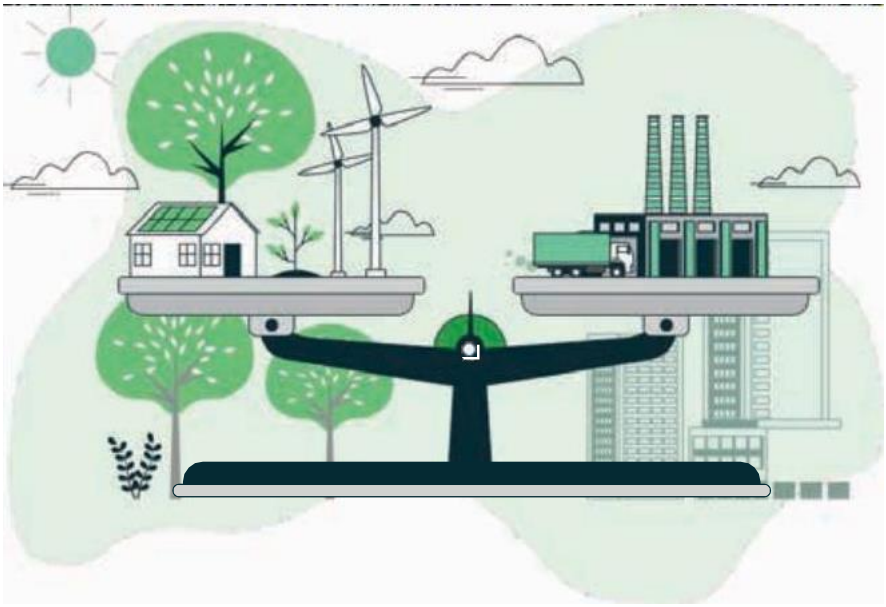
AZERBAIJAN STATE OIL AND INDUSTRY UNIVERSITY

Climate action plan



1. INTRODUCTION

Climate change is one of humanity's most pressing issues in the twen- ty-first century. Rising greenhouse gas concentrations in the atmosphere (GHGs) have led to higher global temperatures, severe weather events, and biological changes. Azerbaijan State Oil and Industry University (ASOIU), a famous educational institution, recognizes the importance of climate action and leads by example in reducing GHG emissions. ASOIU's Climate Action Plan emphasizes its commitment to sustainability and plans for reducing its carbon impact.

Climate action policy involves implementing strategies to mitigate climate change, such as reducing greenhouse gas emissions, transitioning to renewable energy, and promoting sustainable practices. It often includes international agreements, government regulations, and incentives for businesses and individuals to adopt eco-friendly practices.

ASOIU has a rich story of academic history and a vision to be pioneer in oil field. We know that development should not be at the price of the environment. Our goal is to integrate environmental care into our fundamental principles and create a sustainable culture throughout the university.

Climate change threatens our social, economic, and environmental well-being. Educators and innovators must embrace their position as catalystsfor constructive change. Our Climate Action Plan is based on the GHG Proto-col Corporate Standard, which provides a reliable framework for measuring, controlling, and decreasing greenhouse gas emissions.

The aim of climate action is to mitigate the impacts of climate change by reducing greenhouse gas emissions, fostering sustainable practices, and adapting to the changing climate. It aims to protect the environment, biodiversity, and human wellbeing for current and future generations.

Our Climate Action Plan prioritizes ambitious objectives for reducing greenhouse gas emissions. We recognize that achieving significant change takes bold initiatives and are open to creative solutions and revolutionary methods. Setting these objectives demonstrates our commitment to supporting national and global efforts to mitigate climate change.

Active participation from the university community is crucial for the success of our Climate Action Plan. Transformative transformation requires collaboration among students, professors, staff, and administration. We want to engage our community in sustainability projects by educating, creating awareness, and promoting inclusive conversation.

Collaboration and teamwork will be critical to our success. ASOIU un-

derstands the need of working together to solve climate change. We will form strategic alliances with government agencies, non-governmental groups, corporations, and educational institutions to harness their knowledge, resources, and influence. By working together, we can increase our influence and move towards a more sustainable future.

Our Climate Action Plan is a dynamic and adaptive plan. We will adapt our approach to new technology, scientific advancements, and changing social requirements. Our commitment to sustainability and a low-carbon future drives our continual improvement process.

This Climate Action Plan outlines realistic methods and tactics to minimize GHG emissions.

We will identify specific strategies to achieve our carbon reduction objectives, including energy efficiency programs, sustainable mobility, waste management, and water conservation. We will prioritize education, involvement, monitoring, reporting, and verification, together with financial assistance and risk management, to guarantee effective execution of our efforts.

The ASOIU community embraces the call to action given by climate change.

Taking bold and decisive climate action may have a long-term impact on the environment and create a precedent for others to follow. By committing to sustainability, we can create a better future for future generations and leave a beneficial impact on our university, society, and the environment.

2. ORGANISATIONAL PROFILE

Azerbaijan State Oil and Industry University prepares specialized engineering talents for our country, our homeland. On November 16, 1920 he Decree of the Azerbaijan Revolutionary committee was published on establishing the Polytechnic Institute in Baku. In September 2015, the University was named the Azerbaijan State Oil and Industry University, which was tasked with training qualified personnel not only for the oil field bur also for the entire domestic industry. ASOIU aims to promote innovation, entrepreneurship, and sustainable practices among its students, professors, and staff, building on its academic tradition and vision for the future.

Mission:

The mission of Azerbaijan State Oil and Industry University is to provide world - class education and research in petroleum, engineering, chemistry, geology and IT. The university sets ambitious goals to meet the demands of

our time. Today, our university further strengthen its activities by producing highly skilled professionals, who meet the demands of our time, benefiting both our nation and the world, and strengthening the economy, all while upholding high standards in education and teaching.

Vision:

ASOIU aims to become a regional leader in petroleum and engineering education. The institution aims to excel in academics, research, and innovation while promoting ethical principles, sustainability, and societal advancement. ASOIU aims for graduates to contribute to economic progress, environmental preservation, and social equality, making a good global effect.

Commitment to sustainability:

A commitment to sustainability at ASOIU involves adopting practices that meet the needs of the present without compromising the ability of fu- ture generations to meet their own needs. It often includes environmentally responsible actions, resource efficiency, and social responsibility to create a balance between economic, environmental, and social factors for long-term well-being.

• Green Campus Initiatives: ASOIU encourages sustainable measures on campus, such as energy saving, trash reduction, and eco-friendly technologies. We seek to reduce our carbon impact and promote a sustainable learning environment.

• Curricular Integration: ASOIU integrates sustainability ideas throughout all academic programs to solve global concerns. Our goal is to provide students with the necessary information and skills to promote sustainable development.

• Research for Sustainability: ASOIU promotes research on sustainability, finding new solutions to environmental, social, and economic difficulties. We encourage professor and student research that promotes sustainable development and advances knowledge in related sectors.

• Community Engagement: ASOIU promotes environmental awareness and beneficial actions by actively engaging with the local and wider communities. We work with partners to meet social requirements and promote sustainable development in Azerbaijan and the region.

Key Stakeholders:

ASOIU's Climate Action Plan requires collaborative efforts from several stakeholders to drive transformational change. The primary players in imple-

menting the Climate Action Plan are:

• Students: ASOIU students are the driving forces behind environmental efforts. As future leaders, they actively advocate for sustainability and participate in green campus activities.

• Faculty and Staff: ASOIU's academics and staff promote sustainability in curriculum, research, and daily operations. Their passion and engagement are crucial for fostering a thriving campus community.

• Administrative Leadership: The university's administrative officials offer assistance, direction, and resources to promote sustainability activities. Their dedication to sustainability influences institutional policies and decision-making processes.

• Community Partners: Collaboration with government agencies, non-governmental organizations, enterprises, and educational institutions is crucial for expanding the effect of ASOIU''s sustainability programs and promoting systemic change.

ASOIU GREENHOUSE GAS EMISSIONS

This section offers a comprehensive evaluation of the university's carbon footprint, outlining the emissions linked to its operations, activities, and supply chain. Utilizing meticulous data gathering and analysis, the section establishes a foundational inventory for a specific base year, covering emissions from scopes 1, 2, and 3. Scope 1 emissions denote direct greenhouse gas (GHG) emissions originating from sources owned or controlled by the organization, stemming from activities directly managed by the organization. Typical sources of Scope 1 emissions include on-site fuel combustion for heating, electricity production, and other processes. Scope 2 emissions represent indirect GHG emissions resulting from purchased electricity, steam, heat- ing, or cooling consumption by the organization. Unlike Scope 1 emissions, these occur off-site at the energy generation location but are attributed to the consuming organization. Scope 2 emissions are deemed indirect because the organization lacks direct control over energy generation. Scope 3 emissions encompass all other indirect GHG emissions resulting from the organization's activities but beyond its direct operational control. These emissions occur throughout the organization's value chain and involve various sources, including emissions from purchased goods and services, business travel, employee commuting, waste generation, and other operational activities. ASOIU's emissions across these scopes are as follows:

Scope 1 Emissions

Scope 1 emissions at ASOIU mainly stem from activities directly within our authority and include two primary sources:

Stationary Combustion GHG Emissions:

These emissions result from the burning of fuels for heating, electric-ity generation, and other processes on our campus. In 2023, approximate-ly 882,623.91 kg CO2 was emitted from stationary combustion activities at ASOIU.

Mobile Combustion GHG Emissions:

These emissions arise from the university's vehicle fleet and transportation activities. In 2023, ASOIU emitted 43,399.68 kg CO2 from mobile combustion.

Scope 2 Emissions:

Scope 2 emissions are indirect GHG emissions resulting from purchased

electricity consumption. In 2023, ASOIU's electricity consumption led to approximately 1,161,678 kg CO2 emissions.

Scope 3 Emissions:

Employee Commuting GHG Emissions:

The daily commute of ASOIU's faculty and staff contributed around 144,560 kg CO2 emissions in 2023.

Waste GHG Emissions:

Managing waste is crucial for reducing our GHG emissions. In 2023, ASOIU's waste generated approximately 58,749 kg CO2 from organic waste decomposition in landfills.

Scope 1 (Stationary Combustion)

Short-Term (2023-2025)

Introduce energy-conserving strategies, upgrade equipment for greater efficiency, and fine-tune heating, ventilation, and air conditioning (HVAC) systems.

Conduct assessments of campus buildings' energy usage to pinpoint areas where efficiency can be enhanced.

Investigate options for incorporating renewable energy sources, such as solar panels and geothermal heating, to decrease overall energy consumption.

Mid-Term (2026-2033)

Embrace environmentally-friendly construction standards for new projects and major remodels to ensure structures are energy-efficient and have

low carbon footprints.

Continue integrating renewable energy into the campus energy supply to diminish dependence on fossil fuels.

Assess the viability of combined heat and power (CHP) systems to enhance energy efficiency further.

Long-Term (2033-2040)

Consistently monitor and evaluate energy consumption and greenhouse gas emissions to refine and enhance strategies for carbon reduction.

Implement carbon-neutral heating and cooling systems throughout all campus buildings.

Assess advanced heating and cooling technologies to maximize energy efficiency. Allocate resources toward energy storage technologies to facilitate grid integration and optimize the use of renewable energy.

Scope 1 (Mobile Combustion)
Short-Term (2023-2025)

Investigate cleaner fuel alternatives for automobiles and gradually shift towards fuels with lower emissions.

Encourage carpooling and alternative modes of transportation to decrease the number of single-passenger vehicles.

Launch eco-driving initiatives to educate individuals about fuel-efficient driving behaviors.

Mid-Term (2026-2033)

Progressively transition the transportation fleet to electric vehicles (EVs) to mitigate emissions.

Expand the electric vehicle charging infrastructure across campus and explore vehicle-to-grid (V2G) technology to bolster sustainability efforts.

Optimize vehicle fleets for improved fuel efficiency and assess the feasibility of autonomous electric vehicles.

Long-Term (2033-2040)

Complete the conversion of the transportation fleet to entirely electric vehicles (EVs) for emission-free transportation.

Collaborate with transportation authorities to further advance sustainable mobility and reduce traffic-related emissions.

Involve the campus community in adopting sustainable commuting practices and advocate for active modes of transportation.

Scope 2 (Electricity Consumption)
Short-Term (2023-2025)

Deploy energy-conserving strategies, such as utilizing LED lighting and upgrading to energy-efficient appliances, to curtail electricity usage.

Conduct an audit of electricity usage to pinpoint areas of high energy consumption and opportunities for enhancing efficiency.

Collaborate with electricity providers to investigate eco-friendly energy alternatives and bolster the advancement of renewable energy initiatives.

Engage the campus community in energy-saving endeavors through awareness initiatives and educational campaigns.

Mid-Term (2026-2033)

Continue to augment the proportion of renewable energy sources in the electricity provision to minimize emissions.

Explore the potential for power purchase agreements (PPAs) with renewable energy suppliers to reinforce sustainability objectives.

Assess the feasibility of implementing onsite solar installations and other renewable energy technologies.

Promote energy-efficient practices and encourage behavioral changes among students, faculty, and staff.

Long-Term (2033-2040)

Attain a 100% renewable electricity supply to eradicate greenhouse gas emissions associated with electricity consumption.

Invest in onsite renewable energy generation to meet a substantial portion of electricity requirements.

Deploy smart grid technology and energy storage solutions to optimize the utilization of renewable energy.

Forge enduring partnerships with renewable energy providers to secure a sustainable electricity supply.

Scope 3 (Employee Commuting)
Short-Term (2023-2025):

Promote active transportation like walking or cycling for short-distance commutes.

Conduct a survey on commuting habits to grasp the current travel patterns of faculty and staff.

Introduce a ride-sharing scheme to decrease single-occupancy vehicle trips.

Mid-Term (2026-2033):

Offer incentives for eco-friendly commuting, such as subsidies for public transport or bike-sharing schemes.

Explore telecommuting possibilities and flexible work setups to cut down on commuting emissions.

Develop carpooling and vanpooling programs to facilitate shared commuting among staff.

Long-Term (2033-2040):

Work with local authorities to enhance public transportation options and infrastructure.

Involve the campus community in eco-friendly commuting initiatives and awareness drives.

Formulate a long-range strategy to enhance campus accessibility for sustainable commuting choices.

Scope 3 (Waste Management)
Short-Term (2023-2025)

Perform a waste assessment to pinpoint areas for waste minimization and recycling enhancement.

Decrease the use of disposable plastics and advocate for eco-friendly packaging across campus.

Forge alliances with recycling facilities and waste management firms.

Mid-Term (2026-2033)

Roll out waste segregation and recycling initiatives to divert waste away from landfills.

Promote the adoption of circular economy principles to curtail waste production.

Foster community-wide embrace of circular economy principles to diminish waste output.

Long-Term (2033-2040)

Attain zero waste-to-landfill status by deploying advanced waste management technologies.

Engage the campus community in waste reduction endeavors and responsible waste disposal methods.

Continuously monitor and enhance waste management tactics through data-driven insights.

3. GHG EMISSIONS REDUCTION STRATEGY

In line with our commitment to address climate change and promote sustainability, Azerbaijan State Oil and Industry University (ASOIU) has developed a comprehensive strategy aimed at reducing greenhouse gas (GHG) emissions. Our aim is to achieve carbon neutrality by 2040, in line with global climate action goals. To reach this target, we have devised three distinct phases: short-term, mid-term, and long-term plans. These plans outline specific actions and goals tailored to each phase, ensuring a systematic and practical approach toward a carbon-neutral future.

In the Short-Term GHG Reduction Plan (2023-2025), ASOIU will focus on immediate steps to begin our journey towards carbon neutrality. This includes conducting an energy audit of campus buildings to identify areas for improved energy efficiency, implementing energy-saving measures, exploring renewable energy options, and raising awareness among the campus community about responsible energy use. These efforts aim to achieve a 15% reduction in GHG emissions.

Moving forward to the Mid-Term GHG Reduction Plan (2026-2033), ASOIU will build on the achievements of the short-term phase and intensify our efforts. This involves further integrating renewable energy sources into our energy mix, exploring the electrification of heating systems, investing in heat pump technologies, and adopting green building standards. The goal of these mid-term initiatives is to achieve a 50% reduction in GHG emissions.

In the Long-Term GHG Reduction Plan (2033-2040), ASOIU will take transformative measures to solidify our path to carbon neutrality. This includes implementing carbon-neutral heating and cooling systems across campus buildings, aiming for a complete elimination of GHG emissions. We will invest in energy storage technologies, collaborate with the local energy grid, and continuously monitor and optimize energy usage. The long-term initiatives aim to foster a culture of sustainability, engaging the entire campus community in climate action and encouraging responsibility and innovation.

4. BUDGET AND FUNDING

Investing in a Sustainable Future

To reach its target of carbon neutrality by 2040, ASOIU plans to invest in various projects encompassing energy efficiency, the adoption of renewable energy, sustainable transportation, waste management, and educational out-

reach. The table below outlines the estimated financial commitments needed for each aspect of the Climate Action Plan:

The projected budget serves as a basis for ASOIU's financial strategy; however, it's important to acknowledge that these numbers may change due to evolving technology, market fluctuations, and new possibilities for cost efficiency.

ASOIU acknowledges that significant financial resources are necessary to achieve carbon neutrality and emphasizes the importance of a collaborative approach. The university plans to explore various funding avenues and establish strategic partnerships to facilitate the implementation of its Climate Action Plan.

Initiative	Scope	Estimated Cost (USD)
Energy Efficiency Upgrades	Scope 1	700.000 $
Renewable Energy Integration	Scope 2	1.000.000 $
Sustainable Procurement	Scope 3	245.000 $
Virtual Collaboration Tools	Scope 3	80.000 $
Waste-to-Energy Technologies	Scope 3	575.000 $
Educational Outreach Programs	All Scopes	185.000 $
Total Estimated Budget		2.785.000 $

Internal Funding: ASOIU intends to allocate a portion of its own resources towards supporting the Climate Action Plan. This commitment to sustainability could be integrated into the annual budget, ensuring steady progress towards the defined objectives.

Grants and Funding Programs: ASOIU will actively pursue grants and funding opportunities offered by international organizations, government

agencies, and foundations that promote sustainability initiatives. These grants can expedite the execution of specific projects and enhance ASOIU's efforts in reducing emissions.

Industry Partnerships: Collaboration with private sector entities can be mutually beneficial. ASOIU aims to form partnerships with energy companies, technology providers, and waste management firms to access innovative solutions, expertise, and potential co-financing opportunities.

Public-Private Partnerships (PPPs): ASOIU recognizes the potential of PPPs as a valuable mechanism for funding large-scale sustainable infrastructure projects. The university may explore PPPs with local authorities and private companies to develop renewable energy projects or sustainable transportation solutions.

Alumni and Donor Contributions: ASOIU expects support from its dedicated alumni and donors who may be interested in contributing to the university's sustainability initiatives. Fundraising campaigns and donor engagement strategies will be employed to attract financial backing for specific projects.

Carbon Offsetting and Trading: ASOIU will investigate carbon offsetting opportunities, such as backing renewable energy projects or investing in carbon credits to offset its remaining emissions.

5. CONCLUSION

The Climate Action Plan of Azerbaijan State Oil and Industry University (ASOIU) demonstrates a comprehensive commitment to sustainability and climate action. The plan provides a comprehensive approach to minimize greenhouse gas emissions across all three scopes and outlines a framework for ASOIU's transition to a carbon-neutral institution by 2040.

ASOIU aims to pioneer sustainable practices in higher education, promoting a greener and more resilient future for both the university community and society.

ASOIU's Climate Action Plan is based on an ambitious vision: to establish a sustainable and carbon-neutral campus community that serves as an example of environmental responsibility.

ASOIU acknowledges that attaining carbon neutrality requires active engagement from all stakeholders. Collaboration with students, teachers, staff, local communities, business partners, and worldwide allies enhances ASOIU's approach to sustainability. The institution enables its community to make significant change via inclusive collaborations and information exchange, establishing a culture of climate awareness and collective action.

ASOIU prepares for climate change consequences by proactively assess-

ing risks and developing effective adaption measures. ASOIU strives to develop resilience against extreme weather and climate-related concerns by improving infrastructure, water management, renewable energy adoption, and health and safety. This method strengthens the university's ability to adapt to a changing atmosphere while maintaining its instructional goal.

ASOIU's Climate Action Plan emphasizes investing in innovative technology and sustainable practices. Integrating renewable energy, energy-efficient infrastructure, and sustainable procurement decreases carbon emissions and promotes innovation, leading to a greener and more affluent future.

ASOIU prioritizes openness and accountability along its sustainable journey. UNEC regularly monitors emissions data and key performance indicators (KPIs) to assess progress and identify areas for improvement, ultimately leading to improved environmental performance.

ASOIU understands that achieving carbon neutrality involves enormous financial resources and strategic alliances. Identifying possible financing sources, such as grants, industrial collaborations, and green investments, helps ASOIU successfully implement its sustainability programs. The European Commission award for the REFRESH project demonstrates the university's ability to foster international connections and advance sustainable practices.

ASOIU, a prominent higher education institution, understands its responsibility in developing future leaders. Climate-resilient curricula and research projects prepare graduates to address global issues and promote sustainable development.

In conclusion, Azerbaijan State Oil and Industry University (ASOIU) remains committed to sustainability and climate action. The Climate Action Plan aims to achieve a sustainable and carbon-neutral future, highlighting ASOIU's commitment to environmental stewardship and global climate leadership. ASOIU's revolutionary path inspires collaboration across higher education institutions to combat climate change and create a more sustainable future. ASOIU aims to leave a positive environmental legacy via collaboration with its community and partners, helping current and future generations to prosper in a resilient and sustainable future.