

# NJSC TORAIGHYROV UNIVERSITY



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## UNIVERSITY POLICY IN ACHIEVING A ZERO-CARBON FOOTPRINT

University policy determines the nature for the actions necessary to achieve a zero-carbon footprint, cooperation with partners in the field of research and development by authorities and industrial enterprises of the region.

The policy provides for a phased transition from the research and development in the field of climate change and decarbonization to technology solutions and their implementation.

Based on current technology and cooperation with the world's leading research centers the university becomes an actor capable of providing necessary changes towards the sustainable development.

### **I stage 2023-2030 – Research and development**

Research of the natural and technical systems, environment impact assessment will help to form a complete system of knowledge.

Decarbonization technologies development will be based on these knowledge bases and it will be possible to constantly assess the adequacy of the research models.

International research cooperation will allow the world research community to participate in problems solving and to provide the achievement of sustainable development goals at all levels (university, city, region, world).

Cooperation with partner companies and major industrial enterprises will give an opportunity to work out approaches to sustainable development and it will be available to form new technological and educational standards.

At the first stage some key areas for the future work were determined:

**Campus** – transformation of buildings and structures, the university's roads and its facilities as well as the research sites and field bases;

**Infrastructure** - electrical networks and communication, systems of electricity supply and subsistence;

**Research and development** – acquiring new technologies in order to reduce emissions and for the sustainable development;

**Education** – educational climate change programs and programs for the sustainable development;

At the first stage the university plans to introduce measures in the area of scope 1 and reduce direct emissions of GHGs until 2030, which are generated from the sources owned or controlled by the university.

### **II stage 2030-2040 – Application and analysis**

At the second stage the university should become an expert platform for the issues of climate change, technologies aimed at reducing impact of industrial enterprises. The

university plans to actively participate in forming a green economy, promoting its development.

Activities and joint studies with other universities – the university plans to switch from joint studies at the first stage to more sustainable and large-scale projects with partner universities.

The best world practices – the university considerably raises competences by enhancing its partnerships.

Application of technologies in campus and research centers – the university becomes the industrial laboratory and analytical center by introducing new technologies into practice at campus and research platforms.

Introduction of best practices at partners enterprises – success in executing project in the framework of the university will help to attract partners companies and to extend trust boundaries for use in industries.

Technologies monitoring program – new research projects and technological innovations will be compared with observations and development of the new monitoring systems. It will give an opportunity to perform calculations and modeling of processes, evaluate the maturity of the technology and possibility of scaling to other research facilities.

At the second stage the university plans to introduce measures in the area of scope 2 and reduce indirect greenhouse-gas emissions until 2040 which are associated with the production of energy, heat or steam and purchased by the university.

### **III stage 2040-2050 Change and transmission**

Scientific and technological development of the university must ensure a high level of new technologies and transformation of internal and external structures for main challenges.

Successful tasks solution will allow the university to become a platform which demonstrates modern approaches to solve problems related to big challenges and sustainable development.

The university is an example of sustainable development – confirmation of the university's image by specific examples applied in campus and in the city, transmission of experience through technologies and educational programs, interaction with society through expertise assessment of technologies used in various socio-economic spheres.

At that stage the university owns technologies and helps companies. Technological solutions of the university are embodied in companies' and industrial partners' processes, these solutions are demanded in the market. Feedback from companies allows to track the applicability of the elaborations and to conduct more research for their improvement.

Teachers and students are the bearers of sustainable development culture – experience in the field of technologies promotes a unique university culture and allows to influence society through a new generation of engineers, the creators of green economy.

At the third stage the university plans to introduce measures in the area of scope 3 and reduce all other indirect emissions until 2049 which are associated with travelling, waste disposal, water use and so forth.