NAVOI STATE UNIVERSITY

# SUSTAINABLE ENERGY ANNUAL REPORT

SDG 7 | 2026 PERFORMANCE, COMMUNITY IMPACT & 2030 ROADMAP

Evidence-based institutional overview • November 2026

# Executive overview

## 2026 | institutional sustainability reporting

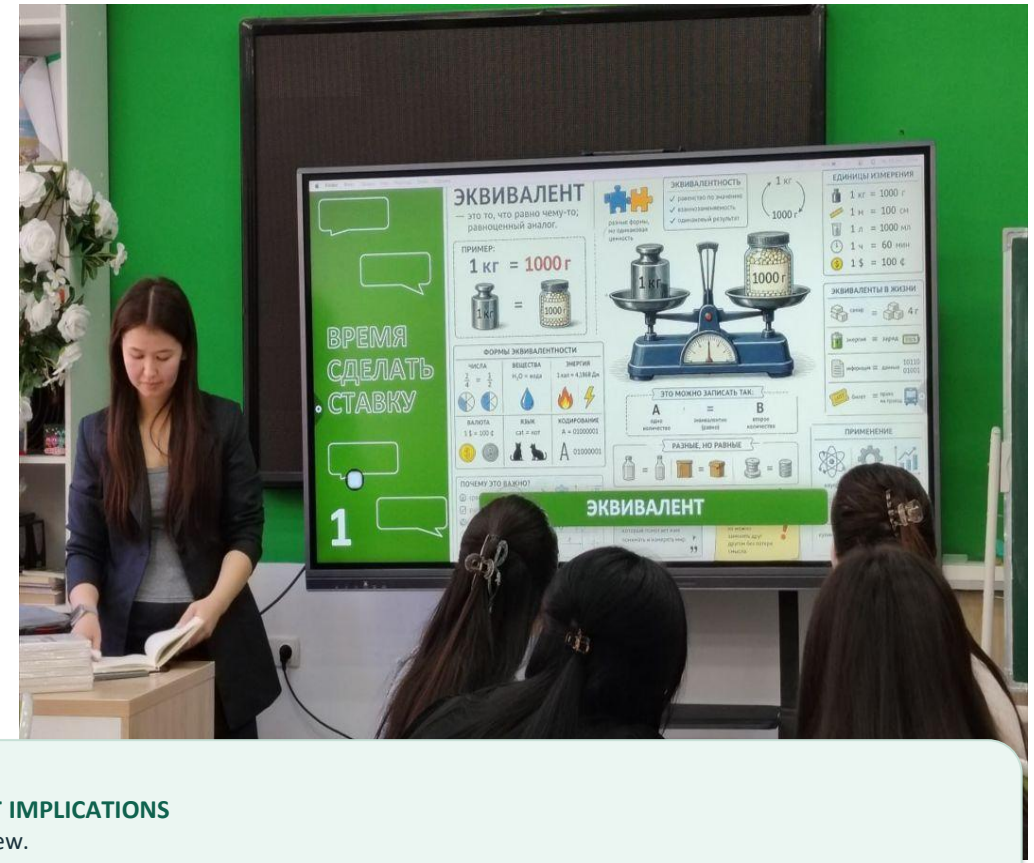
- Campus solar electricity, efficiency retrofits and community engagement form a connected institutional programme.
- The report separates implemented measures, source-reported figures and future commitments.
- Evidence is drawn from 11 supplied policy, monitoring and SDG indicator documents.

**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The January–September 2026 electricity statement reports 694,742.72 kWh of solar PV generation.
- The main improvement priority is to strengthen verified building-level consumption baselines, asset inventories and annual impact tracking.

# SDG 7 institutional strategy

- Energy efficiency first: reduce avoidable demand before adding generation.
- Integrate clean energy into teaching, infrastructure, research and community outreach.
- Annual review and evidence-based prioritisation underpin the 2026–2030 programme.



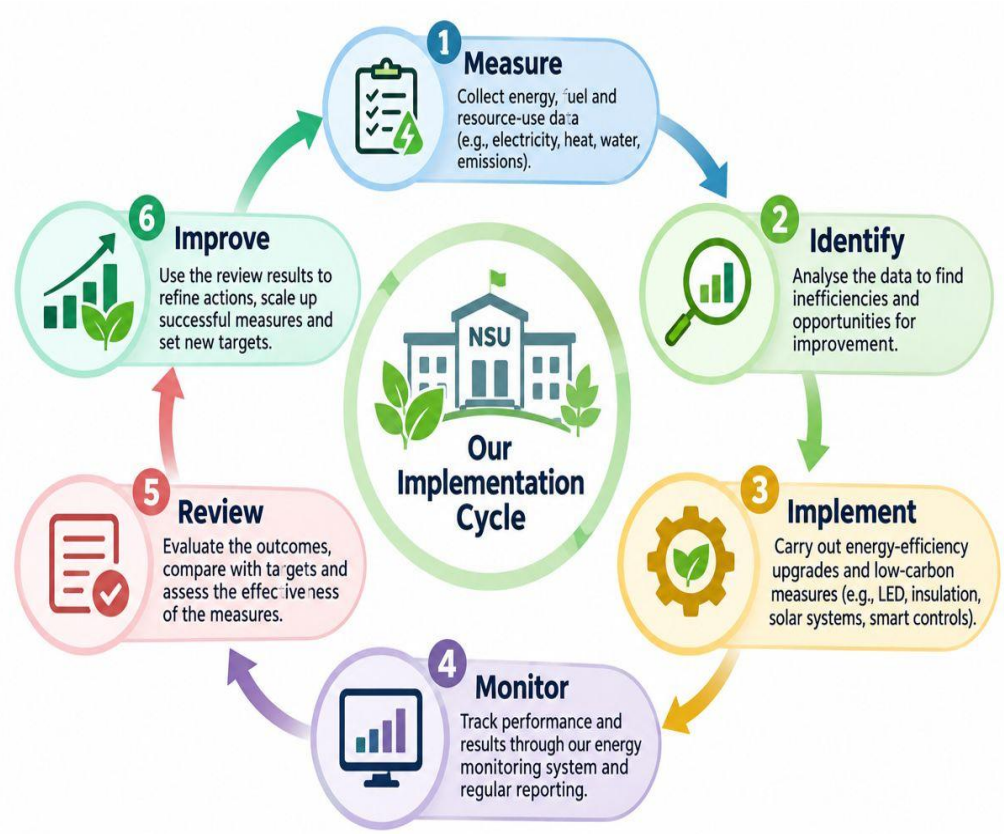

**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Infrastructure and construction units coordinate upgrades; sustainability oversight supports reporting and periodic review.
- Operational cycle: Measure → Identify → Implement → Monitor → Review → Improve.

# Solar power infrastructure

## 510 kW | reported installed solar PV capacity

- 350 kW installed in 2022 across academic and residential facilities.
- An additional 160 kW was reported in 2023.
- Capacity figures and separate parking-area installation require asset-register reconciliation.



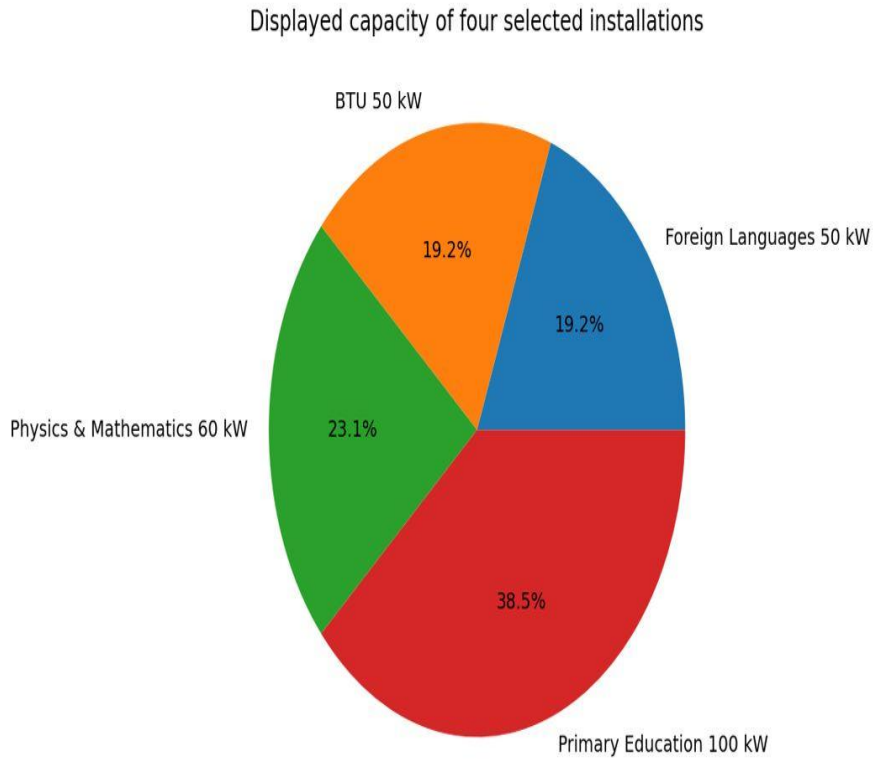

**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- A separately described 140 kW parking-area installation requires reconciliation against the 510 kW inventory to avoid double-counting.
- Campus solar generation contributes both to internal electricity needs and exports to the regional electricity network.

# 2026 photovoltaic generation

## 694.7 MWh | Jan–Sep 2026 PV output

- January–September 2026 generation: 694,742.72 kWh.
- 313,241 kWh allocated to university needs.
- 381,502 kWh reported sold to the regional electricity enterprise.

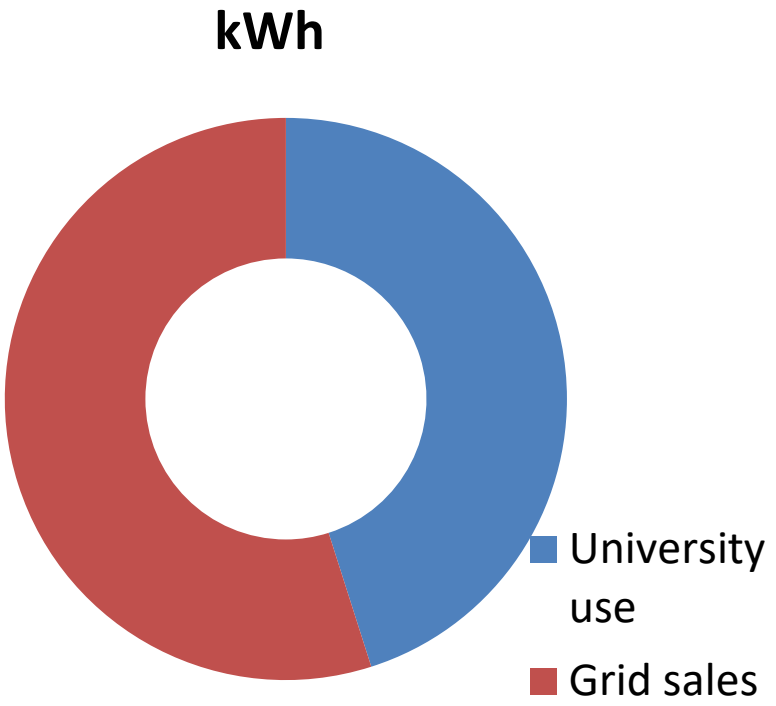



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- These figures represent the source statement's reporting period, not a full calendar-year total.
- The source has no numerical October–December monthly entries and no numerical solar-thermal entries; therefore no annual extrapolation is claimed.

# Generation allocation

- Approximately 45% of reported PV generation supported university needs.
- Approximately 55% was exported/sold to the regional enterprise.
- Values are source-reported and may contain rounding differences.

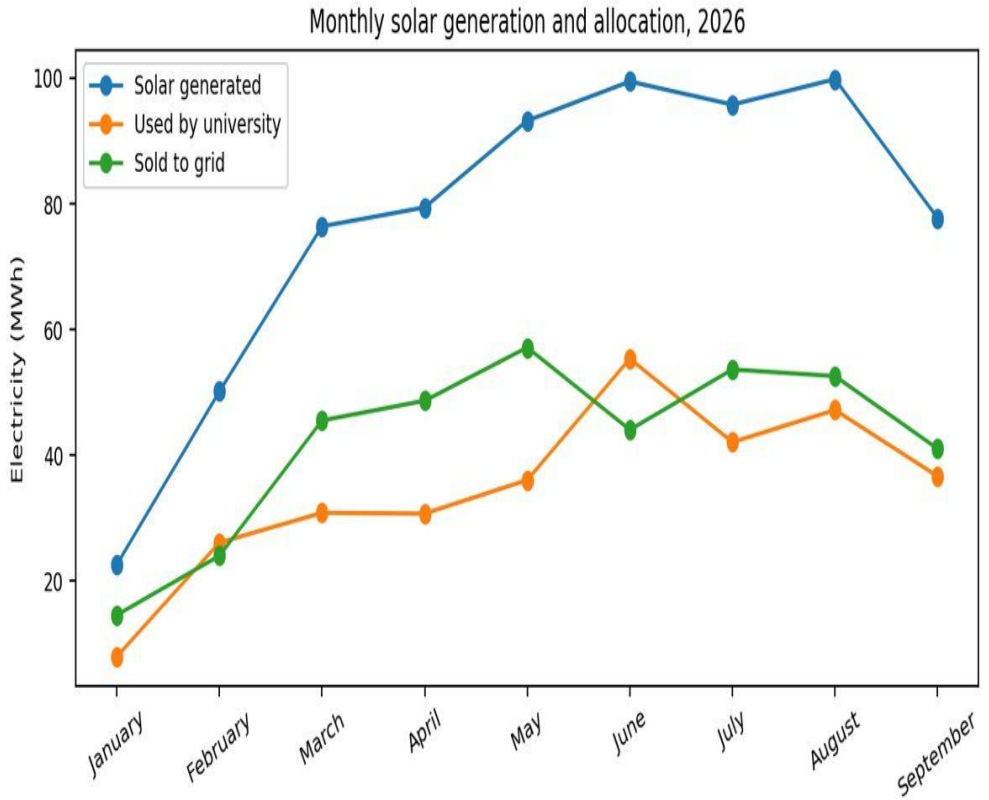



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The monitoring programme should record each category separately and verify the meter boundaries.
- Future performance reporting should compare equivalent months and buildings before making energy-saving percentage claims.

# Digital solar monitoring

- Plant-level and portfolio-level monitoring supports recurring performance reviews.
- A nine-plant overview displayed 2.02 GWh cumulative output and 430 kW inverter-rated power.
- Monitoring scope is not necessarily equivalent to the institutional installed-capacity inventory.

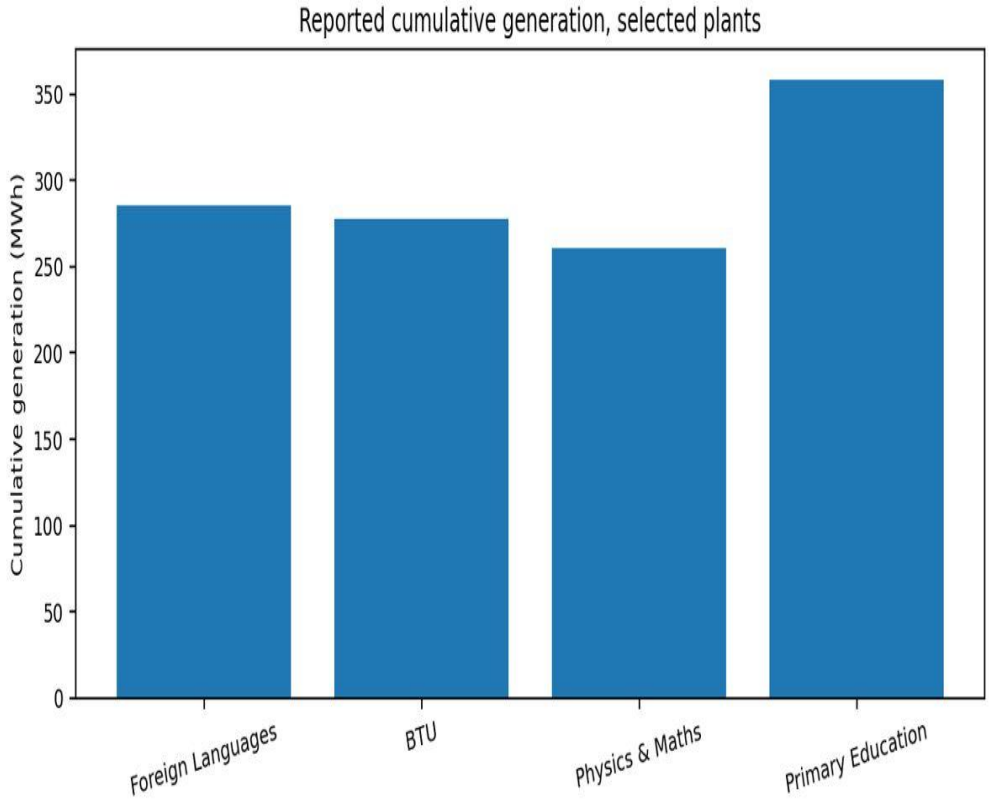



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- These dashboard figures describe that specific portfolio view and should not be equated automatically with the separate 510 kW institutional inventory.
- Regular exports, anomaly reviews and maintenance logs can improve the quality of management decisions.

# Selected solar installations

- Primary Education Faculty: 358.00 MWh cumulative by October 2026.
- Foreign Languages Faculty: 285.28 MWh cumulative.
- Physics and Mathematics Faculty: 260.55 MWh cumulative.




**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The Foreign Languages Faculty plant increased from 198.64 MWh in July 2025 to 285.28 MWh in October 2026 (+86.64 MWh).
- Cumulative production is not a measure of annual building consumption or energy savings.

# Energy-efficient campus buildings

- Renovation policy addresses insulated envelopes, glazing, lighting controls and HVAC.
- Efficiency requirements apply to both existing-building upgrades and new construction.
- Building-level energy baselines and project acceptance records remain priorities.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The 2026–2030 plan calls for assessment of building use, floor area, occupancy, electricity, thermal demand and maintenance needs.
- A building-level opportunity register should record technical feasibility, costs, expected benefits and implementation status.

# LED lighting transformation

## ~180,000 | reported LED units

- Approximately 180,000 lighting units reported converted to LED technology.
- University documents describe a 100% transition in the relevant lighting inventory.
- Next step: verify inventories and optimise operating schedules.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- LED systems can reduce demand and maintenance requirements relative to older conventional lighting.
- The next management task is to verify inventories and operating schedules and measure actual electricity reductions using comparable baselines.

# Smart controls and equipment

- Motion-sensor lighting and timers reduce unnecessary use in shared spaces.
- Energy-efficient computers and environmental monitoring devices support operations.
- Technical audits will identify additional opportunities for equipment optimisation.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Controls are especially relevant in corridors, shared spaces and rooms with intermittent occupancy.
- Verification should include commissioning records, operating schedules, maintenance status and monitored before/after consumption.

# Solar thermal and hot water

## 45 | reported solar water-heating systems

- Energy Efficiency Plan lists 45 installed solar water-heating systems.
- Solar thermal technologies complement photovoltaic electricity generation.
- Operational verification and thermal-output tracking are recommended.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The Green Energy educational platform also demonstrates solar cooking and other solar-thermal applications.
- Future monitoring should document the operating condition, output and conventional-energy displacement of individual systems.

# Energy efficiency plan 2026–2030

- Progressively assess academic, administrative, laboratory and residential buildings.
- Prioritise envelope upgrades, HVAC, controls and efficient procurement.
- Use comparable baselines before claiming percentage energy savings.

**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Priority 3: establish comparable building-level energy baselines and intensity indicators.
- Priority 4: implement upgrades, verify performance and review priorities at least annually.

# Carbon reduction action plan

- 2025–2030 implementation framework covers low-carbon mobility, green campus and sustainable energy.
- At least annual reviews, a 2027 mid-term review and a 2030 final review are specified.
- Targets require baseline validation and consistent accounting boundaries.

**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- A mid-term review is scheduled for 2027, with a final review in 2030.
- The plan targets at least a 40% reduction in reported transport emissions from a verified comparable baseline, alongside renewable-capacity expansion.

# Transport emissions baseline

## 93.6 $tCO_2e$ | reported transport baseline

- Reported transport baseline totals 93.6 $tCO_2e$.
- Cars account for 86.4 $tCO_2e$ and buses for 7.2 $tCO_2e$.
- The action plan sets a direction of at least 40% reduction by 2030 against a verified baseline.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The carbon-management framework refers to the GHG Protocol and monitoring of direct and purchased-energy emissions.
- Annual verification should document activity data, emission factors, calculation boundaries and year-to-year comparability.

# Sustainable campus mobility

- 70 bicycles were reported provided free of charge to staff and students.
- Conventional parking spaces reportedly reduced from 150 to 30.
- Twice-monthly car-free days and EV charging support modal shift.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Car-Free Days take place on the first and last Friday of each month.
- EV charging infrastructure and electric/hybrid shared transport are included in the wider low-carbon mobility programme.

# Green campus transformation

- Parking space conversion supports greenery and outdoor study areas.
- Tree planting and the Young Environmentalists Community strengthen engagement.
- Campus greening contributes to environmental quality and climate resilience.

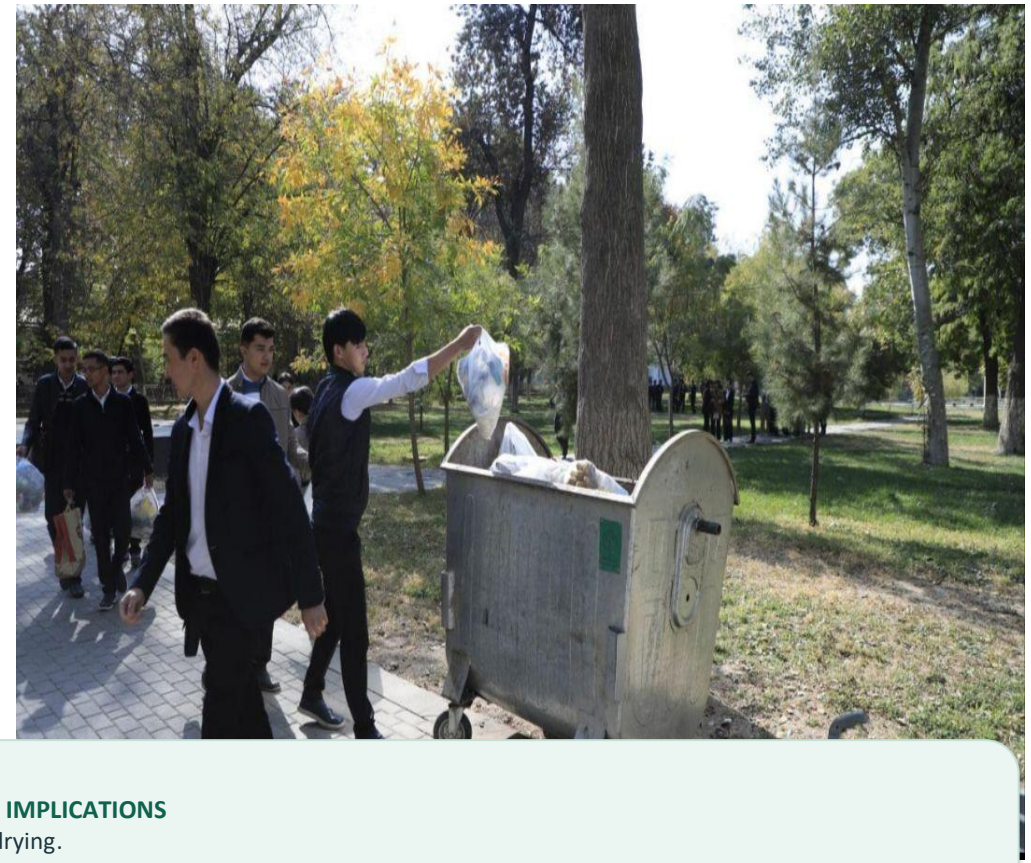


**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The Young Environmentalists Community supports student participation in awareness and sustainability activities.
- Carbon sequestration benefits should only be quantified where species, survival, growth and measurement assumptions are documented.

# Green energy research platform

- Department of Physics and Astronomy partnered with NAVOIY GOLD LLC.
- Two mini photovoltaic stations have been installed and commissioned.
- Solar cooker, water heater, fruit dryer and SMART STOP are described at differing stages of deployment.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- The platform includes or plans demonstration applications such as SMART STOP, solar cooking, water heating and fruit drying.
- It supports applied teaching, prototype testing and student research in renewable energy systems.

# Community clean-energy education

- International Solar Day on 3 May featured peer-led learning for school pupils.
- Workshops explain solar generation, environmental responsibility and energy conservation.
- Community discussions extend clean-energy literacy beyond campus.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- University outreach connects academic knowledge with schools, local residents, youth organisations and civic groups.
- Event documentation should retain dates, venues, attendance, photos and learning outcomes.

# Youth for Climate & Clean Energy

## 300+ | participants reported

- Regional forum combined expert discussion, demonstrations and school outreach.
- Source report states more than 300 participants.
- Youth Clean Energy Ambassadors Network was established for follow-on activities.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Activities included expert discussions, model wind turbines, solar-powered vehicles, efficiency tools and school-friendly demonstrations.
- The reported Youth Clean Energy Ambassadors Network is intended to sustain follow-up education in schools and mahallas.

# Policy dialogue and partnerships

- University engagement with public authorities and ecological organisations supports discussion of energy policy.
- 2025–2026 meetings addressed sustainable energy, climate change and green industry.

- Policy influence should be evidenced through documented proposals and consultation outputs.



**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Other evidence describes roundtables with the Ecological Party and public awareness work on environmental culture.
- Policy influence should be evidenced by dated consultations, technical recommendations, jointly prepared proposals or adopted outputs.

# Industry capacity building

## 28 | industry trainees reported

- University materials describe energy-diagnostics training for 28 NMMC managers and engineers.
- Technical topics include thermography, motors, ventilation and compressed-air losses.
- Joint industry research and practical training link university expertise to regional needs.

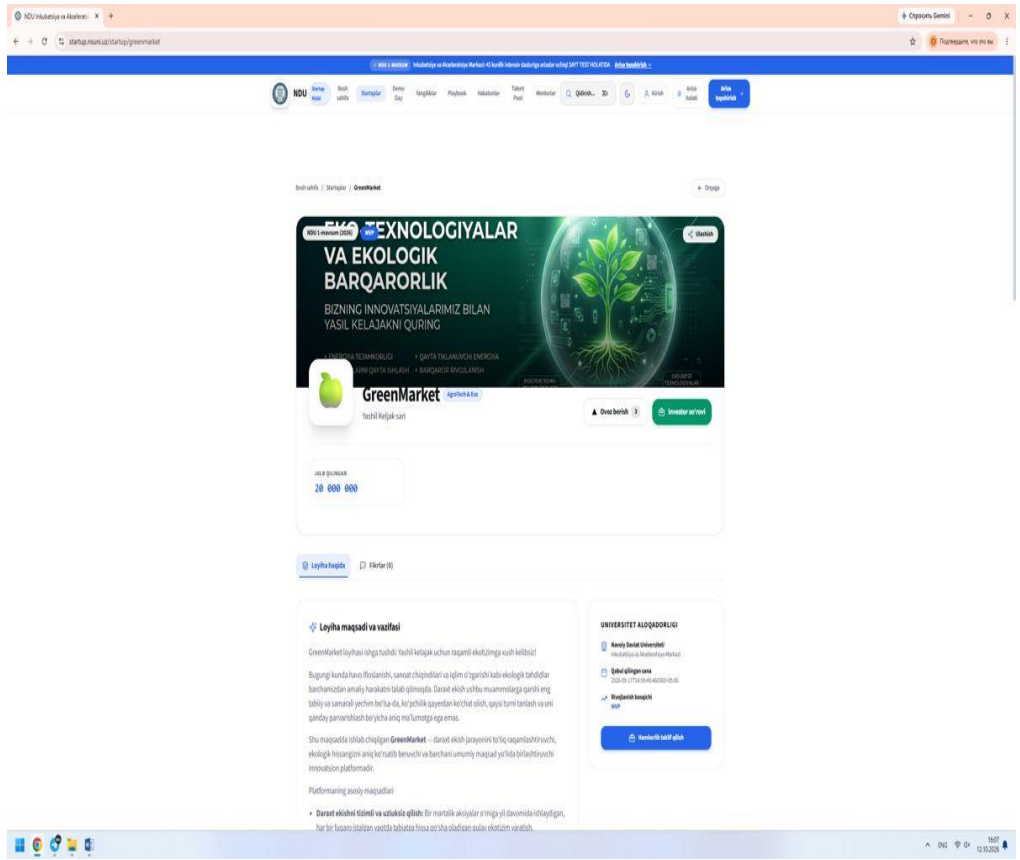


**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Training topics include energy diagnostics, thermography, motor/ventilation optimisation and compressed-air efficiency.
- Supporting documentation should include the signed order, syllabus, attendance and practical audit outputs where available.

# Green startups and innovation

- GreenMarket proposes a digital tree-planting and carbon-tracking ecosystem.
- EcoFuqaro applies AI and location data to environmental reporting.
- SMART STOP explores solar-powered public infrastructure; project impacts require verification.




**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- EcoFuqaro is described as an AI- and geolocation-enabled citizen environmental reporting platform.
- SMART STOP demonstrates solar-powered urban furniture; projected startup impacts should be distinguished from verified environmental outcomes.

# 2027–2030 priority roadmap

- Verify the solar asset register, energy metering boundaries and annual datasets.
- Establish building-level consumption baselines and targeted retrofit pipeline.
- Track carbon, training outcomes and community participation with documentary evidence.

**DETAILED EVIDENCE & MANAGEMENT IMPLICATIONS**

- Expand community programme evaluation, industry project evidence and annual emissions reporting.
- Maintain an annual management review and the planned 2027 mid-term carbon-plan assessment.