



Report
on
Sustainable Development Goal 13

13 CLIMATE
ACTION



Bukhara 2023

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On May 16, 2022, Istanbul University of Commerce organized an international symposium on “Environment, Climate Change and Ecology in the Context of Administrative Law and Law of Administrative Jurisdiction.” This prestigious symposium was organized by the Faculty of Law of Istanbul University, the Scientific and Practical Center of Administrative Law and Science, Bukhara State University, Baku State University, L.N. Gumilyov Eurasian National University, Al-Farabi Kazakh National University, Atyrau University named after Kh.Dosmukhamedov, VISION International University, The Uzbek-Finnish Pedagogical Institute at Samarkand State University, Sarajevo International was held in collaboration with the University (IUS), the Kosovo Institution of Higher Education (UBT) and the Tashkent Financial Institute. It was attended by Associate Professor of the Department of “National Idea, Fundamentals of Spirituality and Legal Education” of the Faculty of History and Cultural Heritage of BukhSU Turdiev Bekhruz Sobirovich (“Environmental Policy and reforms in the ideosphere of New Uzbekistan”), (PhD) Samadova Sarvinoz Samad kyzy (“Özbekistan’da Antropojen Değişen Doğal Çevreyi Korumanın Hukuki esasları”), senior lecturer Shirinov Anvar Kanoatovich (“The implementation of Ecological Agenda in Uzbekistan”) took part in the presentation and received recognition from the organizers and participants of the symposium¹.

December 5, 2022, within the framework of the project of the United Nations Development Program (UNDP), the Green Climate Fund and the Center for Hydrometeorological Service of the Republic of Uzbekistan (Uzgidormet) “National Adaptation Plan (NAP) based on sectors to promote medium- and long-term adaptation planning to change climate in Uzbekistan”, a conference “gender and climate change interrelationship” was held, a training seminar was organized.

Students of the Faculty of Natural Sciences of Bukhara State University took an active part in the seminar. During the seminar, students received answers to all their questions. The learning objective is to link climate change to gender-based violence and raise students' awareness of gender-based violence, discuss climate change and vulnerabilities in the region, and identify gender gaps².

On September 28, 2021, Professor of the Department of “Islamic History and Source Study, Philosophy” of the Faculty of History and Cultural Heritage of Bukhara State University Hakima Yusupovna Salomova took part in the international webinar on geology and climate change (GeoClimate-2021), organized by the California Research Center Endeavor. Professor Salomova Hakima Yusupovna from among the leading scientific specialists from Italy, the Philippines, India, Ethiopia, China, USA, Warsaw, Mexico, Canada, Iran took part in a prestigious webinar with the presentation “Abu

¹ <https://telegra.ph/Buxoro-davlat-universiteti-professor-oqituvchilari-ma%CA%BCmuriy-huquq-va-ma%CA%BCmuriy-yurisdiksiya-bo%CA%BByicha-xalqaro-simpoziumda-ishtirok-05-17>

² https://t.me/buxdu_uz/29029

Rayhan Beruni about the Quantity and measures of Natural Being”. Professor Khakima Salomova was awarded a certificate for her worthy participation in this webinar³.

13.2.1

The theoretical aspects of the process of conducting experiments on low-carbon energy sources at BukhSU have been deeply studied by university scientists, and their scientific work has reached the stage of practical research. Due to the hot climate of Bukhara and the convenience of using solar energy, a green energy area has been established at the university, and several objects of this area are regularly powered by solar energy.



Main traffic light near the entrance gate of the university operating in solar energy.

Before being charged by solar panels, this traffic light used to be powered by electricity. As a result of natural and technical reasons, when the electricity supply was cut off, the traffic light would not work and the traffic would be chaotic on the road. Based on the project proposed by university scientists, these traffic lights are regularly used after the power source is provided by solar energy.

Furthermore, the barrier installed to control vehicle access to the university is powered by the energy supplied by these solar panels.



Gate barrier at the main entrance of the university operating in solar energy.

³ <https://telegra.ph/Professor-Hakima-Salomova-GeoClimate-2021-boyicha-tashkil-etilgan-xalqaro-Webinarda-gi-munosib-ishtiroki-uchun-sertifikat-bilan-t-10-11>



Because there are three shifts at the university and dormitory is situated near, it is natural that university paths are crowded with students and this requires illuminating these active paths at evenings. Path projectors at the entrance door are also connected to the solar panels which can continuously supply the projectors charged.

Path projectors operating in solar energy.

Yearly energy generating capacity of the experimental solar panels is about 95 GJ.

This project was fully financed by the University Innovation Fund. University scientists plan to convert other traffic lights, organizations and households of Bukhara region to solar energy.

The consumption of electricity in the university shows the dynamics of change in different trends from year to year. Over the past 5 years, the number of subjects and directions taught at the university has increased the sharp increase in the number of students, as well as the provision of modern educational equipment and laboratory equipment has led to an increase in this indicator.

The total electricity usage of BukhSU

| No | Months | 2021 | 2022 |
|----|-----------|--------|--------|
| 1 | January | 232900 | 119400 |
| 2 | February | 234440 | 195760 |
| 3 | March | 180960 | 175080 |
| 4 | April | 226280 | 171040 |
| 5 | May | 145820 | 132640 |
| 6 | June | 188540 | 161700 |
| 7 | July | 133980 | 103540 |
| 8 | August | 118500 | 107740 |
| 9 | September | 206060 | 115100 |
| 10 | October | 190100 | 137900 |
| 11 | November | 278180 | 195960 |

| | | | |
|----|--------------|----------------|----------------|
| 12 | December | 306500 | 193960 |
| | Total | 2442260 | 1809820 |

13.2.2 Total energy used from low-carbon sources

The only source of low carbon energy production in the university is solar energy, which is being experimented in low energy requiring appliances. This include traffic light, automatic gate barrier and path projectors And the source is solar panels. Yearly amount of low carbon energy generated by solar panels is about 95 GJ.



To date, 1956 solar panels have been installed at the Bukhara State University and electricity production with a capacity of 1085 kW has begun. As a result of the measures taken, the established plan was fulfilled by 120%⁴.



Review of solar panels installed on the roof of Bukhara State University buildings

⁴ https://t.me/buxdu_uz/34271

13.3.1. Local education programs or campaigns on climate

There are a large number of climate-related programs in existing university curricula⁵.

| No | Degree | Course name |
|----|----------|--|
| 1 | Bachelor | Applied ecology |
| 2 | Bachelor | Basics of ecology |
| 3 | Bachelor | Bioecology |
| 4 | Bachelor | Bioecology of vertebrates |
| 5 | Bachelor | Climate change and ecological adaptation |
| 6 | Bachelor | Ecological and agrotourism |
| 7 | Bachelor | Ecological expertise |
| 8 | Bachelor | Ecological genetics |
| 9 | Bachelor | Ecological monitoring |
| 10 | Bachelor | Ecological physiology |
| 11 | Master | Ecological physiology of plants |
| 12 | Bachelor | Ecological problems of agrochemistry |
| 13 | Bachelor | Ecology |
| 14 | Bachelor | Ecology and environmental protection |
| 15 | Bachelor | Ecology and land law |
| 16 | Bachelor | Ecology and nature protection |
| 17 | Bachelor | Ecology of Bukhara region |
| 18 | Bachelor | Ecology of populations |
| 19 | Bachelor | Ecology of regions and settlements |
| 20 | Bachelor | Economy of environment and natural resources |
| 21 | Bachelor | Environment Economy |
| 22 | Master | Environmental and socio-economic problems of modern energy |
| 23 | Bachelor | Environmental aspects of sustainable development |
| 24 | Bachelor | Environmental chemistry |
| 25 | Bachelor | Environmental law |
| 26 | Bachelor | Environmental policy |
| 27 | Bachelor | Environmental protection |
| 28 | Bachelor | Environmental protection and rehabilitation |
| 29 | Bachelor | Environmental security in agriculture |
| 30 | Bachelor | Environmental tourism |
| 31 | Bachelor | F&B environment |

| | | |
|----|----------|--|
| 32 | Master | Fish ecology |
| 33 | Bachelor | General Hydrology and Climatology |
| 34 | Bachelor | Geoecology |
| 35 | Bachelor | Geoecology and Landscape Ecology |
| 36 | Master | Global Climate Change and Its Impact on Uzbekistan's Natural Resources |
| 37 | Bachelor | Greenhouse production of environmentally friendly products |
| 38 | Bachelor | Hospitality industry environment |
| 39 | Bachelor | Hydroecology |
| 40 | Bachelor | Hydroecology and geoecology |
| 41 | Bachelor | Hydrology and climatology |
| 42 | Bachelor | Information and communication technologies in ecology |
| 43 | Bachelor | Insect ecology |
| 44 | Master | Land resources management and environmental protection |
| 45 | Master | Methodology of teaching ecology and natural science |
| 46 | Master | Methods of teaching ecology |
| 47 | Bachelor | Modern environmental problems |
| 48 | Master | Modern methods of environmental analysis |
| 49 | Master | Modern methods of environmental analysis |
| 50 | Master | Paleoecology and the dynamics of civilization |
| 51 | Bachelor | Physical ecology |
| 52 | Bachelor | Reclamation and ecology of degraded lands |
| 53 | Bachelor | Social ecology |
| 54 | Bachelor | Soil and agroecologya |
| 55 | Master | Soil and climate change |
| 56 | Bachelor | Soil and environmental pollution |
| 57 | Bachelor | Soil and environmental pollution |
| 58 | Bachelor | Soil biology and ecology |
| 59 | Bachelor | Soil ecology |
| 60 | Master | Sustainable environment physics |
| 61 | Master | Urban and industrial ecology |
| 62 | Master | Use of alternative energy in conservation |

13.3.2 Climate Action Plan

Bukhara State University in its strategic plan for environmental sustainability for 2021-2026 pays attention to the following priorities⁶:

1. Research. Increased research and activity in the area of environmental sustainability.
2. Curriculum. The entire educational focus is on teaching students the disciplines of ecology and environmental protection.
3. Energy. Shifting from alternative energy to lighting and heating of buildings to reduce carbon emissions associated with energy consumption.
4. National project “green space”. Increasing biodiversity and enriching the species composition of the university. Study of existing trees. University - creation of a green space platform.
5. Waste problem. Development of technology for disinfection and recycling of waste generated on the territory of the university.

13.3.3 Co-operative planning for climate change disasters

The letter of the Bukhara Regional Emergency Management Department dated September 25, 2023 No. 1/32-2739 states that in order to ensure the execution of the Decree of the President of the Republic of Uzbekistan dated May 30, 2022 No. PF-144 “on further improvement of the seismic safety system of the Republic of Uzbekistan” Academy of Sciences and the Ministry of Emergency No. 24.7/2 dated October 13 of senior personnel and employees of government agencies for ensuring seismic safety, it talks about the creation of a National electronic platform (curriculum) designed to prepare the population for earthquakes.

For this purpose, **910 employees of Bukhara State University** registered through the National Platform and gave a positive result for a special test task on the rules of conduct in case of natural disasters⁷.

Sample:



⁶ https://buxdu.uz/media/ekologik/climate_action_plan.pdf

⁷ <https://zilzilaplatforma.fvfmfi.uz/kurs>

As part of the national project “Green Space”, implemented on the initiative of the President of the Republic of Uzbekistan, intensive work is also underway in the city of Bukhara to plant seedlings that meet the climatic conditions of the region.



In all blocks, on roadsides, in courtyards and around enterprises, organizations and institutions of the city of Bukhara, within the framework of the “current 40 days”, seedlings were planted and work was carried out to create green spaces.



Students of Bukhara State University also take an active part in these good deeds. In particular, on October 27, 2022, at the initiative of the city department of the Bukhara Youth Agency, an action was held to plant seedlings in the park adjacent to the “Ko’hna va Boqiy Buxoro” cultural center. The action was attended by members of the board of the Youth Union, those responsible for the mayor's office of Bukhara and the city department of the agency, and active student volunteers of the university⁸.

⁸ <https://telegra.ph/Yashil-makon-loyihasisida-BuxDU-talabalari-ham-faol-ishtirok-etishdi-10-27>



13.3.4 Inform and support government

In November 2022, the university continues activities as part of the nationwide green space program. With the participation of teaching staff and students of the Faculty of Economics and Tourism, managers and employees of the Bukhara Regional Department of the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection and the Center for State Environmental Expertise, more than 100 seedlings of ornamental trees were planted⁹.

13.3.5 Collaborating with NGOs on climate adaptation

The next research of the Bukhara regional branch of the "Young Future" foundation was held together with the students of the Faculty of Agronomy and Biotechnology of the Bukhara State University in the "Bukhara Varnet" greenhouse cluster.



⁹ https://t.me/buxdu_uz/28462

During the study, Hamroyev Beshim Qurbanovich, the director of the Bukhara Varnet cluster, gave information about the activity of the greenhouse and more than 500 available vacancies there. Most importantly, interesting information was given about the possibility of working in the green nature in the same tropical climate in all 4 seasons.



13.4.1 Commitment to carbon neutral university

Bukhara State University has become a participant in the Race to Zero movement of universities around the world, aimed at protecting the environment for the sake of a sustainable future.

We are pleased to announce that Bukhara State University has taken a historic step towards a greener nature, environment and sustainable future by joining Race to Zero, a global initiative supporting a Zero Carbon World.

The United Nations Environment Programme, in partnership with EAUC and second Nature, is an international Race to Zero initiative that brings together leaders in the education sector and supports collective efforts. Bukhara State University is also part of this transformational movement.

13.4.2 Carbon neutral: achieve by date

Among the 1,181 prestigious educational institutions around the world, Bukhara State University is proud to be one of the 539 advanced educational institutions that have sincerely taken up this task. For reference, 3 universities in Uzbekistan are ASOs of this organization¹⁰.

Our goal is to achieve a net zero waste benchmark by 2040¹¹.

¹⁰ <https://www.educationracetozero.org/current-signatories>

¹¹ https://t.me/buxdu_uz/33710

Current Signatories

Filter by country

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| Institution | Country | Net-Zero Target | Interim Target | | | Institutions involved |
|----------------------------------|------------|-----------------|----------------|---------|---------|-----------------------|
| Bukhara State University | Uzbekistan | 2040 | 2030 | Pending | Plan | 3 |
| Tashkent Medical Academy | Uzbekistan | 2025 | 2030 | Plan | Publish | 1 |
| Tashkent State University of Law | Uzbekistan | 2025 | 2025 | Pending | | 39,271 |

BUKHARA STATE UNIVERSITY NET-ZERO PLAN¹²

Introduction:

Bukhara State University is committed to leading the way towards a sustainable future by implementing a comprehensive net-zero plan. This plan outlines the actions and interim targets that the university will undertake to achieve carbon neutrality and reduce its environmental impact significantly.

Vision:

By 2045, Bukhara State University envisions itself as a carbon-neutral institution, where all emissions are balanced by equivalent carbon removal, energy efficiency and sustainable practices. The university will be recognized as a sustainability leader within the higher education community, inspiring students, staff and the broader community to become environmentally conscious global citizens.

Actions and Interim Targets:

1. Energy Efficiency and Renewable Energy:

Interim Target 1 (2026): Install solar panels on university buildings to generate 50% of the total energy demand on-campus.

Interim Target 2 (2028): Increase energy efficiency by 20% through building retrofitting and technology upgrades.

Interim Target 3 (2030): Implement smart energy management systems to optimize energy consumption and reduce wastage.

2. Sustainable Transportation:

Interim Target 1 (2026): Increase the use of electric and hybrid vehicles in the university's transport fleet to 20%.

Interim Target 2 (2026): Encourage the use of bicycles and promote public transportation among students and staff, aiming to reduce single-occupancy vehicle trips by 30%.

3. Waste Reduction and Recycling:

Interim Target 1 (2026): Implement a comprehensive waste management system that diverts 30% of waste from landfills through recycling and composting initiatives.

¹² <https://buxdu.uz/media/ekologik/net-zero-plan.pdf>

Interim Target 2 (2026): Promote the use of reusable water bottles, containers, and other sustainable practices to reduce single-use plastic consumption by 50%.

Interim Target 3 (2025): Establish partnerships with local recycling facilities and organizations to maximize recycling efficiency and explore innovative waste reduction technologies.

4. Carbon Offset and Removal:

Interim Target 1 (2030): Invest in verified carbon offset projects to offset 10% of the university's remaining emissions that cannot be reduced internally.

Interim Target 2 (2028): Implement afforestation and reforestation projects on campus and in nearby areas to sequester CO₂.

Interim Target 3 (2030): Collaborate with research departments to explore and support cutting-edge carbon removal technologies.

5. Curriculum Integration and Awareness:

Interim Target 1 (2026): Integrate sustainability and climate change topics into 20% of the university's academic programs across disciplines.

Interim Target 2 (2025): Organize sustainability workshops, seminars, and awareness campaigns to engage students, staff, and the local community in sustainable practices.

Interim Target 3 (2025): Establish a sustainability center to promote research, innovation, and outreach in environmental sustainability.

6. Engagement:

Interim Target 1 (2024): Engage with faculty, staff, students, and the local community to gather feedback and ideas for sustainable initiatives.

Interim Target 2 (2025): Establish a sustainability committee comprising representatives from different departments to guide and oversee sustainability efforts.

Interim Target 3 (2026): Foster partnerships with local businesses, government agencies, and NGOs to leverage resources and expertise for sustainability projects.

Monitoring and Reporting: The university will regularly monitor progress towards achieving interim targets and the net-zero goal. Annual sustainability reports will be published to transparently communicate results, challenges, and future action plans.

By following this net-zero plan with clear actions and interim targets, Bukhara State University aims to lead by example and contribute significantly to the global efforts in combating climate change and securing a sustainable future for all.