



**Non-commercial joint-stock company «Shakarim  
University of Semey»**

**REPORT**

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**on implementation of sustainable development  
policy of Shakarim University of Semey city  
in 2023**

**Semey, 2024**

## **Introduction**

Universities are designed to produce and transfer knowledge. But they also have another mission - to form sustainable links with the environment.

For a long period of time, Shakarim University of Semey has been and remains a point of attraction for the youth of Abay region and neighbouring regions. Recognising its role in creating a literate and just society, Shakarim University pays special attention to sustainable development. Contributing to the development of the region through research and development, the university makes every effort to create a creative multinational educational environment for young people. Maintaining a balance between the economic, social and environmental interests of society is one of the university's main objectives.

The University sees its mission as the formation of a qualified specialist and a "perfect person" imbued with national values.

In 2023, Shakarim University participated for the first time in the UI Green Metric World University Ranking 2023, which measures the commitment of universities to improving environmental infrastructure and promoting sustainable development and environmental protection, and was ranked 812th among the world's greenest educational institutions; among Kazakhstani universities, Shakarim University was ranked 9th.

The Sustainability Policy, Anti-Discrimination and Harassment Policy, Sustainable Investment Policy, and the University's Zero Carbon Policy were approved in December 2023.

The main sustainability objectives of Shakarim University for 2020-2030 are:

- improving its environmental and sustainability performance through six topical areas: development and infrastructure, energy and climate change, waste management, water, transport and education;
- further integration of sustainable development goals into the university's core missions: education and research.

## Analysis of Shakarim University's infrastructure indicators

### 1. Environment and infrastructure

Environment and infrastructure of the university (weight coefficient - 15%). It includes 11 indicators. Among them are both specific "environmental" indicators characterising the general attitude of the campus to the natural environment (for example, the percentage of the campus area covered with vegetation in the form of forest, and indicators widely used in major academic rankings (number of students, number of academic and administrative staff).

One aspect of realising this indicator is to increase the campus area covered with vegetation, i.e., creating new public gardens including lawns, gardens, green roofs, indoor planting, vertical gardens, etc.

The open space of the campus, unoccupied by buildings and forest plantations, includes the area around the main building, other academic buildings, stadiums, practice base agrobiological station. In 2023, the open space of the campus is 81%. On this area it is planned to build a new dormitory for students that meets the requirements of sustainable development of territories. The project also takes into account lean environmental management, eco-processes, as well as modern mechanisms and techniques of modularity, functionality, adaptability, variability and much more.

The total area of the campus is 103105 m<sup>2</sup>. There is an open space of 2 hectares of land.

The University's key indicators in the Environment and Infrastructure pillar are summarised in Table 1.

Table 1: Key indicators in the "Environment and Infrastructure" dimension

| Indicator  | 2023  |
|--|---|
| Ratio of open space area to total area, %  | > 80-90%  |
| Parking area, m <sup>2</sup>   | 2000 sqm.   |
| Campus area covered by forest vegetation, %  | > 9-22%   |
| Campus area covered by planted vegetation, %   | > 40%   |
| Total water-absorbent area of the campus, excluding forest and planted vegetation, % | > 10-20%  |
| Percentage of building operation and maintenance work in one year                    | 100%  |
| Campus facilities for persons with disabilities, special needs and/or maternity care | Facilities are available in all buildings and are fully operational |

### 2. Energy and climate change

Efficient use of energy and impact on climate change (21%). Includes 10 indicators, such as use of energy efficient appliances, renewable energy sources, total energy consumption per year (kWh), etc.

As of October 2023, the University has the following initiatives underway in the "Energy and Climate Change" strand:

The University successfully implements energy efficiency and resource saving programmes, as all buildings are equipped with metering devices, the information from which is provided to the Department of Infrastructure and Accounting Department on a monthly basis, which makes it possible to analyse the water/energy consumption of each individual building on the University campus.

Work continues on modernising the lighting in the university buildings.

Shakarim University is carrying out planned and preventive renovations to improve the energy efficiency and safety of its buildings. All academic buildings of the university are subject to renovation.

Street lighting on campus is equipped with LED fixtures.

Shakarim University's existing Greenhouse Gas Reduction Programme also targets two major sources of emissions - reducing greenhouse gas emissions from electricity consumption and transport.

Measures aimed at reducing greenhouse gas emissions are as follows:

1. Reducing the level of electricity used.
2. Installing a barrier to enter the campus to reduce the number of vehicles on campus.
3. Participation in events in remote and online formats.

Data on the University's key indicators in the Energy and Climate Change strand are summarised in Table 2.

Table 2. Key indicators in the direction of "Energy and Climate Change"

| Indicator  | 2023 year                  |
|--|----------------------------|
| Use of energy efficient appliances   | > 50-75%                   |
| Total floor area of smart buildings in the main campus (m) <sup>2</sup>                    | 39857                      |
| Implementation of the Smart Buildings programme  | >25-50%                    |
| Total carbon footprint (CO emissions <sub>2</sub> , for the last 12 months, metric tonnes) | 1,057 metrics tonnes       |
| Total carbon emissions divided by total campus population (metric tonnes per person)       | < 0.10 -0.42 metric tonnes |
| Electricity consumption per year (kWh)   | 1246585 kWh                |
| Total electricity consumption divided by total campus population (kWh per person)          | < 279                      |

### 3. Waste

The Recycling group (18%) includes 6 indicators assessing the university's capacity to recycle waste (university waste recycling programme, toxic waste management, policy to reduce the use of paper and plastic on campus, etc.).

The University's waste is transferred for disposal to appropriate organisations licensed for the relevant types of work:

- 'Kazakhstan Waste Management Operator' LLP (disposal of chemical waste and luminescent lamps).

- Semey Tazalyk' LLP (utilisation of household waste).

- IE 'Kumarova Karlygash' (utilisation of construction waste)

Shakarim University is already on the way to reduce paper use, e.g., using double-sided printing, introducing electronic document management [ais.semgu.kz](http://ais.semgu.kz), [sdo.semgu.kz](http://sdo.semgu.kz) etc.

The students and staff of the university regularly participate in clean-up days to clean the campus and the city of rubbish, which is then disposed of in an appropriate manner.

The University has a system of separate waste collection. Thus, containers for separate waste collection have been installed in all buildings and container sites have been modernised.

The University's key indicators for the Waste strand are summarised in Table 3.

Table 3: Key indicators in the "Waste" direction

| Indicator  | 2023 year  |
|--|--|
| University waste recycling programme                         | Partially (> 25-50% of waste)  |
| A programme to reduce the use of paper and plastic on campus | 2 programmes are being implemented to reduce paper and plastic waste |
| Organic waste management                                     | 1-25%  |
| Inorganic waste management                                   | 1-25%  |
| Toxic waste management                                       | 25-50%   |

### 4. Water

Rational use of water resources (10%). Here are 5 indicators on water conservation, use of recycled water, etc.

The University campus is undergoing a phased modernisation of its water supply and wastewater disposal systems, in line with the capital maintenance programme, using modern water-saving measures.

In accordance with the sustainable development programme, the University implements water saving and water recycling programmes:

1. Performs installation of water saving appliances.

The total water consumption for 2023 was 48886 m<sup>3</sup>. According to the data on the Internet, water saving by applying various water saving devices ranges from 25-70%.

2. Collects rainwater for watering plants and washing cars.

Table 4: Key indicators in the "Water" direction

| Indicator  | 2023 year                                  |
|--|--|
| Implementation of a water conservation programme | The programme is being prepared            |
| Use of water-saving appliances                   | 1-25% of water-saving appliances installed |
| Recycled water consumption                       | 1-25%                                      |

## 5. Transport

Transport policy (18%). Includes 8 indicators (number of vehicles owned by the university, number of cars entering the university campus daily, number of bicycles on the university campus daily, transport policy aimed at limiting or reducing parking space on the campus, etc.).

A systematic effort is underway to limit parking on campus.

Table 5: Key indicators in the "Transport" direction

| Indicator  | 2023 year  |
|--|--|
| Number of cars entering the university on a daily basis                            | 100  |
| Ratio of zero-emission vehicles to total campus population                         | 0,002  |
| Ratio of total number of vehicles (cars and motorbikes) to total campus population | [5]< 0.045   |
| Campus Pedestrian Policy   | [5] Walkways designed for safety and convenience are available |

## 6. Education and research

Education (18%). This includes 11 indicators assessing the activities of universities in the creation and dissemination of environmental knowledge (training courses on environmental issues, research funds aimed at studying environmental issues, number of published scientific papers on environmental issues, etc.). Education for sustainable development is a priority area of sustainable development. All over the world there is an endless search for models of education and educational processes that would contribute to the introduction of new, important, relevant ideas, programmes that would meet the needs of the future generation. The University works towards the creation of programmes with needs and relevance. Thus the university aims to implement programmes in the field of sustainable development in two formats:

1. Development and implementation of specialised English-language educational programmes aimed at the global market.
2. Inclusion of universal modules on sustainable development in core educational programmes.

In 2023, IRNITU provided training in educational programmes related to sustainable development <https://shakarim.edu.kz/ru/pages/index?pathway=universitet&slug=obrazovaniye-dlya-ustoychivogo-razvitiya> such as "Ecology", "Food Safety", etc.

In 2023, the number of courses offered related to sustainability is 107.

Table 5. Time dynamics of the main indicators in the direction of "Education and Research"

| Indicator  | 2023   |
|--|--------|
| Number of sustainability-related courses/subjects offered                    | 107    |
| Ratio of sustainable development courses to total number of courses/subjects | > 1-5% |
| Number of publications issued in the field of sustainable development        | > 300  |
| Number of student organisations related to sustainability                    | 1      |
| Number of startups related to sustainable development                        | 1-5    |

## **Conclusion**

Shakarim University in 2023 continued to implement its programme that meets the goals of sustainable development, as sustainable development of an educational institution can be considered both as a goal and as a tool. At the first stage, the university seeks to transition from socio-economic development to sustainable development, and after achieving internal stability, such a sustainable university can continue to disseminate the principles of sustainable development and begins to use its potential for the development of the territory.

In accordance with the needs of the modern labour market, disciplines aimed at studying the best practices in environmental safety and resource-saving technologies are planned and implemented in the educational programmes of all areas of training.

The interest in solving the problems of sustainable development is confirmed by the number of publications indexed in various databases, so according to Google Scholar for the last 3 years the number of publications has increased to 887.

In 2023, students and staff of the university acted as organisers and participants in various events in face-to-face and online formats. Over the past three years, Shakarim University has organised and participated in 55 events related to sustainability, sustainable development, ecology.

The university's youth policy actively promotes the education of a responsible society through extracurricular activities, cultural and creative events, as well as the development of student initiatives in the field of sustainable development goals. The tool "student environmental movement" is a successful solution and unambiguously contributes to the transition of the university to sustainable development and functioning.

Students and staff of Shakarim University are actively involved in various public actions on sustainable development issues, here are some of them: introduction of social credit, planting trees in Forest of Semey, cleaning of the territory, debates on gender equality, etc.

Shakarim University is committed to minimising its impact on the environment, is aware of its responsibility to create an environmentally friendly society and implements various projects aimed at achieving the UN Sustainable Development Goals.