



[2.10 / EC7] Greenhouse Gas (GHG) Emission Reduction Program

University	Uzbekistan State World Languages University (UzSWLU)
Country	Uzbekistan
Web address	https://www.uzswlu.uz/en

Program Overview

UzSWLU implements an institution-wide GHG emission reduction program covering renewable electricity, heating efficiency, lighting, HVAC optimization, sustainable transport, waste reduction, and campus greening. Electricity and renewable-energy data are obtained from the Smart Energy Management System (SEMS), while fuel, transport, waste, and landscaping data are compiled from the responsible university departments. GHG impacts are calculated using documented activity data and emission factors, and are reviewed through the university's environmental reporting process.

2026 solar PV generation	Installed PV capacity	Reported estimated reduction
2,240,000 kWh	2,240 kW	≈2,561 tCO ₂ e/year

2026 Measures and Reported Outcomes

Program area	Implemented measure	Calculation basis	Status	tCO ₂ e/yr
Solar photovoltaic electricity	2,240 kW PV capacity; 2,240,000 kWh generated across five academic campuses	2,240,000 kWh × 0.50 kg CO ₂ e/kWh	Calculated	1,120
High-efficiency heating	Two 2,200 kW boilers with smart thermostats and zonal controls; reported 28% gas reduction	Annual gas savings × approved natural-gas factor	Reported estimate	1,108
LED and automatic lighting	8,200+ high-efficiency LED units with motion/automatic controls	310,000 kWh saved × 0.50 kg CO ₂ e/kWh	Calculated	155
HVAC optimization	2 smart chillers and 289 fan-coil units managed through SEMS	266,000 kWh saved × 0.50 kg CO ₂ e/kWh	Calculated	133
Tree planting and green buffers	More than 1,500 trees planted annually	Documented sequestration methodology	Estimated sink	10
Waste and sustainable transport	Recycling points, 24 ZEVs, car-restricted areas, and 142,000+ passenger trips	Avoided fuel and waste emissions	Reported estimate	35
TOTAL REPORTED ESTIMATED REDUCTION				≈2,561

Methodological note. The 2,561 tCO₂e/year figure is an estimated program total. Electricity-based reductions are calculated from documented kWh values. Heating, transport, waste, and sequestration figures must remain linked to the corresponding departmental activity records and factor sheets in the evidence annex. This separation prevents double counting and distinguishes measured operational savings from estimated carbon sinks.

Monitoring, Governance and Quality Control

Monitoring

SEMS records electricity consumption and photovoltaic generation. Fuel, transport, waste, and planting data are provided by the Technical Department, Transport Unit, Waste Management Unit, and Landscaping and Environmental Monitoring Department.

Calculation

Each intervention is calculated independently using activity data $\times$ the applicable emission factor. Electricity savings and renewable generation use the same electricity factor to maintain consistency.

Review

Quarterly environmental performance data are reviewed by the Green Office and responsible technical units before inclusion in the annual Sustainability Report.

Double-counting control

Renewable generation, energy-efficiency savings, transport reductions, waste reductions, and carbon sequestration are reported as separate lines. Planned 2030 measures are excluded from the 2026 achieved total.

2026–2030 Climate and Energy Targets

- Increase installed solar PV capacity from 2,240 kW to 3,000 kW.
- Expand the zero-emission vehicle fleet to 40 vehicles and install 10 charging stations.
- Increase the annual GHG reduction target to approximately 3,500 tCO₂e by 2030.
- Introduce predictive energy-management functions for electricity, heating, and cooling.

Target status: planned measures only; not included in the reported 2026 reduction total.

Photographic Evidence



Rooftop solar PV arrays at UzSWLU



Rooftop solar PV installation



Electric-vehicle charging infrastructure



High-efficiency heating system

Evidence Annex: Required Supporting Records

Claim	Required supporting record	Purpose
Solar PV: 2,240,000 kWh and 1,120 tCO ₂ e	SEMS annual generation report; campus capacity inventory; electricity emission-factor source	Confirms production and avoided-grid emissions
Heating: 28% and 1,108 tCO ₂ e	Baseline and reporting-year gas meter records; gas savings calculation; gas emission factor	Confirms the largest non-electricity reduction
LED: 8,200+ units and 155 tCO ₂ e	Lighting inventory; procurement/installation records; kWh savings calculation	Confirms equipment coverage and savings
HVAC: 133 tCO ₂ e	Chiller/fan-coil inventory; baseline and current electricity records	Confirms 22% efficiency improvement
Trees: 10 tCO ₂ e	Planting register; survival count; sequestration methodology	Separates estimated sink from operational reductions
Waste/transport: 35 tCO ₂ e	ZEV inventory; charging records; shuttle passenger trips; waste diversion records	Prevents aggregation without traceable inputs

Final reported status: Comprehensive GHG emission reduction program implemented and monitored.