

REPORT ON THE IMPLEMENTATION OF THE NSMTU SUSTAINABLE DEVELOPMENT PROGRAM

Since the United Nations Conference on the Human Environment in 1972, the organizations of the United Nations system have accorded high priority to the protection of the natural environment and related fields, as evidenced by a series of summits and conferences, ratified conventions and treaties, and also resolutions, reports and programs of action adopted by their respective legislative and governing bodies. The Report of the World Commission on Environment and Development (1987) and Agenda 21 of the United Nations Conference on Environment and Development (1992) were milestones in this area, as were three landmark conventions - on climate change, biodiversity and desertification. Documents such as The Future We Want (2012) and the more recent 2030 Agenda for Sustainable Development (2015) of 17 Sustainable Development Goals provided further impetus. The organizations of the United Nations system have responded with great enthusiasm to these calls, making efforts to integrate environmental sustainability into their strategies, operations and activities. The concept of sustainable development is traditionally seen as bringing together the social, political and economic spheres of human activity. The development of innovative financial instruments can contribute to the improvement of sustainable development processes and, with the support of the state, a balanced development of the green investment market can be organized. The world is gradually learning to live within the concept and rules of sustainable development.

In 2015, namely on September 25, 193 countries adopted the 2030 Agenda for Sustainable Development, which identified 17 global Sustainable Development Goals (SDGs).



Navoi State Mining and Technological University actively participates in the development of society, provides equal opportunities for education of all segments of the population and solves the global problems of the Navoi region and Uzbekistan. The University is aware of its role in creating a fair, educated and socially responsible community. We are determined to promote sustainable development in research and education. As a mining and technical university, we are able to develop solutions to global problems based on sustainable development goals. Navoi State Mining and Technological University provides students, teachers and researchers with an inspiring educational environment that encourages research, experimentation and the search for the best possible solutions for our common sustainable future. In our activities, we want to ensure the sustainable development of Uzbekistan based on the balance of three significant elements, such as ecology, public interests and economic development. The development of our campus is increasingly being carried out in accordance with the principles of sustainable development. The goals of the sustainable development strategy of Navoi State Mining and Technological University for 2022-2026 are: • further reduction of the environmental impact resulting from the activities of the university, ensuring activities at a level that meets the requirements of Russian environmental legislation; • assistance in the implementation of state policy in the field of environmental protection and sustainable development To achieve these two goals, NSMTU will focus on: • improve their environmental and sustainability performance through six hotspots: amenities and infrastructure, energy and climate change, waste management, water, transport and education; • further integration of sustainable development goals into the main objectives of the university: education and research; • encouragement and support of initiatives of the university community aimed at the implementation of the UN sustainable development goals. The proposed measures will significantly reduce the carbon footprint of the university and minimize its impact on the environment.

Analysis of NSMTU infrastructure indicators

1. Environment and infrastructure

One of the aspects of the implementation of this indicator is the increase in the territory of the university covered with vegetation, i.e. creation of new public gardens, including lawns, gardens, green roofs, indoor planting, vertical gardens, etc.

A possible implementation option is to attract university volunteer associations, support student projects for additional campus landscaping, and the creation of vertical gardens.

The temporal dynamics of the main indicators of NSMTU in the direction of "Environment and infrastructure" are presented in table 1.

The development of our campus is increasingly being carried out in accordance with the principles of sustainable development.

The goals of the sustainable development strategy of Navoi State Mining and Technological University for 2022-2026 are:

- further reduction of the environmental impact resulting from the activities of the university, ensuring activities at a level that meets the requirements of Russian environmental legislation;
- assistance in the implementation of state policy in the field of environmental protection and sustainable development

To achieve these two goals, NSMTU will focus on:

- improve their environmental and sustainability performance through six hotspots: amenities and infrastructure, energy and climate change, waste management, water, transport and education;
- further integration of sustainable development goals into the main objectives of the university: education and research;
- encouragement and support of initiatives of the university community aimed at the implementation of the UN sustainable development goals.

The proposed measures will significantly reduce the carbon footprint of the university and minimize its impact on the environment.

Table 1. Temporal dynamics of the main indicators in the "Environment and infrastructure" direction

Index	2020 year	2021 year	2022 year
Ratio of open space area to total area, %	> 85%-92%	> 90-95%	> 90-95%
Parking area, m ²	13060 sq.m.	13060 sq.m.	5909,03 sq.m.
Campus area covered with forest vegetation, %	150192,35	17,6%	> 22–35% (23,5%)
Campus area covered with planted vegetation, %	112331 sq.m.	> 30-40%	> 30-40%
The total area of the campus, capable of water absorption,	358376,4 sq.m.	> 30%	> 30% (43,7%)

except for the forest and planted vegetation,%			
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2. Energy and climate change

Indicators: Use of energy efficient appliances, adoption of smart buildings/building automation/smart buildings, renewable energy policies, overall electricity consumption, energy conservation programs, green building elements, climate change adaptation and mitigation, greenhouse gas emission reduction policies and carbon footprint.

As of October 2020, NNSTU is implementing the following initiatives in the direction of "Energy and Climate Change":

The university successfully implements programs on energy efficiency and resource saving, so metering devices are installed in all buildings of the campus, information from which is sent monthly to the central computer (automatic reading of meter readings), which makes it possible to analyze the water and energy consumption of each individual building included in the university campus.

"Program for improving the energy efficiency of NSMTU for 2022 - 2026."

The university signed an agreement with the Hydrometeorological Service of the Navoi region on monitoring the environment of NSMTU. The calculations performed confirmed compliance with the current hygienic standards for atmospheric air quality for all harmful substances at the boundaries of regulated territories emitted by pollutant sources. According to the impact on the atmospheric air of the site, NSMTU, in accordance with the calculations performed, belongs to enterprises of category III - an object that has a slight negative impact on the environment.

The "Industrial environmental control program" for NSMTU is being implemented.

The university buildings are equipped with the "Automatic control system for accounting for energy resources" (NSGTU).

Work continues to modernize the lighting in the university buildings; in 2021, 800 lamps were replaced with LED ones.

Purchased and installed air conditioners with the highest energy efficiency class

The "Program of major repairs of dormitories" is being implemented, the student dormitory has been renovated in accordance with modern requirements.

Street lighting on campus is equipped with LED lamps.

The temporal dynamics of the main indicators of NSMTU in the direction of "Energy and Climate Change" are presented in Table 2.

Table 2. Temporal dynamics of the main indicators in the "Energy and climate change" direction

Index	2019 year	2020 year	2021 year	2022 year
The use of energy efficient appliances	less than 20%	1-25%	25-50%	50-75%
Total area of smart buildings in the main campus (m ²)	-	170388,3	170388,3	170388,3
Total carbon footprint (CO ₂ emissions, last 12 months, metric tons)	-	9076,1	8863,07	8025,5
Total carbon emissions divided by total campus population (metric ton per person)		>0.42– 1.11 metric tons (0,48)	>0.42– 1.10 metric tons (0,46)	>0.42– 1.10 metric tons (0,436)
Electricity consumption per year (kWh)	12.178.994 kw/h	10 784 508kw/h	10 551 112 kw/h	9 554 150 kWh (for 9 months 2020 - 6298347 kWh)
Total Electricity Consumption Divided by Total Campus Population (kWh/person)		569,6	548,3	489,76

3. Waste

NSMTU waste is transferred for disposal to the relevant organizations that have licenses for the relevant types of work:

Hazard class I waste (mercury, fluorescent lamps) –

Waste IV-V hazard class -

The university is working on the introduction of separate waste collection. Sorting will save NSMTU from at least 50% of the waste transferred to the landfill.

The main source of plastic is the waste of the Student Catering Plant (packaging, disposable tableware). What are the prerequisites for the need to switch to RSO.

NSMTU is already on the way to reduce the use of paper, for example, the use of two-sided printing, the introduction of electronic document management

Work is underway to prepare the infrastructure of NSMTU for the introduction of the RSO. For example, containers for separate collection of waste have been purchased, and modernization of container sites is being prepared.

The temporal dynamics of the main indicators of NSMTU in the direction of "Waste" are presented in table 3.

index	2020 year	2021 year	2022 year
University Waste Recycling Program	None	Partial (1 - 25% of waste)	[2] Partial (1 - 25% of waste)
Paper and Plastic Reduction Program on Campus	Duplex printing, print-on-demand (SDDS)	Duplex printing, print when needed, EDDD Case, Campus	Double-sided printing, printing as needed. Electronic document management: EDDD Delo, Campus 1C "Occupational Health and Safety", 1C "Omega"
Organic waste management	Open dumping Removal of garbage, vegetable matter	1-25% Removal of garbage, vegetable matter	1-25% Removal of garbage, vegetable matter
Handling of inorganic waste	1-25%	1-25%	1-25%
Handling Toxic Waste	1%-25% handed over for recycling to specialized organizations	1%-25% handed over for recycling to specialized organizations	1%-25% handed over for recycling to specialized organizations

1. Water

The NSMTU campus is undergoing a phased modernization of water supply and sanitation systems, according to the overhaul program, using modern water saving facilities. Work on the university's water conservation program is at an early stage.

Table 4. Time dynamics of the main indicators in the "Water" direction

index	2020 year	2021 year	2022 year
Implementation of a water saving program	[1] None	[2] Program in preparation (e.g. feasibility study and promotion)	[3] 1 - 25% implemented at early stage (e.g. measurement of potential surface runoff volume)
Using water saving appliances	>75% water-saving appliances installed	>75% water-saving appliances installed	>75% water-saving appliances installed
Recycled water consumption	None	1-25%	1-25%

Specialists of the Navoi Mining and Metallurgical Combine and scientists of the Navoi State Mining and Technological University have created an innovative plant for converting underground seepage water into clean drinking water using solar energy. Today, a new type of technology has been installed on the territory of the university, and the device serves everyone, especially residents of the city. The new model of equipment is capable of extracting 70 dm³ per hour from a 60-meter underground well. produces cubic meters of pure water.

1. Transport

The territory of NSMTU is equipped with pedestrian paths that are accessible and equipped in terms of safety, convenience and, in part, for the convenience of people with disabilities. There are bike racks on campus.

On the territory of the main building, parking of vehicles is limited, entry is possible only with passes for vehicles of the university and for emergency services.

All NSMTU vehicles undergo MOT and have certificates of timely inspection.

Table 5. Temporal dynamics of the main indicators in the "Transport" direction

index	2020 year	2021 year	2022year
Number of cars entering the university daily	6	6	6
Ratio of zero-emission vehicles to total campus population	> 0.02	> 0,002-0,004	> 0,002-0,004
Ratio of total vehicles (cars and motorcycles) to total campus population	<0,045	<0,045	<0,045
Pedestrian policy on campus	Pedestrian paths are accessible and equipped in terms of safety and convenience	Pedestrian paths are accessible and equipped in terms of safety and convenience	Pedestrian paths are accessible and equipped in terms of safety and convenience

1. Education and research

This indicator includes: the number of courses / subjects, the content of which is related to sustainable development, implemented at the university; the total number of courses/subjects offered annually.

NSTU implements 85 educational programs of disciplines, as well as educational programs in the areas of sustainable development:

Renewable Energy

Food Biotechnology

Conservation of people, management of professional, environmental and emergency risks

Fire safety

Utilization and processing of production and consumption waste

Environmental Safety

Environmental Engineering and Clean Energy

Environmental protection and resource saving

Life safety in the technosphere

Safety of technological processes and production

Processing technology of food plant raw materials

Sustainable innovation economy

Ecology and nature management

Table 5. Temporal dynamics of the main indicators in the direction "Education and research"

index	2019 year	2020 year	2021 year	2022 year
Number of courses/subjects offered related to sustainability	85	85	85	150
Ratio of courses in the field of sustainable development in the total number of courses/subjects		>8- 17%	>10- 20%	> 20%
Number of published publications in the field of sustainable development	110	523	473	454
Number of student organizations associated with sustainability	3	3-4	3-4	5-10

Gender equality.

Equal rights and freedoms for men and women are guaranteed by the Constitution of the Republic of Uzbekistan. In 2019, the labor force participation rate for women was 55.4% (men - 70.6%), the employment rate - 52.9% (men - 67.3%), the unemployment rate - 4.4% (men - 4 ,eight %). In order to ensure equality between men and women, Uzbekistan is implementing the National Action Strategy for Women for 2019-2026, aimed, among other things, at reducing the gender pay gap (in 2019, the ratio of women's wages to men's wages was 72. 1%), reducing the number of cases of violence against women, increasing the number of women in leadership positions in small and medium-sized businesses.

There is an Advisory Council for Women’s Affairs at NNSTU based on Decree No. PF-5938 of February 18 “On the measures of the President of the Republic of Uzbekistan to improve the socio-spiritual environment in society, further support the neighborhood institution, bring the system of work with families and women to a new level” 2020 and Decree No. PK-4602 dated February 18, 2020a “On organizing the activities of the Ministry of Neighborhood and Family Support of the Republic of Uzbekistan”, Decree of the President of the Republic of Uzbekistan No. PQ-5020 dated March 5, 2021a “On measures to further improve the system of support for women and girls, ensure their active participation in the life of society”, Consultation on women and girls on June 17, 2020 of the Ministry of Higher and Secondary

Specialized Education - on the basis of order no. 326 on the establishment of councils, as well as order of the institute no.

Today, 1255 (24%) women and students work and study at the Navoi State Mining and Technological University. Among them: 1001 students, 254 university employees.

The number of employees is 254 people: 10 heads of departments, 120 employees, 67 employees of the economic department. Doctor of Sciences, prof. - 2, doctors of sciences, associate professors - 17, senior teachers - 22, assistants - 16

On February 26, 2021, an exhibition seminar was organized on the topic "The role of Uzbek women in the field of science and education" with the aim of developing the talent of our students, attracting them to the circles of the institute and preparing them for family life. At the seminar, an exhibition was organized based on the materials of the dance clubs "Young Artist", the club "Kizlarzhon", "Followers of Zulfiyakhanum" and the newly created "Sharq Gavhari". At the seminar, our women professors and teachers, exemplary in the family and at work, delivered a lecture for our students on the topic "The role of Uzbek women in the field of science and education." Charitable work is carried out at the university, for example, 5 students in need of social protection (Umirzakova Z., Komilova A., Khudoykulova G., Sobirova N., Juraeva S.) were allocated 200,000 soums of assistance. Pupil Umrzakova Zarina, a disabled person of the 2nd group, was paid a tax on a new sewing machine 411,000 soums, 1 million soums from the Solidarity Foundation, in January 200,000 soums. Together with the Navoi regional and city department for supporting microdistricts and families, events and promotional work are organized together in constant cooperation. Including: Navoi region 5 of our employees who applied for preferential housing and loans and subsidized housing by the city department of social assistance and family support and 14% were offered loans.

In this year 2021, the students and staff of the Institute have achieved a number of achievements. Including: Professor of the Institute Bozorova S.Zh. was awarded the badge "Honorary Woman" of Uzbekistan.

Zoirova L., Associate Professor of the Department of General Physics, became the laureate of the 1st prize of the competition "Young Scientist-2020", held in the Republic of Kazakhstan, was awarded a diploma of a scientific degree.

Tursunova I.N. participated in the XLVIII international exhibition-presentation of scientific, technical, educational, methodological and literary and artistic publications of Russia and the invention "Composition for fire-retardant treatment of cellulose materials" was awarded the anniversary award (25 years of the Russian

Academy of Natural Sciences) LEONARDO da VINCI (Leonardo da Vinci)
WITH WINNER'S CERTIFICATE

Student Kadyrova Gulrukhsar was awarded the badge "Mehr-Sakhavat" for volunteer work.

Alexandra Vinokurova, a student at the EMF Institute, was accepted as a member of the Youth Parliament.

Conclusion

Navoi State Mining and Technological University has developed and is implementing a program that meets the goals of sustainable development.

The long-term program of the university for sustainable development includes the following main areas:

- educational and scientific activities in the field of ensuring technosphere safety and sustainable development of the region;
- educational activities in the field of assessing environmental and technological risks at industrial facilities, institutions and organizations and ensuring sustainable development by minimizing risks;
- activities aimed at reducing the environmental (carbon) footprint of the university;
- creation of a system of responsible attitude to waste management and the creation of recycling, primarily food waste;
- creation of a system of resource saving, including energy, water consumption, water disposal;
- reduced transport footprint and environmentally responsible purchasing;
- creation of an environmentally sound infrastructure of the university campus.

An example of the implementation of educational and scientific activities is the creation and successful functioning of scientific consortiums of departments and academic institutions.

All students studying at the university master the discipline "life safety" and in their design work must assess the environmental consequences of the implementation of their design solutions, and students and graduate students studying in the areas of technosphere safety, construction, electric and heat power, food industry develop specific environmental protection solutions for specific objects of the economy of the Navoi region. In some areas, such disciplines as

regional ecology, methods and technologies for assessing environmental risks, environmental management and resource conservation, etc. have been introduced.

Organization of olympiads, competitions, scientific conferences and forums for youth, when talented youth are given grants for the implementation of environmental and social projects aimed at ensuring the sustainable development of the region.

The university successfully implements programs on energy efficiency and resource saving, so metering devices are installed in all buildings of the campus, information from which is sent monthly to the central computer (automatic reading of meter readings), which makes it possible to analyze the water and energy consumption of each individual building included in the university campus.

The campus annually hosts the Energy Saving Leaders competition, the main goal of which is a thrifty attitude to electricity and water. Students are taught to use resources frugally at meetings of student assets, open lectures and during excursions at the regional demonstration center "Energy Saving and Energy Efficiency", located in the Technopark of NSMTU. On the territory of the university, for educational purposes, a pilot project was implemented to install panels of a solar power plant with a total capacity of 3 kW.

Navoi State Mining and Technological University is committed to minimizing its impact on the environment, is aware of the responsibility for the formation of environmental thinking among teachers and students, and implements the UN sustainable development goals in the educational process.