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LƏNKƏRAN DÖVLƏT UNİVERSİTETİ

**SDG
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SDG Report: Climate action for Lankaran State University

Targeting climate action, Sustainable Development Goal 13 (SDG 13) urges immediate action to counteract climate change and its profound effects. An unprecedented worldwide issue, climate change has an impact on ecosystems, biodiversity, human health, and economic stability, among other facets of existence.

We acknowledge at Lankaran State University that combating climate change is not only a worldwide obligation, but also a local and regional one. The region of Lankaran, with its rich biodiversity, agricultural landscape, and proximity to the Caspian Sea, faces unique climate-related challenges. Rising temperatures and changing rainfall patterns could severely impact the region's agriculture, water availability, and the livelihoods of local communities. Moreover, coastal erosion and increased risks of flooding could threaten the livelihoods and infrastructure in the region.

In alignment with SDG 13, Lankaran State University is committed to playing an active role in both mitigating and adapting to the effects of climate change. We are dedicated to reducing our carbon footprint, incorporating sustainable practices into campus operations, and educating the next generation of leaders and citizens about climate action. Our efforts include transitioning to energy-efficient systems, promoting the use of renewable energy sources, and encouraging sustainable transportation and waste management practices on campus.

The university also supports scientific research on climate change and environmental sustainability, fostering innovation in fields like clean energy, environmental protection, and climate resilience. Through interdisciplinary studies, we aim to equip students with the knowledge and skills needed to address climate-related challenges both locally and globally. Lankaran State University is also committed to collaborating with governmental and non-governmental organizations, as well as local communities, to promote climate adaptation strategies and raise awareness about the importance of SDG 13.

Furthermore, we recognize the importance of global cooperation in addressing climate change. The international framework of the **Paris Agreement** sets an example of how countries and regions can work together to limit global warming, reduce emissions, and adapt to the inevitable impacts of climate change. At the local level, Lankaran State University encourages students, faculty, and the community to embrace sustainable practices that contribute to the broader goals of climate action.

As part of our commitment to SDG 13, Lankaran State University continues to monitor and assess the environmental impacts of our activities, ensuring that we contribute positively to the region's climate resilience. We also advocate for climate policies that promote environmental sustainability, reduce greenhouse gas emissions, and support sustainable development at the national and regional levels.

By taking a proactive approach to climate action, we aim to support the global goal of limiting global temperature rise and fostering a more sustainable and resilient future for all. Through education, research, and community engagement, Lankaran State University is dedicated to playing its part in achieving SDG 13 and contributing to a more sustainable world.

SDG 13: Climate Action—Lankaran State University’s Comprehensive Strategy

As the world grapples with the effects of climate change, Sustainable Development Goal 13 (SDG 13) calls for urgent and transformative action to combat climate change and its widespread impacts. Lankaran State University (LSU) recognizes the critical importance of this goal, both in the context of global environmental sustainability and as part of our institutional responsibility to reduce the carbon footprint of our operations. Our university, located in the southern region of Azerbaijan, is uniquely positioned to contribute to climate action efforts, addressing both local and global challenges related to rising temperatures, extreme weather events, shifting agricultural patterns, and the degradation of biodiversity.

1. Strategic Goal: Mitigating and Adapting to Climate Change

Lankaran State University is fully committed to achieving SDG 13 by aligning our operations, research, and educational programs with global climate action objectives. Our strategic goal is to contribute to both the **mitigation** of climate change and the **adaptation** of our university and local community to its inevitable impacts. This dual approach is essential for long-term climate resilience and sustainability. By integrating climate change considerations into our curriculum, campus operations, and community engagement efforts, we aim to raise awareness and foster a culture of sustainability. Through partnerships with local stakeholders and participation in global initiatives, we strive to be a leader in climate action and inspire others to take meaningful steps towards a more sustainable future.

- **Mitigation:** Our focus on mitigating climate change includes reducing greenhouse gas (GHG) emissions across all sectors of university life, from energy use and transportation to waste management and resource consumption. This will be achieved through energy-efficient infrastructure, promoting renewable energy, and encouraging sustainable practices across campus.
- **Adaptation:** Given the vulnerability of the Lankaran region to climate change—particularly in terms of agriculture, water resources, and biodiversity—the university is also committed to fostering climate adaptation strategies. This involves enhancing the resilience of both our physical campus and the surrounding community, integrating climate adaptation into research and curriculum, and working with local stakeholders to promote sustainable agricultural practices, water conservation, and disaster preparedness.

In the long term, Lankaran State University envisions being a leader in the integration of climate change solutions into higher education, research, and community action. We aim to raise awareness, drive innovation, and build a sustainable, resilient future for the next generation.

2. Greenhouse Gas (GHG) Emissions: Sources, Impact, and Reduction Strategies

Greenhouse gases (GHGs) are the primary drivers of climate change. These gases, including **carbon dioxide (CO₂)**, **methane (CH₄)**, and **nitrous oxide (N₂O)**, trap heat in the Earth's atmosphere, leading to global warming and resulting in a wide range of environmental impacts. The **energy sector** is responsible for the largest share of global emissions, followed by **transportation, industry, and agriculture**. Lankaran State University acknowledges the role it plays in contributing to these emissions through its operations, and we are committed to reducing our carbon footprint through a comprehensive strategy.

3. Sources of GHG Emissions at Lankaran State University

At LSU, we categorize our GHG emissions into three distinct scopes, as per the **Greenhouse Gas Protocol**:

- **Scope 1: Direct Emissions**

Scope 1 emissions are those that occur from sources owned or controlled by the university. These include:

- **Fossil fuel consumption** in heating systems, particularly the use of natural gas for campus buildings during the colder months.
- **University-owned vehicles** that run on gasoline or diesel, such as buses, vans, and other campus transportation.

- **Scope 2: Indirect Emissions from Purchased Energy**

Scope 2 emissions come from the consumption of purchased electricity, steam, heating, and cooling. For LSU, this primarily refers to the electricity used to power buildings, classrooms, laboratories, and administrative offices. These emissions depend on the carbon intensity of the local energy grid. While we do not directly control the energy mix, we can influence our emissions by transitioning to renewable energy sources and reducing overall energy consumption.

- **Scope 3: Other indirect emissions**

Scope 3 emissions are a result of activities not directly controlled by LSU but that occur as a consequence of university operations. These include:

- **Commuting** by staff and students who drive personal vehicles to campus, contributing significantly to emissions.
- **Waste generation** and disposal, especially from the large amounts of paper, food waste, and plastics that the university produces.
- **Supply chain emissions**, including the production and transportation of goods and services the university purchases.

4. GHG Emissions Reduction Strategy

To align with SDG 13 and minimize our environmental impact, Lankaran State University has developed a robust GHG emissions reduction strategy. Our approach focuses on energy efficiency, renewable energy, sustainable transportation, waste management, and carbon offsetting, ensuring that we take a comprehensive approach to reducing our emissions. Additionally, we are actively working to increase awareness and educate our campus community

on the importance of reducing greenhouse gas emissions. By engaging students, faculty, and staff in sustainability initiatives, we aim to create a culture of environmental responsibility and stewardship within our university.

a) **Energy Efficiency and Sustainable Building Design**

- LSU has begun retrofitting campus buildings to improve energy efficiency by implementing insulation, upgrading heating and cooling systems, and installing LED lighting. These measures will reduce the need for energy, lowering Scope 1 and Scope 2 emissions.
- We are also pursuing the construction of **green buildings** that follow sustainable design principles, including the use of low-carbon materials and energy-saving technologies.

b) **Transition to Renewable Energy**

- In line with our long-term sustainability goals, LSU is exploring the potential for generating our own **renewable energy** on campus. The installation of **solar panels** on university buildings, especially on rooftops with optimal sun exposure, will help reduce Scope 2 emissions. This move is part of our broader strategy to reduce dependency on fossil fuels and shift towards more sustainable energy sources.

c) **Sustainable Transportation**

- To reduce Scope 1 and Scope 3 emissions from transportation, LSU encourages the use of **public transportation, carpooling, and bicycles** for commuting to and from campus. We are also working to make the campus more pedestrian-friendly to encourage walking.
- Additionally, LSU plans to **electrify its vehicle fleet** by transitioning to electric buses and cars, significantly reducing emissions associated with university-owned transportation.

d) **Waste Reduction and Circular Economy**

- LSU is committed to a **zero-waste** approach. We have implemented comprehensive recycling programs across the campus and are encouraging faculty, staff, and students to reduce waste and recycle materials like paper, plastic, and glass.
- We are working on reducing **food waste** by implementing composting programs and promoting more sustainable consumption patterns within university dining services.

e) **Carbon Offsetting Projects**

- To address emissions that cannot be fully reduced, LSU is exploring opportunities to participate in **carbon offset** projects. This includes supporting **reforestation projects** and **biodiversity conservation** initiatives locally and globally to offset the remaining emissions.

5. Monitoring, Reporting, and Transparency

Effective climate action requires constant monitoring, assessment, and accountability. Lankaran State University is committed to **transparency** in its efforts to reduce GHG emissions and combat climate change. We will implement an annual **Sustainability Report** that tracks our

progress in reducing emissions, energy use, and waste. This report will be made publicly available to ensure accountability and to engage the university community in climate action.

- **Regular Audits:** LSU will conduct periodic **GHG emissions audits** to assess the effectiveness of our emission reduction strategies and identify new opportunities for further improvements.
- **Sustainability Metrics:** Our reports will include key performance indicators (KPIs) such as total GHG emissions, energy consumption, waste generation, and the percentage of renewable energy used on campus.

6. Biodiversity and Ecosystem Impacts

The region of Lankaran is home to a diverse range of ecosystems, including **forests, wetlands, and agricultural lands**, which are vital for both biodiversity and human livelihoods. However, these ecosystems are under increasing threat from climate change. Rising temperatures, changes in rainfall patterns, and the occurrence of extreme weather events such as floods and droughts could lead to the loss of vital ecosystems that provide critical services, such as water purification, soil fertility, and carbon sequestration.

At LSU, we aim to mitigate these impacts by integrating **biodiversity conservation** into our campus management and academic programs. Some of our initiatives include:

- Restoring and preserving **green spaces** on campus that provide habitat for local wildlife and help absorb CO2 emissions.
- Educating students and local communities about the importance of **biodiversity** and how climate change is threatening local ecosystems, particularly in areas like the **Talysh Mountains**, a unique and ecologically important region of Azerbaijan.

7. Social Impacts of Climate Change

Climate change disproportionately impacts vulnerable and marginalized communities. In Lankaran, the local population, particularly those dependent on agriculture, faces significant risks from unpredictable weather patterns, soil degradation, and water scarcity. As temperatures rise, crop yields may decline, food security will be threatened, and rural livelihoods could be undermined.

Lankaran State University is committed to addressing these social impacts by:

- **Raising Awareness:** Through academic programs, outreach activities, and public events, we are helping students and local communities understand the social, economic, and environmental consequences of climate change.
- **Supporting Vulnerable Populations:** LSU partners with local organizations and stakeholders to promote **climate-resilient agriculture**, sustainable water management, and disaster preparedness in the region.

- **Promoting Climate Justice:** We advocate for inclusive, **equitable climate action** that considers the needs of marginalized and low-income communities, ensuring that they are not left behind in the transition to a sustainable future.

8. Conclusion: A Collective Commitment to Climate Action

Lankaran State University is fully committed to playing its part in the global fight against climate change by addressing GHG emissions, promoting sustainability, and enhancing climate resilience. Through innovative research, sustainable campus practices, and education, we aim to contribute to a future where climate action is not just a global goal but a local reality. By embracing SDG 13, LSU is not only improving its own sustainability but also empowering future generations to take meaningful action to protect the planet for all.

Through collaboration, education, and a commitment to sustainable practices, Lankaran State University is dedicated to reducing its environmental impact, promoting biodiversity, and fostering social resilience in the face of climate change. We recognize that achieving SDG 13 is a collective effort, and we are proud to be part of the global movement toward a sustainable, resilient future.

- **Carbon Offsetting:** The practice of compensating for emissions by investing in carbon reduction projects.
- **Global Frameworks for Emission Reduction**
 - Provide examples of national and international frameworks that support emissions reduction efforts, such as **carbon pricing, emissions trading systems (ETS), and subsidies for green technologies.**
- **Role of Businesses and Corporations**
 - Highlight the increasing importance of businesses setting science-based targets for emissions reduction and transitioning to net-zero operations.

9. Sources of GHG Emissions (Scope 1, Scope 2, and Scope 3)

Goal: To explain the classification of emissions into Scopes 1, 2, and 3 and how organizations track and report these emissions. Scope 1 emissions are direct emissions from sources owned or controlled by the organization, while Scope 2 emissions are indirect emissions from purchased electricity, heat, or steam. Scope 3 emissions are all other indirect emissions that occur in the value chain of the organization, including transportation, waste disposal, and employee commuting. Organizations track and report these emissions to understand their environmental impact and develop strategies for reduction.

10. Biodiversity and Ecosystem Impacts of Climate Change

Goal: To examine how climate change affects biodiversity, ecosystems, and the vital services they provide. These are the important keylines:

- **Climate Change and Biodiversity Loss**

- Discuss how temperature increases, altered rainfall patterns, and extreme weather events threaten species and ecosystems (e.g., coral bleaching, ocean acidification, forest dieback).
- **Disruption of Ecosystem Services**
 - Detail the essential services ecosystems provide, like pollination, water purification, and soil fertility, and how climate change is undermining these services.
- **The Role of Biodiversity in Mitigation**
 - Discuss how preserving forests, wetlands, and oceans can act as carbon sinks and help mitigate climate change.

11. Monitoring and Reporting on Climate Action

To discuss the mechanisms for tracking progress toward SDG 13 and the role of monitoring in achieving climate targets. Monitoring and reporting on climate action is essential for holding governments and organizations accountable for their commitments to reducing greenhouse gas emissions and adapting to the impacts of climate change. By tracking progress towards Sustainable Development Goal 13, we can ensure that efforts are effective in mitigating the effects of climate change and protecting vulnerable communities. While monitoring and reporting on climate action is important for accountability, it may not always accurately reflect the true impact of efforts to reduce greenhouse gas emissions and adapt to climate change. External factors such as natural disasters or economic fluctuations can influence progress towards Sustainable Development Goal 13, making it difficult to solely rely on monitoring as a measure of success.

- **Climate Reporting and Data Systems**
 - Explain global initiatives to track climate change, including the World Resources Institute (WRI) data, IPCC reports, and the UNFCCC. While monitoring and reporting on climate action is important, focusing solely on data systems and global initiatives may overlook the immediate needs of vulnerable populations affected by climate change. Social resilience and justice must be prioritized in climate action strategies to ensure that marginalized communities are not further disadvantaged by extreme weather events.
- **Climate action indicators**
 - Give specifics on metrics such as GHG emissions, the proportion of energy derived from renewable sources, climate finance flows, and the status of adaptation.
 1. Explore the importance of transparency in climate reporting and how it can help hold governments and organizations accountable for their actions.
 2. Discuss the challenges faced in accurately measuring progress towards climate goals, such as data limitations, lack of standardization, and gaps in reporting.

3. Examine the role of technology and innovation in improving climate data collection and analysis, including advancements in satellite monitoring, remote sensing technologies, and big data analytics.

4. Consider the impact of climate reporting on policy-making decisions at both national and international levels, including how accurate data can influence funding allocations and resource distribution.

5. Highlight examples of successful climate action monitoring systems from different countries or regions around the world, showcasing best practices that others can learn from.

- **Accountability and Transparency**

- Talk about the significance of open climate reporting and how governments and corporations may use climate disclosures to help achieve SDG targets. Holding stakeholders accountable for their pledges and monitoring progress toward climate targets depend heavily on transparency and accountability. We can more accurately evaluate the success of climate initiatives and make well-informed decisions to promote sustainable development by putting in place transparent reporting procedures and guaranteeing data accuracy. Open climate reporting plays a crucial role in fostering trust among stakeholders and ensuring that commitments are being met. By providing access to accurate and up-to-date information, governments and corporations can demonstrate their commitment to addressing climate change and achieving sustainable development goals.

Lankaran State University we are excited to pledge for meeting all Scope 1 and 2 emissions reduction targets by the year 2050. The targeting of these mitigation goals indicates the fulfillment of various international standards and initiatives aimed at decreasing the impacts of climate change such as GHG emissions regardless of this being their cause through practices that involve energy and site specific operations of the firm.

Scope 1 and 2 emissions comprise end uses that are within the territorial boundaries of the university including electricity and fuels. In the pursuit of this goal, we do not wish to make compromises regarding our inclination to non-traditional sources of energy and environmentally friendly energy consumption techniques. More essentially however, this expectation captures Lankaran State University's contribution as an institution in expanding the sustainable practices' scope of bettering our society and environment.

The deadline of 2050 to achieve this target, calls for the engagement of faculty, staff, students and external stakeholders. We fully commit to sustainable practices that will improve the environment as a community. It is paramount to state that in this regard, Lankaran State University does not only aim to fulfill educational goals and barriers – these have already been set by other universities. This universities goal is to lead the way when it comes to overcoming contemporary climate oriented problems.