NAVOI STATE UNIVERSITY

CARBON REDUCTION ACTION PLAN
2025–2030

Institutional Implementation Plan



Document Control and Approval

Item	Details
Document owner	Navoi State University
Document title	Carbon Reduction Action Plan 2025–2030
Status	Institutional implementation plan
Implementation period	2025–2030
Primary strategic areas	Low-Carbon and Sustainable Mobility; Green Campus; Sustainable Energy Sources
Review frequency	At least annually
Mid-term review	2027
Final review	2030
Approval	To be approved in accordance with the University's internal governance procedures

1. Purpose and Scope

The Carbon Reduction Action Plan 2025–2030 translates Navoi State University's Carbon Management and Carbon Reduction Plan into a practical programme of implementation. It defines the actions, responsibilities, timelines, performance indicators, financing mechanisms and monitoring arrangements required to reduce greenhouse gas emissions and strengthen the University's transition towards a low-carbon campus.

The Action Plan covers direct and purchased-energy emissions within the University's operational boundary and establishes a progressive framework for improving coverage of relevant indirect emissions. It is designed as a working document and will be updated as data quality, project feasibility and institutional priorities develop.

2. Implementation Principles

- Evidence-based decision-making: actions will be prioritised using measured energy, transport and emissions data.
- Measurable reduction: major actions will have defined indicators and, where data permit, quantified carbon impacts.
- Energy efficiency first: demand reduction and efficient operation will be pursued before additional energy supply is considered.
- Renewable transition: renewable energy capacity and renewable-energy use will be progressively expanded.
- Low-carbon mobility: the University will reduce reliance on high-emission transport and support electric, active and shared mobility.
- Whole-campus approach: buildings, transport, infrastructure, energy systems, procurement and user behaviour will be considered together.
- Financial feasibility: implementation will use institutional budgets, savings, grants, partnerships and appropriate financing mechanisms.
- Continuous improvement: annual monitoring and a 2027 mid-term review will be used to revise priorities and close data gaps.

3. Baseline and 2030 Direction

The University's reported 2024–2025 transport carbon baseline is 93.6 tCO_2e, comprising 86.4 tCO_2e from cars and 7.2 tCO_2e from bus transport. This baseline is used for planning and will be refined through annual data verification.

Indicator	Planning baseline	2030 direction / target
Total reported transport carbon footprint	93.6 tCO_2e (2025–2026)	Reduce transport-related emissions by at least 40% from the verified baseline
Car-related emissions	86.4 tCO_2e	Substantial reduction through electrification, modal shift and demand management
Bus transport emissions	7.2 tCO_2e	Progressive shift to electric/hybrid shared transport
Carbon footprint	93.6 tCO_2e reported baseline	Target overall reduction of at least 40% where the same accounting boundary is maintained
Renewable electricity capacity	510 kW reported installed solar capacity	Increase installed renewable-electricity capacity by at least 20% above the verified 2025–2026 baseline
Electricity intensity	2025 baseline to be established/verified	Reduce electricity use per relevant unit of floor area by at least 20% by 2030
Scope 3 coverage	Partial / developing	Expand material Scope 3 measurement and management annually

4. Governance and Responsibilities

Implementation will be coordinated through the University's existing governance structure. The Rector provides overall institutional leadership. The Unit for Coordination of Construction Works and the Vice-Rector for Capital Constructions coordinate planning and implementation of energy-efficient infrastructure and renewable-energy systems.

Function	Primary responsibility
Rector / University leadership	Institutional approval, strategic direction and resource mobilisation
University Committee / Sustainability Committee	Policy oversight, review of progress, performance evaluation and recommendations
Unit for Coordination of Construction Works	Coordination of infrastructure, energy-efficiency and capital projects
Vice-Rector for Capital Constructions	Oversight of capital construction, energy and renewable-energy implementation
Finance / Procurement functions	Budget planning, procurement, financing mechanisms and value-for-money review
Transport / Facilities functions	Mobility, fleet, parking, charging and shuttle

Function	Primary responsibility
	measures
IT / Digital functions	Energy and mobility data systems, dashboards and digital monitoring
Academic units / research teams	Technical expertise, pilots, innovation and student engagement
All University units	Data provision, implementation support and compliance with operational measures

5. Workstream I — Low-Carbon and Sustainable Mobility

The mobility workstream addresses the largest component of the current reported transport carbon baseline. Priority will be given to electrification, shared mobility, active transport, parking management and reliable mobility data.

Action	Implementation	Period	Lead	KPI	Financing
Electric vehicle charging infrastructure	Assess demand, expand charging points where justified, define operating rules and monitor utilisation.	2025–2030	Facilities / Construction	No. of active chargers; utilisation; estimated EV charging demand	Capital budget / partnerships
Electric and hybrid university transport	Progressively introduce electric or hybrid vehicles for appropriate university transport and shuttle services.	2025–2030	Transport / Facilities	Share of low-emission vehicles; fuel avoided	Capital budget / leasing / partnerships
EV purchase incentives and financing information	Promote available interest-free instalment or credit mechanisms for eligible EV purchases; provide transparent information without representing third-party finance as University lending unless formally	2026–2030	Sustainability / Finance / Communications	No. of participants/users; uptake of EVs	Partner / financial institution mechanisms

Action	Implementation	Period	Lead	KPI	Financing
	confirmed.				
Cycling infrastructure	Maintain and improve dedicated cycling routes, secure bicycle parking and safe access.	2025–2030	Facilities	No. of bicycle spaces; route coverage; user uptake	Institutional capital budget
Bicycle access programme	Expand access to bicycles for students and staff where demand is demonstrated.	2025–2030	Student Affairs / Facilities	Bicycles available; users registered	Institutional / partner support
Parking and traffic management	Use parking management, pricing and space allocation to reduce unnecessary private-car dependence and support green space.	2025–2030	Facilities / Administration	Parking spaces; occupancy; transport-mode survey	Operational budget
Car-Free and low-car mobility days	Institutionalise regular car-free mobility days and monitor participation and modal shift.	2025–2030	Sustainability / Student Affairs	Events/year; participation; mode-share data	Operational budget
Electric/hybrid shuttle service	Develop shared shuttle routes linking academic, administrative and residential facilities; introduce route and schedule optimisation.	2026–2030	Transport / Facilities / IT	Routes; frequency; passengers; fuel/energy use	Operating budget / partnerships
Digital mobility tracking	Develop app-based or digital monitoring of shuttle routes, bicycles and, where appropriate, e-scooters.	2026–2030	IT / Transport	Data coverage; active users; route data availability	Digital budget / partnerships

Action	Implementation	Period	Lead	KPI	Financing
E-scooter and micromobility programme	Assess and, where feasible, introduce controlled e-scooter docking and charging arrangements.	2027–2030	Facilities / IT / Student Affairs	Docks; trips; safety compliance	Partnership / investment

6. Workstream II — Green Campus Transformation

The Green Campus workstream will reduce energy demand, improve the efficiency of campus infrastructure and integrate carbon considerations into facilities management, construction, procurement and campus-space planning.

Action	Implementation	Period	Lead	KPI	Financing
Campus energy audits	Establish a rolling programme of energy audits for major buildings and energy-intensive systems.	2025–2030	Facilities / Construction	Buildings audited annually; identified savings	Institutional budget / energy-service partnerships
LED lighting performance management	Maintain the LED standard and verify operational performance, controls and replacement needs.	2025–2030	Facilities	LED coverage; electricity use from lighting where measurable	Operational budget / savings
Smart energy monitoring	Develop building-level metering and digital monitoring for electricity and other relevant energy flows.	2025–2030	Facilities / IT	Buildings with reliable meter data; monthly data completeness	Capital / digital investment
HVAC optimisation	Optimise heating, ventilation and air-conditioning schedules, controls, maintenance and temperature settings.	2026–2030	Facilities	Energy intensity; system efficiency indicators	Operational / capital budget

Action	Implementation	Period	Lead	KPI	Financing
Building efficiency standards	Integrate energy performance, passive design, insulation, efficient equipment and lifecycle carbon considerations into renovation and new construction decisions.	2025–2030	Construction / Procurement	Projects assessed against standard	Capital budget
Green-space and heat mitigation	Protect and expand green areas, tree cover and shaded outdoor spaces where feasible, considering climate resilience and campus comfort.	2025–2030	Facilities / Sustainability	Green-area and tree indicators; shaded areas	Institutional / environmental programmes
Sustainable procurement	Introduce energy efficiency, lifecycle cost and environmental criteria into relevant procurement specifications.	2026–2030	Procurement / Finance	Share of applicable tenders using criteria	Procurement budget
Carbon awareness and staff/student engagement	Provide practical energy-saving and low-carbon mobility guidance and link engagement to measurable operational actions.	2025–2030	Sustainability / Student Affairs	Campaigns; participation; behaviour indicators	Operational budget

7. Workstream III — Sustainable Energy Sources

The sustainable-energy workstream will increase renewable-energy capacity, improve monitoring of renewable generation and integrate renewable systems with energy-efficiency measures. Existing reported renewable assets will be treated as baseline infrastructure and subject to verification through the University's energy records.

Action	Implementation	Period	Lead	KPI	Financing
Renewable-energy asset register	Maintain a verified inventory of solar, wind and micro-hydropower systems, capacity, location, ownership and operational status.	2025–2030	Construction / Energy Unit	Complete annual asset register	Operational budget
Solar PV expansion	Assess rooftops, parking areas and other suitable locations and develop phased solar PV projects.	2025–2030	Construction / Finance	Installed renewable capacity (kW)	Capital budget / grants / partnerships
Solar-panel financing mechanisms	Promote available interest-free financing or instalment mechanisms for solar-panel installation where applicable, subject to verified institutional or partner arrangements.	2026–2030	Finance / Sustainability	Number/value of supported installations; capacity added	Financial institution / partner mechanisms
Renewable generation monitoring	Install or strengthen generation metering and monthly reporting for renewable-energy assets.	2025–2030	Energy Unit / IT	Generation data completeness; kWh/year	Operational / digital investment
Solar water heating	Maintain and assess expansion of solar water-heating systems for dormitories,	2025–2030	Facilities	Systems operational; thermal energy displaced	Capital budget / partnerships

Action	Implementation	Period	Lead	KPI	Financing
	laboratories, cafeterias and other suitable facilities.				
Micro-hydropower pilots	Maintain research and pilot systems where technically and environmentally appropriate and evaluate scalability.	2026–2030	Research / Construction	Generation; pilot assessments	Research / partner funding
Small-scale wind systems	Evaluate performance and suitability of small wind systems for selected open-campus applications and research purposes.	2026–2030	Research / Facilities	Generation; operating hours; feasibility reviews	Research / partner funding
Renewable-energy integration	Develop a coordinated approach to renewable generation, storage where feasible, demand management and grid interaction.	2027–2030	Construction / Energy Unit / Finance	Share of renewable supply; peak-demand management	Capital / grants / partnerships
Renewable electricity procurement	Where on-site generation is insufficient or unsuitable, assess procurement of renewable electricity or equivalent verified low-carbon supply mechanisms.	2027–2030	Finance / Procurement	Share of electricity covered by verified renewable supply	Procurement / supplier contracts

8. Financing and Investment Framework

Implementation will use a blended financing approach. Projects will be prioritised according to carbon impact, energy savings, lifecycle cost, technical feasibility, operational value and availability of external finance.

Financing mechanism	Application
University capital budget	Infrastructure, charging, metering, energy efficiency and renewable-energy projects
Operational savings / reinvestment	Reinvestment of verified energy or operating savings into further carbon-reduction measures
Grants and development programmes	Renewable energy, climate resilience, research and innovation projects
Partnerships	Technology, mobility, research and demonstration projects
Interest-free EV financing mechanisms	Support for eligible EV purchases through available financial/partner mechanisms; institutional role to be documented
Interest-free solar financing mechanisms	Support for eligible solar installations through available financial/partner mechanisms; institutional role to be documented
Leasing / service models	Where appropriate for fleet, charging, energy or digital infrastructure

9. 2025–2030 Implementation Roadmap

Year	Priority implementation	Expected management output
2025	Establish/verify carbon and energy baselines; maintain governance; begin action implementation; define data owners; confirm priority projects.	Baseline quality; governance; action register
2026	Strengthen mobility, energy monitoring and renewable-energy implementation; formalise financing and partner mechanisms; establish annual reporting.	Metering coverage; mobility indicators; project pipeline
2027	Conduct mid-term review; assess progress against 2030 targets; revise actions where performance is off track; expand Scope 3 coverage.	Mid-term review completed; corrective actions
2028	Scale cost-effective energy efficiency, renewable energy and low-carbon mobility measures; strengthen digital dashboard.	Energy intensity; renewable capacity; transport emissions
2029	Consolidate high-impact	Verified KPI trends; remaining

Year	Priority implementation	Expected management output
	measures; verify data quality; prepare 2030 target pathway and final-year investment priorities.	gap
2030	Complete final review, verify performance against targets and prepare next carbon-management cycle.	Target achievement; lessons learned; next plan

10. Key Performance Indicators

KPI	Unit	Frequency	2030 direction
Total carbon footprint	tCO_2e	Annual	≥40% reduction by 2030 from verified baseline
Transport emissions	tCO_2e	Annual	≥40% reduction from verified baseline
Car-related emissions	tCO_2e	Annual	Downward trend; major contribution to transport reduction
Electricity intensity	kWh/m² or another verified normalised unit	Monthly/annual	≥20% reduction by 2030 from verified 2025 baseline
Renewable electricity capacity	kW	Quarterly/annual	≥20% increase above verified 2025–2026 baseline
Renewable electricity generation	kWh/year	Monthly/annual	Increase with asset expansion and performance
EV charging infrastructure	Number of active points	Quarterly	Progressive expansion based on demand
Low-emission fleet share	% of relevant fleet	Annual	Progressive increase to 2030
Cycling infrastructure	Spaces/routes or equivalent	Annual	Progressive increase and utilisation monitoring
Building energy monitoring	% buildings with reliable meter data	Quarterly	Progressive coverage toward full priority-building coverage
Scope 3 coverage	Number / % material categories measured	Annual	Progressive expansion
Action completion	% actions on schedule	Quarterly/annual	≥90% of scheduled actions on track

11. Monitoring, Reporting and Review

- Quarterly implementation review: responsible units update action progress, risks, expenditure and KPI data.
- Annual carbon inventory: the University compiles and verifies Scope 1 and Scope 2 data and progressively expands relevant Scope 3 categories.
- Annual Carbon Management Progress Report: completed measures, measured outcomes, challenges and corrective actions are documented separately from this Action Plan.
- Annual management review: the Sustainability Committee reviews progress and recommends adjustments to priorities and financing.
- 2027 mid-term review: the University assesses the gap between actual performance and the 2030 pathway and formally updates the Action Plan where required.
- 2030 final review: performance is assessed against the approved targets and the next carbon-management cycle is prepared.

12. Data Management and Carbon Accounting

The University will maintain a controlled evidence base for carbon accounting. Scope 1 data will cover direct emissions from University-controlled vehicles and relevant fuel combustion. Scope 2 will cover purchased electricity and other purchased energy within the University's accounting boundary. Material Scope 3 categories will be added progressively as data availability and methodology improve.

Data category	Minimum data requirement	Responsible data owner
University vehicles	Fuel type, quantity, distance where available, vehicle type	Transport / Finance
Purchased electricity	Metered kWh, bills, tariff/supplier data	Energy / Finance
Renewable generation	Metered kWh by installation	Energy / Facilities
Buildings	Floor area, energy use, operating profile	Facilities / Construction
Mobility	Fleet, shuttle, parking, bicycle and mode-share data	Transport / Student Affairs
Scope 3	Category-specific activity data as available	Relevant administrative units

13. Risk Management

Risk	Potential impact	Management response
Insufficient or inconsistent data	Weak carbon baseline and trend analysis	Assign data owners; standardise collection; conduct annual verification
Capital constraints	Delayed infrastructure projects	Prioritise high-return measures; use grants, partnerships and financing mechanisms
Technology performance gaps	Lower-than-expected carbon	Commissioning, maintenance,

Risk	Potential impact	Management response
	savings	metering and periodic technical review
Low user uptake	Limited mobility or behaviour-change impact	Awareness, incentives, reliable services and user feedback
Rapid campus growth	Absolute emissions may rise despite efficiency gains	Use normalised indicators such as kWh/m² and per-user metrics alongside absolute emissions
Boundary changes	Apparent changes in carbon footprint may reflect accounting changes	Document boundaries and methodology in every annual inventory

14. Priority Actions for the Next Implementation Cycle

1. Approve the Action Plan through the University's internal governance process.
2. Confirm named data owners and establish the annual carbon-accounting calendar.
3. Verify the 2025–2026 baseline and establish the 2026–2027 energy-intensity baseline.
4. Create a single institutional register for carbon-reduction projects and renewable-energy assets.
5. Develop the first annual Carbon Management Progress Report using verified data.
6. Formalise the monitoring framework for EV charging, low-emission transport, renewable generation and building energy use.
7. Document the institutional/partner mechanism behind EV and solar interest-free financing or instalment opportunities.
8. Prepare the 2027 mid-term review methodology in advance so that corrective actions can be triggered early.

15. Action Plan Summary

Workstream	Priority outcome by 2030	Core measures
Low-Carbon and Sustainable Mobility	Major reduction in transport emissions and increased use of low-carbon mobility	EV infrastructure; low-emission fleet; shuttle; cycling; parking management; car-free days; digital mobility monitoring
Green Campus Transformation	Lower energy demand and improved campus resource efficiency	Energy audits; LED performance; smart metering; HVAC optimisation; building standards; green infrastructure; sustainable procurement
Sustainable Energy Sources	Higher renewable-energy capacity and improved renewable-energy integration	Solar PV; renewable monitoring; solar water heating; micro-hydro and wind pilots; renewable procurement; financing mechanisms

Conclusion

The Carbon Reduction Action Plan 2025–2030 provides the implementation framework for Navoi State University's long-term carbon-management objectives. Its effectiveness will depend on consistent measurement, accountable implementation, appropriate financing and annual review. The Plan is intentionally designed as a living institutional document: actions and targets may be refined when verified data, technical assessments or new financing opportunities become available.