistics systems" https://nure.ua/wp-content/uploads/Catalog_SD/ppp/informacijni-logistichni-sistemi_kaf.kitam.pdf 4. Course "Quantum measurement technologies" https://nure.ua/wp-content/uploads/Catalog_SD/ppp/kvantovi-vimirjuvalni-tehnologii_bak_kaf.ivt.pdf 5. Course "Programming of Smart Home microprocessor devices" https://nure.ua/wp-content/uploads/Catalog_SD/ppp/programuvannja-mikroprocesornih-pristroiv-rozumnogo-domu_bak_kaf.mts.pdf

			6. Course "Development of Smart Home microprocessor devices" https://nure.ua/wp-content/uploads/Catalog_SD/ppp/rozrobka-mikroprocesornih-pristroiv-rozumnogo-domu_bak_kaf.mts.pdf 7. Course "Development of strategies for sustainable development of systems" https://nure.ua/wp-content/uploads/Catalog_SD/ppp/rozrobka-strategij-stalogo-rozvitku-sistem_kaf.st.pdf 8. Course "Management, control and automation at nuclear power plants" https://nure.ua/wp-content/uploads/Catalog_SD/ppp/upravlinnja-kontrol-ta-avtomatizacija-na-atomnih-elektrostancijah_kaf.kitam.pdf 8. Course "Automated Smart House Management Systems" https://cn.nure.ua/wp-content/uploads/2021/11/avtomatizovani-sistemi-smart-house-nu.pdf
The institution and its academic units recognize the contribution to green transition as an important or key element of institutional identity & general values	Availability of facts/documents/events confirming the participation of students and teachers in green transition activities	**5**	1. NURE has joined the global initiative Race to Zero, supported by the United Nations and accelerating the achievement of the Sustainable Development Goals and the reduction of greenhouse gas emissions. https://nure.ua/en/nure-joined-the-race-to-zero-initiative 2. Participation of teachers in the GTUA project "Green transformation of Ukrainian universities" https://nure.ua/khnure-bere-uchast-u-proekti-zelena-transformatsiia-v-ukrainskykh-universytetakh

			https://nure.ua/naukovtsi-khnure-vzialy-uchast-u-zasidanniakh-robochoi-hrupy-mizhnarodnoho-proiektu-gtua 3. Participation of students of the ACT faculty in the international educational program Summer School "Green Transition for Ukrainian students" at the Wroclaw University of Science and Technology (Wroclaw Tech, Wroclaw, Republic of Poland). https://tapr.nure.ua/nashi-studentki-prijnjali-uchast-u-summer-school-green-transition-for-ukrainian-students 4. Participation of students of the ACT Faculty in the educational module and research projects of InnoBioDiv at the Biocenter of the University of Cologne https://tapr.nure.ua/studenti-z-kelna-ta-ukraini-provodjat-doslidzhennja-na-temu-zmini-klimatu 5. Head of the MTS Department Iryna Svyd took part in the training "Energy Management in Higher Education Institutions". https://mts.nure.ua/en/participation-in-the-training-energy-management-in-higher-education-institutions 6. Teachers of the department CITAR took part in the V International IEEE Conference on Modern Electrical and Energy Systems (MEES) September 27-30, 2023, Kremenchuk, Ukraine. https://tapr.nure.ua/en/our-colleagues-took-part-in-the-international-conference-modern-electrical-and-energy-system-mees-2023
The University cooperates with stakeholders in the formation of green transformation	Availability of facts/documents/agreed decisions confirming consideration of requests/suggestions of students, alumni and employers regarding the	**5**	1. The result of cooperation between NURE (CITAR department) and the Zaporizhzhya Nuclear Power Plant (https://tapr.nure.ua/nashi-vikladachi-vidvidali-zaporizku-atomnu-elektrostanciju) is the development and inclusion in the University Catalog of elective courses of

policies in educational activities	green transition in the content of study programs and curricula		the course "Management, control and automation at nuclear power plants" https://nure.ua/zagalnij-katalog-vibirkovih-navchalnih-disciplin/vibirkovi-navchalni-disciplini-ciklu-profesijno-praktichnoi-pidgotovki 2. During the development and modernization of study programs at the stages of creation and public discussion of the project, all groups of stakeholders take part in shaping the content of the program https://nure.ua/wp-content/uploads/Education_programs/2022/2022_bak_151_opp_aktakit.pdf 3. Study program "Biomedical engineering" specialty 163 "Biomedical engineering" in the framework of cooperation with the Ukrainian Research Institute of Prosthetics, Prosthetics and Rehabilitation and Sytenko Institute of Spine and Joint Pathology National Academy of Medical Sciences of Ukraine (https://nure.ua/wp-content/uploads/Education_programs/2023/2023_mag_163_opp_bmi.pdf) introduced the disciplines "Design of biotechnical systems" https://www.bme.nure.ua/wp-content/uploads/2023/02/Проектування-біотехнічних-систем.pdf, https://nure.ua/wp-content/uploads/Education_programs/2023/2023_-bak_163_opp_bibmi.pdf, «Devices and systems for replacing lost human organs and functions» http://bme.nure.ua/wp-content/uploads/2021/12/Апарати-і-системи-заміщення-втрачених-органів-та-функцій-людини.pdf

PART 3 GREEN CAMPUS

3.1 Campus description (university location (city center / rural / etc.), climate zone, total campus area, campus ground floor area of buildings, area on campus covered in vegetation, infrastructure solutions)

Kharkiv is located in the north-east of Ukraine on the border of the forest-steppe and steppe physiographic zones. According to the natural and climatic conditions, it belongs to the forest-steppe zone. The climate is moderate. Average annual temperatures: summer + 21 °C, winter - 7 °C.

Kharkiv National University of Radio Electronics is one of the profile universities of Ukraine, in which applied information technologies and innovations in the interests of sustainable development are given the main attention. NURE has the most modern material and technical base for training and research, in which engineering and information technologies can be integrated with other disciplines.

Everything we do at NURE has three different perspectives: innovation, sustainability and reality, which means cooperation and exchange with business, industry, society.

The NURE campus consists of 4 educational buildings, 8 dormitories, office premises and field laboratories and training centers. Educational buildings are located next to each other, compactly, in the central part of the city; at that time, the dormitories were located in different districts of Kharkiv. Educational buildings and dormitories are located in the midst of dense urban development, so they have convenient infrastructure nearby, which facilitates comfortable movement by public transport between dormitories and educational buildings. The maximum travel time from the dormitory to the university is 20 minutes. In general, the campus of the university occupies an area equal to 103,583 square meters, while the built-up area is equal to 53,161 square meters.

The campus territory has an orderly, well-planned infrastructure, many convenient paths, lawns, flower beds. The campus is equipped with open-air sports fields for playing sports, fitness classes, football, which can be used for sports and recreation by both students and teachers, as well as residents of the surrounding areas of the city. In total, the park and sports area of the campus is 50,422 square meters.

On the territory of the university there are comfortable, equipped places for communication and independent work, a cuisine and a network of buffets and cafes.

3.2 Campus water management facilities

All university buildings are connected to the water supply and drainage system of the Kharkiv. The campus is constantly undergoing repairs to the water supply and sewage systems. Wastewater analysis is constantly carried out. Contracts for the purchase of services for centralized water supply, for the purchase of services for centralized drainage, for the provision of services for the maintenance and cleaning of sewers, and for the provision of services for monitoring the quality of wastewater are updated annually (https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/politiki-hnure-u-sferi-zabezpechennja-ekologichnoi-stijkosti/2023-rik).

A policy of reducing the water consumption among students is being implemented, a control consumption system with modern meters has been installed, and it is updated and repaired as needed.

3.3 Energy & climate change policies on campus

Recognizing the catastrophic consequences of climate change and the need for large-scale energy reforms, Kharkiv National University of Radio Electronics has joined the global initiative Race to Zero, supported by the United Nations and accelerating the achievement of

the Sustainable Development Goals and the reduction of greenhouse gas emissions. NURE became the second Ukrainian university to join Race to Zero and strive to ensure a carbon-free future. Currently, 1150 universities around the world have joined the initiative and has committed itself to halving its greenhouse gas emissions by 2030 and creating a clear pathway to net zero by 2050 based on science-based targets. (https://www.educationracetozero.org/current-signatories)

NURE has developed a strategy for the consistent reconstruction of thermal inputs of the main buildings of the university and dormitories in order to maximize savings in heat consumption, which is about 70% of the costs during the heating season. For quick payback, such programs are implemented starting with the buildings of the highest loads (https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/environmental-sustainability/energy-saving-and-climate-change-mitigation-programs/kompleksna-programa-energoefektivnosti-hnure/reconstruction-of-the-heat-input-of-the-university).

In the main building "B" NURE with a standard load of 4.8 Gcal/h operates a modernized central heating and hot water supply. The payback period of the equipment was 1 thermal season and 2 months of the next (8 months of operation) with savings of 25-30% of coolant consumption. These indicators and a significant improvement in the quality of heat supply were achieved due to the introduction of a set of advanced technical solutions in the field of heat supply, namely:

- application of an independent heat supply scheme with forced circulation, which gives an even distribution of thermal energy between consumers in the system without overheating and cooling;
- the use of efficient high-speed plate heat exchangers Alfa Laval at the entrance to the independent circuit, which ensures minimal heat loss during transportation to consumers (≈1%);
- thermal insulation of the pipe system;
- introduction of high-quality weather-dependent regulation in the heating system, which ensures the optimal consumption of the coolant when performing the temperature schedule of the coolant supply;
- introduction of a modern group control system for efficient Wilo circulating pumps with the possibility of changing the circulation speed and organizing a schedule of switching within the group;
- modernization of the alarm system.)

Comprehensive energy saving program for 2015-2025 and The program for the conservation of energy resources in student dormitories for 2020-2025 were implemented (https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/energetika-ta-zmina-klimatu). These programs provide:

- control of the consumption of energy resources, gas, water and a plan for its saving and rational use
- preventive inspections and repairs of distribution networks
- thermal insulation of systems in heating points and external networks, replacement of main pipelines
- insulation of buildings, modernization of the heating system, installation of new radiators, energy-saving lighting system, etc.

The university has approved agreements on the distribution of electric energy, on the electric energy supply by a universal service provider, on the purchase (supply) of electric energy, on services for ensuring the flow of reactive electric energy, etc.

3.4 Waste management on campus

The university has approved the Environmental Policy of the NURE" (https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf). The university hereby recognizes that in achieving its strategic goals, it must protect and care for the environment and declares the priority of environmental aspects in its activities. The policy provides:

- waste reduction and recycling program:
- reducing the use of paper, plastic, disposable items;
- reducing the generation of waste and introducing effective methods of handling it;
- implementation of sustainable resource management methods based on consumption reduction, reuse and recycling.

3.5 Campus transport policy

The approved NURE Environmental Policy provides support for the use of ecological transport of the university, namely, provision of conditions for the use of bicycles and electric vehicles. However, there are no bicycle lanes or charging stations for electric vehicles on the campus.

3.6 Health infrastructure facilities (medical care, sport facilities, healthy eating)

The task of ensuring the good health and well-being of students and teachers, creating favorable social conditions, honest relations with employees is one of the directions of achieving the SDGs by the university.

The university has approved the "POLICY OF IMPLEMENTATION OF A HEALTHY LIFESTYLE AND SUPPORT OF MENTAL HEALTH" (https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/micne-zdorov-ja-i-blagopoluchchja), which is aimed at strengthening individual responsibility for preserving and strengthening one's own health, increasing the level of social inclusion and developing preventive activities.

The university also has a Social and Psychological Center that promotes the full-fledged personal and intellectual development of students, the creation of conditions for the formation of their motivation for self-education and self-development, for fruitful educational and scientific activities; identifying the most effective forms of the educational process organization and its scientific and methodological support.

The NURE Medical Center operates on the campus, which is responsible for the timely provision of first aid to students and employees in case of sudden illnesses and accidents; organization and implementation of sanitary and anti-epidemic measures; provision of treatment, provision of physical procedures, injections, etc.; carrying out sanitary and educational activities through the delivery of applied lectures, etc.

NURE fully supports the policy of smoking ban on the territory and takes specific measures aimed at overcoming tobacco dependence, protecting people from tobacco advertising and marketing, informing about smoking risks, disseminating proven evidence, providing assistance to those who want to quit smoking and create a tobacco-free generation (https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/good-healht-and-well-being/smoke-free-policy).

Playgrounds are equipped on the territory of the university, sports improvement groups from 25 types of sports work on the basis of the Department of physical education and sports, and a special medical group is organized for students with weakened health.

3.7 Security and safety facilities

Provided by the Video Surveillance and Security Department (https://nure.ua/branch/viddil-videosposterezhennya-ta-ohoroni).

A video surveillance system is installed on the campus, entrance to educational buildings and dormitories is carried out with passes and is controlled by security guards. All dormitories are additionally equipped with round-the-clock video surveillance and an alarm button, and are serviced round-the-clock by wardens and housekeepers.

All campus buildings are equipped with fire alarms, the Occupational Safety Center and the Operational and Technical Center ensure the electrical safety of students and teachers.

https://nure.ua/branch/viddil-videosposterezhennya-ta-ohoroni

3.8 Campus facilities for disabled people

The university developed and approved "Regulations on the organization of inclusive educational process and special educational rehabilitation for persons with special educational needs". To coordinate actions to ensure access to education for students with special educational needs, the Special Educational and Rehabilitation Department for Students with Special Educational Needs works https://nure.ua/branch/specialnij-navchalno-reabilitacijnij-viddil-suprovodu-studentiv-z-osoblivimi-osvitnimi-potrebami .

Most educational buildings and dormitories have elevators, the entrance groups to the building are equipped with ramps. However, the reconstruction of toilets for people with disabilities is only at the initial stage.

3.9 Green community development (NGOs, student engaging in sustainable projects, etc., all-university community pushing on green transition)

In order to raise awareness and interest in the SDGs, a permanent Workshop on Sustainable Development Goals (https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii). At the event, presentations by scientists working on issues related to the SDGs present, discussions on the implementation of the SDG achievement tools hold. The priority of this initiative is to provide an analytical and systematic approach in studying the problems and opportunities of the university in achieving specific SDGs.

3.10 Self-Ratings in the Green Campus

OBJECTIVES	INDICATORS	**RATING** **Evidence of Institutional/ Faculty recognition & action** **0 = No** **1 = Minimal** **2 = Weak** **3 = Adequate** **4 = Strong** **5 = Very strong**	**URL or location of supporting documents** (e.g., strategic and organizational plans, meeting agendas or minutes, white papers, mission & policy statements, etc.)
The university has a system of continuous/periodic monitoring of the degree/level of climate neutrality of activities carried out by the university as part of its campus activities	The university has programs, projects, activities, initiatives, any other actions that provide for the assessment and/or measurement of climate neutrality, i.e. the achievement of a net zero emission of carbon dioxide and other greenhouse gases.	**4**	Implementation of "green" technologies in the educational process https://nure.ua/u-khnure-rozpochavsia-etap-vprovadzhennia-zelenykh-tekhnolohij-v-osvitnij-protses NURE joined the Race to zero initiative https://nure.ua/khnure-pryiednavsia-do-initsiatyvy-race-to-zero Technical report "Research works on control of stationary sources of emissions of pollutants into the atmosphere" https://nure.ua/wp-content/uploads/Main_Docs_NURE/vikidi-zabr-rechovin-v-atmosferu_2020.pdf Planning and reporting documentation on nature protection measures of NURE https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/planovo-zvitna-dokumentacija

	The university has committed to achieving carbon neutrality by a specified year.	**5**	https://www.educationracetozero.org/current-signatories
The entire academic community of the university is aware of the need to carry out activities directly on the university campus, directly or indirectly related to the selected goals from the list of SDGs.	The university has a practice of surveys (sociological research) of the academic community regarding the awareness of the feasibility of measures to achieve the SDGs.	**4**	SDG workshop. Environmental sustainability https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist NURE Environmental policy, order No. 241, 12.26.2022 https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf Social and psychological center https://nure.ua/branch/sotsialno-psihologichna-sluzhba Gender education center https://nure.ua/branch/tsentr-gendernoyi-osviti Notices, reports and memorandum https://nure.ua/branch/tsentr-gendernoyi-osviti/povidomlennja-ta-zviti Stakeholder survey https://nure.ua/branch/viddil-litsenzuvannya-akreditatsiyi-ta-vnutrishnoyi-sistemi-zabezpechennya-yakosti-osviti/opituvannja-stekgolderiv NURE Scientific library https://lib.nure.ua/collections/green-planet
The university has internal procedures in place to monitor and control the sustainable use of available space on campus, an even (or similar) distribution of learning activities in the	The university has a practice of rational use of premises and/or open campus space for events.	**5**	The indicator of the efficiency of the space use is included in the KPI of the departments of the University. Monitored by the Scientific-research part https://nure.ua/kljuchovi-pokazniki-efektivnosti-kpi-kafedr

timetable, restricted access workspace versus open space on campus, well-balanced indicators of the level of use of classrooms for educational purposes.			
The university has a program/plan to reduce the use of paper and plastic on campus.	The university has programs, projects, events, initiatives, any other actions to limit the use of paper and plastic on the university territory.	**4**	NURE Policies in the field of environmental sustainability https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/politiki-hnure-u-sferi-zabezpechennja-ekologichnoi-stijkosti/2023-rik
	The university has an electronic document management system.	**4**	1. Center for Information Systems and Technology https://nure.ua/branch/tsentr-informatsiynih-sistem-ta-tehnologiy 2. Working group on the uniform state educational foundation https://nure.ua/branch/grupa-po-roboti-z-yedebo-asu-vnz 3. Electronic journal https://uk.nure.info/blog/201-elektronnyj-zhurnal-xnure-abo-schodennyk-dlya-studentiv.html 4. Electronic resources of the scientific library https://lib.nure.ua/
	The university has a paper reuse policy.	**4**	Contract for the supply of secondary raw materials 12/ BPC-06/19 dated 03.06.2019 https://nure.ua/wp-content/uploads/Benchmarking/Green_Ranking/dogovor-na-vyvoz-makulatury-2019-1.pdf
	The university has a practice of sorting paper and plastic waste.	**4**	Contract for the supply of secondary raw materials 12/ BPC-06/19 dated 03.06.2019

			https://nure.ua/wp-content/uploads/Benchmarking/Green_Ranking/dogovor-na-vyvoz-makulatury-2019-1.pdf
The university has a water reduction/water conservation/water recycling program.	The university has a water reuse policy (for lawn weeding, toilet flushing, vehicle washing, industrial use, etc.).	**3**	NURE Policies in the field of environmental sustainability https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/politiki-hnure-u-sferi-zabezpechennja-ekologichnoi-stijkosti/2023-rik
	The university conducts measures on wastewater treatment.	**4**	NURE Policies in the field of environmental sustainability https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/politiki-hnure-u-sferi-zabezpechennja-ekologichnoi-stijkosti/2023-rik
	The university conducts measures to systematically promote the ideas of conscious water consumption.	**4**	COMPREHENSIVE LONG-TERM ENERGY SAVING PROGRAM IN NURE FOR THE PERIOD 2020-2025 https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf
The university has energy saving measures/programs on campus	Modernization projects of existing buildings to increase energy efficiency have been implemented in the campus	**4**	Reconstruction of the heat input of the university https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/environmental-sustainability/energy-saving-and-climate-change-mitigation-programs/kompleksna-programa-energoefektivnosti-hnure/reconstruction-of-the-heat-input-of-the-university
	The university has policies, programs, projects, events, initiatives, and any other actions related to carbon management and carbon reduction (use of energy-	**4**	NURE joined the Race to zero initiative https://nure.ua/khnure-pryiednavsia-do-initsiatyvy-race-to-zero Energy saving and climate change mitigation programs

	efficient technologies, transition to greener energy sources, etc.)		https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/energetika-ta-zmina-klimatu
The university shall increase (at least maintain the existing level) the surface area of land, campus area covered with vegetation	The university has a policy or take actions to preserve and/or increase the area of the campus area, which is land that absorbs rainwater (i.e., soil, grass, concrete block, synthetic field, etc.), covered by forest and planted vegetation (forest/urban park/garden, other area with trees/shrubs and shrubs/meadow and its biodiversity, natural or planted) or install walls and/or roofs covered with vegetation ("green" walls, internal gardens, "green" roofs, internal plantings in buildings, vertical gardens, etc.)	**4**	University students and employees took part in the subbotnik on their own initiative https://nure.ua/studenti-ta-pracivniki-universitetu-za-vlasnoi-iniciativi-vzjali-uchast-u-subotniku Landscaping of the NURE territory https://nure.ua/ozelenennja-teritorii-hnure NURE Plan for the implementation of environmental protection measures for 2022. https://nure.ua/wp-content/uploads/Benchmarking/Green_Ranking/plan-prirodoohoronnih-zahodiv.pdf NURE Report on the implementation of environmental protection measures for 9 months of 2021. https://nure.ua/wp-content/uploads/Benchmarking/zvit-shhodo-vikonannja-prirodoohoronnih-zahodiv-2021.pdf
The university is increasing the share of renewable energy used by the university in its daily activities.	The campus has a policy or take actions aimed at transitioning to greater use of renewable energy.	**4**	COMPREHENSIVE LONG-TERM ENERGY SAVING PROGRAM IN NURE FOR THE PERIOD 2020-2025 https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf Program for the conservation of energy resources in student dormitories for 2020-2025 https://nure.ua/wp-content/uploads/Benchmarking/obedinennoe-vypolnenie.pdf Semiconductors for solar batteries in Uzbekistan to be developed in Kharkiv

			https://nure.ua/u-harkovi-rozrobljatimut-napivprovidniki-dlja-sonjachnih-batarej-uzbekistanu NURE solar station https://nure.ua/sonjachna-stancija-u-hnure Prototype solar concentrator https://nure.ua/prototip-sonjachnogo-koncentratora Forum-exhibition KharkivBUILD & https://nure.ua/hnure-predstaviv-svoi-rozrobki-na-forumi-vistavci-kharkiv-build-amp-energy Forum of energy efficiency and alternative energy https://nure.ua/hnure-vzjav-uchast-u-forumi-energoefektivnosti-ta-alternativnoi-energetiki
The university has created a safe and inclusive educational environment, in particular, based on the principles of universal design and smart adaptation.	The campus has security and safety equipment (video surveillance cameras, fire hydrants, emergency response buttons, etc.).	**5**	Department of video surveillance and security https://nure.ua/branch/viddil-videosposterezhennya-ta-ohoroni
	The university has a policy of "green" construction of new buildings and renovation of existing buildings (natural ventilation, full natural daylight, availability of the building's energy manager, "green certificate" of the building, etc.).	**4**	COMPREHENSIVE LONG-TERM ENERGY SAVING PROGRAM IN NURE FOR THE PERIOD 2020-2025 https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf
	The university has infrastructural solutions for persons with special educational needs (ramps, elevators, lifts, etc.).	**4**	In 2020 By Decree of the President of Ukraine No. 418/2020 of October 2, 2020 to the staff of the CITAR Department Filipenko O.I. , I.Sh. Nevlyudov and the BME Department O.G. Avrunin, V.V. Semenets was awarded the State Prize of Ukraine in the field of education for 2019 for the series of works "Integrated information and educational environment and rehabilitation measures to ensure equal

			access to quality education for persons with special educational needs." https://nure.ua/naukovcjam-hnure-prisudzheno-derzhavnu-premiju-ukraini-v-galuzi-osviti https://tapr.nure.ua/nashim-kolegam-vruchili Special educational and rehabilitation department for students with special educational needs https://nure.ua/en/branch/special-educational-and-rehabilitation-department-for-students-with-special-educational-needs
The university supports and promotes a healthy lifestyle, including healthy eating	The university has projects, events, initiatives, any other actions to ensure sustainable food choices for everyone on campus, including vegetarian and vegan food.	**3**	Canteen https://nure.ua/branch/yidalnya
	The university has a policy on the use of food products obtained as a result of ecologically safe use of land resources (agriculture).	**3**	Canteen https://nure.ua/branch/yidalnya
	The university has a health promotion program including hygiene, healthy eating, family planning, sports, and exercise.	**5**	Good healht and well-being https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/good-healht-and-well-being
	The university has sports and medical infrastructure.	**5**	Social and psychological center https://nure.ua/en/branch/social-and-psychological-center Special educational and rehabilitation department for students with special educational needs https://nure.ua/en/branch/special-educational-and-rehabilitation-department-for-students-with-special-educational-needs NURE medical center

			https://nure.ua/en/medical-point-of-nure Department of physical education and sports https://nure.ua/en/department/department-of-physical-education-and-sports

PART 4 OVERALL SELF-ASSESSMENT IN THE GREEN TRANSITION DIMENSIONS

OBJECTIVES	**INDICATORS**	**RATING** **Evidence of Institutional/ Faculty recognition & action** **0 = No** **1 = Minimal** **2 = Weak** **3 = Adequate** **4 = Strong** **5 = Very strong**	**URL or location of supporting documents**
The institution and its academic units recognize the contribution to green transition as an important or key element of institutional identity & general values	There is a stated commitment to contribute to green transition as a matter of institutional identity and values (*documented in mission statements, strategic goals, policy statements, development plans, annual reports, website content, etc.)*	**5**	1. Kharkiv National University of Radio Electronics joined the Race to Zero global initiative (One of the two universities of Ukraine) https://nure.ua/khnure-pryiednavsia-do-initsiatyvy-race-to-zero https://www.educationracetozero.org/current-signatories 2. NURE in Times Higher Education World University Rankings 2024, Third in THE WUR2024 among 14 Top Ukrainian Universities https://benchmarking.nure.ua/nure-in-the-2024/ 3. NURE in UI Greenmetric 2022 https://nure.ua/en/nure-in-ui-greenmetric-2022 4. The Charter of the NURE approved by the Ministry of Education and Science of Ukraine, order No. 759, 08.22.2022 https://nure.ua/wp-content/uploads/Main_Docs_NURE/statut.pdf 5. Strategy and prospective directions of development of educational, scientific and innovative activities of the

			NURE https://nure.ua/wp-content/uploads/Main_Docs_NURE/strategy_nure_2022.pdf 6. Strategy of internationalization of the NURE, order of the rector No. 14, January 4, 2019 https://nure.ua/wp-content/uploads/Main_Docs_NURE/stratehiia-internatsionalizatsii.pdf 7. Comprehensive long-term program for energy conservation for the period 2020-2025 https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf 8. NURE Environmental policy, order No. 241, 12.26.2022.https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf 9. Policy of implementation of a healthy lifestyle and support of mental health https://nure.ua/wp-content/uploads/Benchmarking/polityka-zszh-.pdf 10. NURE Policy of equality, diversiy and inclusion https://nure.ua/wp-content/uploads/Benchmarking/polityka-rivnosti-10.pdf 11. Gender equality plan for 2023-2025 (order of the rector No. 215, 6.10.2023) https://nure.ua/wp-content/uploads/2023/215_06.10.2023.pdf 12. Sustainable development goals (SDGs). The objectives of NURE to implement the SDGS. https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs 13. Ecological movement in NURE https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/ekologichna-stijkist/ekologichnij-ruh-v-hnure

			14. Reports on the performance of the tasks of the NURE for SDGs 3, 4, 5, 7, 8, 9, 10, 16, 17 https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs
	The Institution (overall or at the unit level) has expressed a commitment to green transition by the creation of positions (Vice-Rector, Dean, Head of department etc.) and/or competent committees (a Council, Task Force, etc.), or by assigning responsibilities to existing personnel and/or governing bodies and committees.	**5**	1. At the level of the NURE administration, obligations regarding the green transition, the formation of energy saving policies and programs, cost reduction and water purification, air cleanliness, and waste management are entrusted to the Vice-Rector for Administrative and Economic Affairs Grygoriy Vedmid. At the level of promotion, activity accounting and popularization, the obligation is placed on the specialist the Benchmarking Department Ganna Bielianinova, she has completed a series of trainings on green transformation, which is confirmed by certificates. https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/sertifikacija-fahivciv 2. Research and development center of integrated information radio electronic systems and technologies https://nure.ua/en/branch/scientific-research-part-srp/srp-structure/research-and-development-center-of-integrated-information-radio-electronic-systems-and-technologies-rdc-iirest 3. Council of young scientists https://nure.ua/en/branch/council-of-young-scientists 4. The University Council for Quality Assurance of Educational Activities https://nure.ua/branch/akademichna-dobrochesnist-ta-zabezpechennja-jakosti-osviti 5. Department of benchmarking and web-management

			https://nure.ua/en/branch/department-of-benchmarking-and-web-management 6. Special educational and rehabilitation department for students with special educational needs https://nure.ua/en/branch/special-educational-and-rehabilitation-department-for-students-with-special-educational-needs 7. Development office https://nure.ua/en/branch/development-office 8. Center for the collective use of scientific equipment "Research center of laser and optoelectronic technologies" https://nure.ua/en/branch/scientific-research-part-srp/srp-structure/center-for-the-collective-use-of-scientific-equipment-research-center-of-laser-and-optoelectronic-technologies 9. Gender education center https://nure.ua/en/branch/gender-education-centerr
	The Institution (overall or at the unit level) has published criteria for hiring, tenure, and promotion that recognize faculty members' contributions to green transition through institutional formal or informal support	**5**	1. Certification of specialists https://nure.ua/en/conference-workshops/sustainable-development-goals-sdgs-the-objectives-of-nure-to-implement-the-sdgs/certification-of-specialists 2. Certification of pedagogical staff https://nure.ua/branch/viddil-kadriv/informacijni-povidomlennja 3. The procedure for conducting competitive selection for filling vacant positions of scientific and pedagogical staff and concluding labor contracts with them at the NURE, approved by Order No. 400, 12.29.2021 https://nure.ua/wp-content/uploads/Main_Docs_NURE/porjadok_konkurs-npp-zatv-vchr_24_12_21.pdf

	The Institution has established multidisciplinary and interdisciplinary structures (such as an institute/center/unit) for research, education, and policy development on green transition	**5**	1. Department of benchmarking and web-management https://nure.ua/en/branch/department-of-benchmarking-and-web-management 2. Development office https://nure.ua/branch/viddil-perspektivnogo-rozvitku 3. Technology and innovation support center https://nure.ua/branch/viddil-perspektivnogo-rozvitku/centr-pidtrimki-tehnologij-ta-innovacij-tisc 4. Research and Development Center of Integrated Information Radio Electronic Systems and Technologies NURE https://nure.ua/wp-content/uploads/2021/polozhennja-ndc-iirest-proekt.pdf 5. Science park "Synergy" https://nure.ua/en/branch/science-park-synergy 6. Center for the collective use of scientific equipment "Research center of laser and optoelectronic technologies" https://nure.ua/en/branch/scientific-research-part-srp/srp-structure/center-for-the-collective-use-of-scientific-equipment-research-center-of-laser-and-optoelectronic-technologies 7. Gender education center https://nure.ua/en/branch/gender-education-centerr 8. Separated structural subdivision "Pilot plant of Kharkiv national university of radioelectronics" https://nure.ua/en/branch/scientific-research-part-srp/srp-structure/pilot-plant-of-nure
Institutional management (overall or unit level) treats green transition as an integral part of the overall operational	Institutional and/or unit-level documents clearly show that green strategies have an effect on the planning, implementation, and realization of operational objectives (short, middle, or long-term goals).	**5**	1. The Charter of the NURE approved by the Ministry of Education and Science of Ukraine, order No. 759, 08.22.2022 https://nure.ua/wp-content/uploads/Main_Docs_NURE/statut.pdf 2. Strategy and prospective directions of development of educational, scientific and innovative activities of the

management strategy and practices			NURE https://nure.ua/wp-content/uploads/Main_Docs_NURE/strategy_nure_2022.pdf 3. Internationalization strategy of the NURE, order of the Rector No. 14, January 4, 2019. https://nure.ua/wp-content/uploads/Main_Docs_NURE/stratehiia-internatsionalizatsii.pdf 4. Comprehensive long-term program for energy conservation in NURE for the period 2020-2025 https://nure.ua/wp-content/uploads/Benchmarking/obedinennaja-programma.pdf 5. NURE Environmental policy, Order No. 241, 12.26.2022.https://nure.ua/wp-content/uploads/2022/doc/241_26.12.2022.pdf 6. Policy for the implementation of a healthy lifestyle and mental health support https://nure.ua/wp-content/uploads/Benchmarking/polityka-zszh-.pdf 7. NURE Equality, Diversity and Inclusion Policy https://nure.ua/wp-content/uploads/Benchmarking/polityka-rivnosti-10.pdf 8. Gender equality plan of the NURE for 2023-2025, Order of the rector No. 215, 6.10.2023 https://nure.ua/wp-content/uploads/2023/215_06.10.2023.pdf 9. Sustainable development goals (SDGs). The objectives of NURE to implement the SDGS. https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii 10. 10. NURE in UI Greenmetric 2022 https://nure.ua/en/nure-in-ui-greenmetric-2022
Specifically, the Institution (and/or its	Institutional and/or unit-level documentation indicates the	**5**	SDG 3 Good health and well-being https://nure.ua/konferencii-ta-workshops/seminar-cili-

units) includes good practices for green transition	integration of good practices in everyday green campus life and operational management		stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/micne-zdorov-ja-i-blagopoluchchja SDG 4 Quality education https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/jakisna-osvita SDG 5 Gender equality https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/genderna-rivnist SDG 7 Affordable and clean energy https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/dostupna-ta-chysta-enerhiia SDG 8 Decent work and economic growth https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/gidna-pracja-ta-ekonomichne-zrostannja SDG 9 Industry, innovation and infrastructure https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/promislovist-innovacii-ta-infrastruktura SDG 10 Reducing inequality https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/skorochennja-nerivnosti SDG 16 Peace, justice and strong institutions https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/mir-spravedlivist-ta-silni-instituti SDG 17 Partnership for the goals https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/partnerstvo-zaradi-stijkogo-rozvitku

			1. The teachers of the CITAR department developed the "Nure energy" automated lighting control system, which was presented at the KharkivBUILD & Energy exhibition as part of the Energy Efficiency and Alternative Energy Forum https://nure.ua/hnure-vzjav-uchast-u-forumi-energoefektivnosti-ta-alternativnoi-energetiki 2. The stage of introduction of "green" technologies into the educational process has begun at the BME department. The teachers of the department conducted the first tests of energy-saving power sources - solar panels and wind turbines. https://nure.ua/u-khnure-rozpochavsia-etap-vprovadzhennia-zelenykh-tekhnolohij-v-osvitnij-protses 3. Cooperation between NURE (CITAR department) and Zaporizhzhia nuclear power plant has been established https://tapr.nure.ua/nashi-vikladachi-vidvidali-zaporizku-atomnu-elektrostanciju 4. Participation of students of the CITAR department in the International competition of student scientific works in the specialty 151 "Automation and computer-integrated technologies", which was held on the basis of Mykhailo Ostrogradsky Kremenchug National University. A student of the group КІТПІВм-21-1 Slyusar Andriy (supervisor, ass. Prof. S. V. Khrustalova) won the competition and received a Diploma of the I degree with the work "System of remote accounting and control of water consumption" https://tapr.nure.ua/vitaiemo-nashogo-studenta-z-peremogoju-u-mizhnarodnomu-konkursi-studentskih-naukovih-robit 5. Student scientific work on experimental research of the modes of operation of a solar station based on silicon

			monocrystalline panels. Solar panels are installed on the roof of the main building of the University https://nure.ua/en/nure-solar-station 6. Professor of the CITAR Department Pysmenetskyi V.O. developed and patented a prototype solar concentrator https://nure.ua/en/prototype-solar-hub 7. The authors O.I. Filipenko, I.Sh. Nevlyudova, O.G. Avrunin, N.M. Hayduk, V.A. Pavlysh, O.Z. Potymko, A.D. Saleeva, V.V. Semenets, Fedasyuka D.V. received the State Prize of Ukraine in the field of education in 2019 in the "Profesional and technical education" nomination for the work "Integrated information and educational environment and rehabilitation measures to ensure equal access to quality education for persons with special educational needs". Order of the President of Ukraine No. 418/2020 https://www.president.gov.ua/documents/4182020-35213. The awarding of the State Prize gives high praise to the efforts of NURE in achieving the Sustainable Development Goals of the UN, namely, reducing inequality, ensuring inclusion for vulnerable population groups. 8. Participation of university teachers in the Erasmus Jean Monnet Modules project "Ukraine-EU: circular economy solutions for smart and sustainable cities" (SDG 4,11,12,17). The overall goal of the project is to draw the attention of the Ukrainian community to the need for circular economy solutions for the development of smart cities and a sustainable future of each country in order to promote integration and cooperation between Ukraine and the European Union, using best practices and strategies for change and reconstruction. https://nure.ua/en/university/international-activity/international-programs-and-academic-

			mobility/erasmus/about-erasmus/jean-monnet-programme/eco4smart
The Institution (and/or units) provides opportunities for faculty and staff development to enhance understanding, teaching & research in green transition and sustainability	Institution documentation indicates that it organizes or facilitates faculty and staff access to conferences, seminars, and lectures and continues education on green transition issues	**5**	1. Permanent Seminar "Goals of Sustainable Development" https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/postijno-dijuchij-seminar-cili-stalogo-rozvitku 2. Provisions on improving the qualifications of pedagogigal and scientific staff at the NURE, order No. 30, 01.02.2022 https://nure.ua/wp-content/uploads/Main_Docs_NURE/polozh_pk_2022_v_3.pdf 3. Certification of specialists in the SDGs https://nure.ua/konferencii-ta-workshops/seminar-cili-stalogo-rozvitku-zavdannja-hnure-shhodo-ih-realizacii/sertifikacija-fahivciv 4. International conference MODERN ELECTRICAL AND ENERGY SYSTEM (MEES-2023) https://tapr.nure.ua/en/our-colleagues-took-part-in-the-international-conference-modern-electrical-and-energy-system-mees-2023 5. Participation in the training "Energy Management in Higher Education Institutions" https://mts.nure.ua/uchast-u-treningu-energetichnij-menedzhment-u-zakladah-vishhoi-osviti 6. Participation in the NET ZERO ON CAMPUS INITIATIVE webinar https://nure.ua/net-zero-on-campus 7. International Conference on Natural Science and Technologies https://nure.ua/en/conference-workshops/international-conference-on-natural-science-and-technologies-iconat/iconat-2019 8. International Scientific and Practical Conference

			«Modern strategies of economic development: science, innovation and business education» https://nure.ua/konferencii-ta-workshops/mizhnarodna-naukovo-praktychna-konferentsiia-suchasni-stratehii-ekonomichnoho-rozvytku-nauka-innovatsii-ta-biznes-osvita 9. International scientific and technical conference "Modern directions of development of information and communication technologies and management tools" https://nure.ua/konferencii-ta-workshops/mizhnarodna-naukovo-tehnichna-konferencija-suchasni-naprjami-rozvitku-informacijno-komunikacijnih-tehnologij-ta-zasobiv-upravlinnja 10. Information about international professional development events in which NURE is a co-organizer https://nure.ua/en/advanced-training/information-about-international-professional-development-events-in-which-nure-is-a-co-organizer

CONCLUSIONS

In Kharkiv National University of Radio Electronics, a lot has already been done in the modernization of the energy consumption and supply system of the campus. The issue of sustainable development is actively introduced into the educational process, students are offered a number of educational programs and courses in this direction. Work is underway to involve the academic staff in conducting scientific research in the direction of sustainable development. A lot of attention is paid to the development and enforcement of university policies in the direction of green transformation.

The NURE self-assessment results showed that the university is at the beginning of the green transformation path, but fully aimed at achieving the chosen goals of sustainable development and green transformation.