



University: Uzbekistan State World Languages University (UzSWLU)

Country: Uzbekistan

Web Address: <https://www.uzswlu.uz/en>

UzSWLU continues to expand renewable energy generation as part of its commitment to carbon neutrality, energy security, and sustainable campus development. Renewable energy production is managed through the university's integrated Fusion Energy Platform, providing real-time monitoring, automated distribution, and performance optimization across all campuses, contributing directly to SDG 7, SDG 9, and SDG 13.

1. Renewable Energy Infrastructure

UzSWLU has installed solar photovoltaic (PV) systems across its major educational facilities, including the Main Campus, Zakovat Educational Complex, Faculty of English Philology, Faculty of Russian Philology, and Angren Branch Campus. The university's solar energy network has a total installed capacity of 2,240 kW and generates approximately 2,240,000 kWh of renewable electricity annually as of 2026, supplying around 30% of the university's annual electricity demand. Renewable electricity is utilized for classroom and laboratory operations, computer and multimedia facilities, HVAC systems, administrative offices, and outdoor lighting and security infrastructure.

2. Fusion Energy Smart Control System

All renewable energy installations are connected to the Fusion Energy Platform, a centralized digital management system that enables real-time monitoring of solar generation, automated distribution according to building demand, hourly/daily/monthly performance tracking, long-term data storage for reporting, and automatic switching between renewable and grid electricity. The system prioritizes solar-generated electricity for campus operations before drawing power from the public grid; excess renewable energy is automatically allocated to low-consumption facilities such as dormitories, security stations, and corridor lighting.

3. Renewable Energy Production Summary (2026)

Renewable Source	Installed Capacity	Annual Output (kWh)	% of Total
Solar PV (rooftop & open field)	2,240 kW	2,240,000	30%



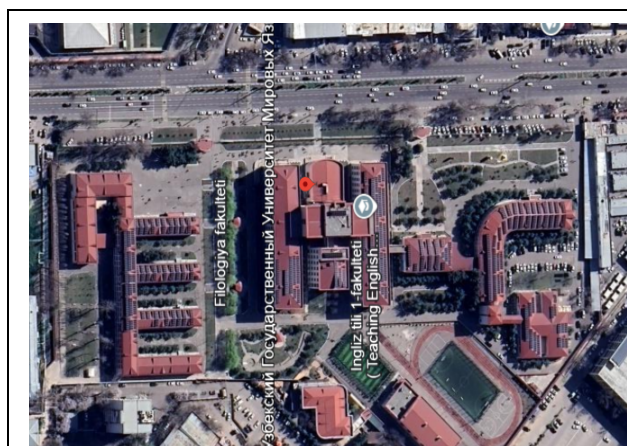
Renewable Source	Installed Capacity	Annual Output (kWh)	% of Total
Solar-powered lighting	168 LED units	—	4% (lighting only)
Hybrid heating boilers (efficient gas/alt. fuel)	4,400 kW	—	100% of heating

4. Environmental and Economic Impact (Key Performance Indicators)

- Annual CO₂ emissions avoided: approximately 68 tons.
- Institutional renewable energy target (2028): 40% of total demand.
- Annual financial savings: approximately 1.78 billion UZS.
- Reduction in fuel consumption: approximately 38% compared with the 2022 baseline.

5. Future Development

As part of the Green Campus Development Roadmap (2022–2030), UzSWLU plans to increase renewable coverage toward 40% of total demand, expand rooftop solar on newly developed facilities, introduce battery storage for energy resilience, and strengthen AI-based forecasting and smart energy management.



Each building of the university is equipped with solar panels



Energy Management Infrastructure (UzSWLU)