

INNOVATIVE PROGRAM(S) IN ENERGY AND CLIMATE CHANGE

University : Shakarim University
Country : Kazakhstan
Web Address : <https://shakarim.edu.kz>

No.	Program / Innovation Title/Start-up	Description	Type of Innovation / Recognition	Related SDGs
1	Solar-Powered Smart Bench Initiative	Design and installation of solar-powered benches equipped with USB charging ports and Wi-Fi access in green campus areas. Developed by students and faculty members as part of sustainability innovation projects.	Prototype created at Shakarim Lab 1; registered in the university's internal innovation database.	SDG 7, 11, 13
2	3D Printing from Recycled Plastic Waste	Closed-loop process converting collected plastic waste into 3D printing filament used for educational and research prototypes, supporting circular economy practices.	In-house sustainability innovation project; documented in university research reports.	SDG 12, 13
3	Carbon Footprint Monitoring Tool	Internal digital dashboard for annual calculation and reporting of the university's carbon footprint (Scopes 1–3).	Developed jointly by the Department of Ecology and the IT Center; used for sustainability planning.	SDG 13, 17
4	Electronic Document Management and Paperless Administration	University-wide electronic document management system for students and staff that replaces paper-based processes, significantly reducing paper consumption, printing energy, and administrative transport.	In-house IT solution recognized as a sustainable management practice.	SDG 9, 12, 13
5	Electric Vehicle Charging Station on Campus	Installation of an electric vehicle (EV) charging station on campus to promote low-emission mobility and encourage the use of environmentally friendly transportation among staff and students.	University initiative supporting green mobility and reduction of Scope 1 and 3 emissions.	SDG 7, 11, 13

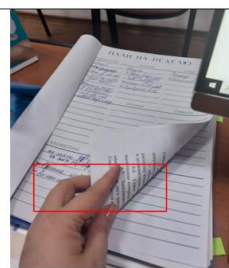


Solar panels

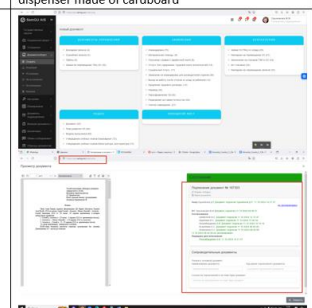


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2. a Wall-E robot model and an electronic liquid dispenser made of cardboard

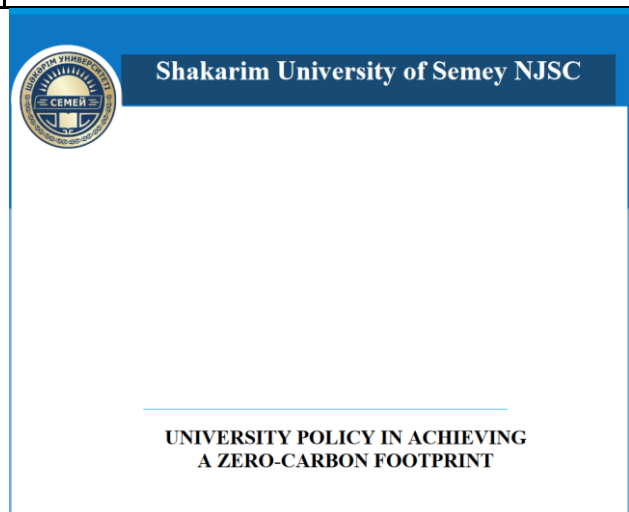
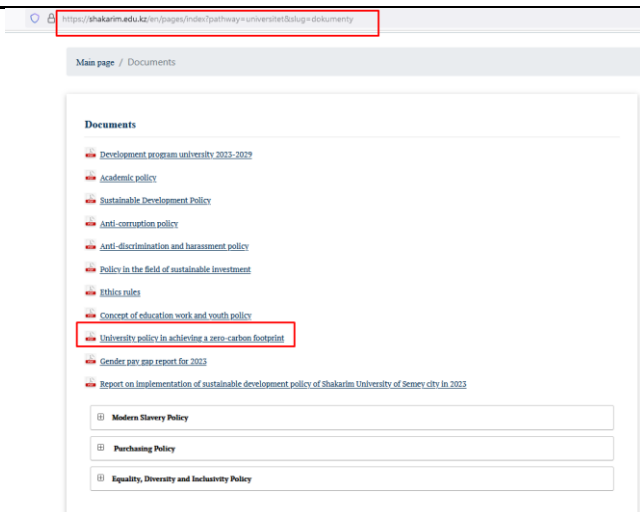


dispenser made of cardboard



3D printing

Double-sided paper printing and electronic document workflow to reduce paper use.



UNIVERSITY POLICY IN ACHIEVING A ZERO-CARBON FOOTPRINT



Goal 07: Ensure access to affordable, reliable, sustainable and modern energy for all	6B07103 Thermal Power Engineering	Educational programs (shakarim.kz)
	7M07101 Thermal Power Engineering	Educational programs (shakarim.kz)
Educational programs that provide energy professionals		
AP26195367 Development of an automated bioreactor line for continuous production of biogas and fertilizers Project Leader: Yerbol Ospanov, NJSC "Shakarim University", PhD, associate professor https://shakarim.edu.kz/en/science/projects/95	AP26197931 «Development and research of a wind-solar installation with automated control for uninterrupted electricity and water supply of agricultural facilities». Project Leader: Abilmazhinov Yermek (NJSC «Shakarim University», Department of Automation and information Technologies, Doctor of Technical Sciences, Professor). https://shakarim.edu.kz/en/science/projects/87	
AP19678220 "Nanofluid coolant on the basis of TiO2 for use in a hybrid solar collector" Project Leader: Kasymov Askar Bagdatovich, PhD, - Head of the ORCHID project ID - 0000-0002-1983-6508 https://shakarim.edu.kz/en/science/projects/32		
University research projects in the field of energy and climate change https://shakarim.edu.kz/en/science/projects		

Description:

Shakarim University has developed four innovative in-house programs addressing energy efficiency and climate change mitigation. These initiatives combine technological, organizational, and environmental innovation, leading to measurable reductions in resource use, waste generation, and greenhouse gas emissions across campus operations. In addition, the university actively conducts scientific research in the fields of renewable energy, energy efficiency, and climate change adaptation, further strengthening its contribution to sustainable development and innovation.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

<https://shakarim.edu.kz/en/science/projects>

<https://shakarim.edu.kz/en/development-goals>



<https://shakarim.edu.kz/en/page/innovaciialar-narygy>