Carbon Reduction Target Policy

Toward Net-Zero Scope 1 and 2 Emissions by 2050

TERMEZ STATE UNIVERSITY | TERMEZ/UZBEKISTAN

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Introduction

Termez State University (TerSU) has embraced sustainability as a core institutional priority, driven by the urgent global climate crisis. Aligned with Uzbekistan's national climate commitments and the objectives of the Paris Agreement, the university sets forth a clear commitment: to achieve net-zero Scope 1 and Scope 2 greenhouse gas (GHG) emissions by 2050.

This ambitious target reflects TerSU's belief in the transformative potential of higher education institutions in fostering decarbonization and cultivating climate-resilient communities. This initiative encompasses not only an environmental imperative but also an educational and ethical responsibility, positioning TerSU as a regional leader in climate stewardship and institutional integrity.

This report outlines the rationale, methodology, and initial steps in TerSU's carbon reduction journey, specifically concentrating on emissions from campus operations (Scope 1) and those stemming from purchased energy (Scope 2). It emphasizes the strategic partnership with VZMD, which enhances TerSU's capacity to implement innovative and collaborative sustainability practices.

Defining Scope 1 and 2 Emissions

In accordance with the internationally recognized Greenhouse Gas Protocol, TerSU categorizes its emissions into three scopes, focusing primarily on Scope 1 and Scope 2 in this document:

- **Scope 1 Emissions:** These are direct emissions from sources owned or controlled by the university, including emissions from campus boilers, backup generators, and university-owned vehicles. They are closely associated with heating and transportation services on campus.

- **Scope 2 Emissions:** These are indirect emissions resulting from the generation of purchased electricity and thermal energy consumed by the university. Although TerSU does not directly emit these emissions, it is accountable for them based on its energy consumption choices.

Tackling these two scopes represents a crucial first step in diminishing the university's overall environmental impact. Once a robust decarbonization framework for Scope 1 and 2 is established, the focus will shift to Scope 3 emissions, which encompass broader supply chain impacts and community behaviors.

Baseline Emissions Inventory and Data-Driven Planning

As of early 2024, Termez State University is set to initiate its first comprehensive Greenhouse Gas Inventory, which will provide a baseline for Scope 1 and 2 emissions. This inventory will encompass an audit of fuel consumption, electricity usage, and transportation-related emissions within university operations.

Developing a precise emissions profile is foundational for crafting targeted reduction strategies. The data collected will serve as a benchmark against which future progress will be assessed, enhancing institutional transparency and enabling TerSU to weave carbon performance into its broader operational decisions.

A cross-departmental sustainability task force will manage the inventory, with input from external consultants as necessary. The inventory will adhere to international best practices in emissions accounting and will be updated every two years to ensure consistency and accountability.

Strategic Approach to Carbon Reduction

To realize its net-zero goal by 2050, TerSU is implementing a phased and strategic approach that melds operational reforms, technological advancements, and community behavioral changes across the institution. Initial efforts will concentrate on energy efficiency improvements—retrofitting buildings with high-efficiency lighting and HVAC systems, enhancing insulation, and optimizing energy use schedules. These modifications are expected to yield significant reductions in both Scope 1 and Scope 2 emissions.

Simultaneously, the university is investigating renewable energy alternatives. Pilot solar panel installations are already operational in university-owned facilities, with aspirations to generate a substantial portion of the university's electricity through on-site solar energy by 2035. Opportunities for procuring green electricity through Uzbekistan's national grid or establishing power purchase agreements will also be explored.

An integral part of this strategy involves reimagining the university's transportation system. This includes transitioning to electric vehicles for the university fleet, installing EV charging infrastructure, and encouraging students and staff to embrace walking, cycling, and public transportation. Such approaches will foster long-term emissions reductions while promoting healthier urban mobility.

Raising awareness and fostering an educational shift towards sustainability are of paramount importance. A vibrant campus culture centered on sustainability will be nurtured through student-led initiatives, faculty engagement, and the infusion of sustainability themes into the curriculum and research endeavors. Each action—whether related to energy consumption in offices and labs or waste management—can significantly impact the university's carbon footprint, illustrating the necessity for community involvement.

Strategic Collaboration with VZMD and the Surkhan Green Energy Hub

A cornerstone of Termez State University's decarbonization strategy is its collaborative partnership with VZMD (Pan-Slovenian Shareholders' Association), which has evolved into a dynamic investment and innovation alliance. Together, they are co-steering the development of the Surkhan Green Energy Hub, an innovative renewable energy technopark located in the Surkhandaryo region.

With over $19 million in dedicated investment—including substantial Slovenian private capital facilitated by VZMD—this hub encompasses the complete solar energy value chain: from photovoltaic panel production and testing laboratories to certification centers and educational programs, as well as international logistics. Designed to address regional energy needs, it will also function as an export base to Afghanistan and Tajikistan, marking it as a vital node for climate and energy diplomacy in Central Asia.

TerSU's involvement is both academic and operational; the university is establishing training centers, research units, and internship programs within the Hub, directly integrating these initiatives into its curricula. In turn, TerSU will gain direct access to the clean electricity produced by the 5 MW solar installation, significantly reducing its Scope 2 emissions over time. Furthermore, this partnership positions TerSU as a national leader in applied green energy education and green technology innovation.

VZMD's engagement unlocks access to European expertise in ESG-aligned infrastructure, sustainable procurement practices, and global investment networks. It also allows TerSU to adopt EU-aligned sustainability reporting tools and measurement standards, reinforcing the university's accountability and enhancing its competitiveness in international sustainability assessments.

Interim Targets and Progress Monitoring

To maintain a clear and results-oriented trajectory toward its 2050 net-zero goal, TerSU has outlined interim targets with defined performance indicators. The first milestone is achieving a 25% reduction in Scope 1 and Scope 2 emissions by 2030, using 2024 as the baseline year. This will be realized through facility retrofitting for enhanced energy efficiency, leveraging solar power from the Surkhan Hub, and the gradual transition of the university's transportation fleet to electric or hybrid vehicles.

By 2040, TerSU aims for a 50% reduction in operational emissions. This milestone will involve the full integration of clean electricity sourced from the Surkhan Green Energy Hub, extensive electrification of infrastructure, and updated procurement policies that prioritize low-carbon vendors.

To ensure transparency and accountability, TerSU will launch a publicly accessible Carbon Performance Dashboard in 2026, providing real-time updates on emissions reductions, renewable energy utilization, and progress on key indicators. Additionally, annual sustainability reports, prepared in collaboration with VZMD advisors, will maintain methodological consistency and alignment with global standards such as the Greenhouse Gas Protocol and SDG indicators.

Biennial third-party audits will evaluate emissions data and confirm compliance, while findings will inform not only operational decisions but also curriculum enhancements. This feedback mechanism guarantees that the university's efforts are not only substantial but also scientifically validated.

Commitment and Institutional Alignment

Termez State University's carbon reduction strategy is intricately linked to the institution's overarching mission of advancing sustainability, innovation, and

regional development. The strategic partnership with VZMD and the establishment of the Surkhan Green Energy Hub reflect a transformational shift: from being passive consumers of energy to becoming active producers, educators, and catalysts for low-carbon transformation in the region.

This transition is aligned with TerSU's Sustainable Investment and Procurement Policies, ensuring that every resource allocation—from construction practices to energy sourcing—is guided by climate-conscious principles. It simultaneously reinforces the university's commitment to education by providing students with invaluable hands-on experiences in solar technology, green entrepreneurship, and environmental systems design.

By embedding climate action into governance, infrastructure, and education, TerSU emerges as a model for public institutions across Central Asia. The partnership with VZMD not only facilitates decarbonization but also enhances capacity building, creates research opportunities, and promotes international collaboration.

As the global climate crisis intensifies, TerSU is responding with clarity of purpose and institutional determination. Its decarbonization pathway is ambitious, data-informed, and grounded in global best practices—demonstrating that academic institutions have both the responsibility and the capability to lead the charge toward a sustainable future.

Conclusion

Termez State University's commitment to achieving net-zero Scope 1 and Scope 2 greenhouse gas emissions by 2050 represents both a strategic necessity and a moral imperative in the face of accelerating climate change. This report has outlined a clear pathway supported by actionable steps, institutional policies, and strong international partnerships, particularly the innovative cooperation with VZMD and the launch of the Surxon Green Energy Hub.

Through a multi-pronged strategy encompassing energy efficiency, renewable energy adoption, sustainable infrastructure upgrades, and transparent carbon tracking, the university has positioned itself not only as a leader in higher education but also as a regional driver of environmental transformation. The interim targets set for 2030 and 2040, including a 25% and 50% reduction in emissions respectively, demonstrate TerDU's pragmatic yet ambitious approach, rooted in continuous improvement, scientific evidence, and stakeholder engagement.

This journey is underpinned by strong institutional alignment — from procurement and investment policies to curriculum development and research innovation. By embedding sustainability into governance structures and academic culture, TerDU ensures that climate action becomes an enduring institutional value rather than a short-term initiative.

As we move forward, the university reaffirms its responsibility to future generations by leading by example. Achieving net-zero emissions is not simply about reducing carbon; it is about reimagining how universities operate, educate, and contribute to a sustainable society. With the roadmap now in place, TerDU is well-prepared to realize its climate goals — not only by 2050, but through measurable, meaningful progress every year until then.