

GREENHOUSE GAS EMISSIONS REPORT for 2024–2025

Abai University



First and foremost

This report has been prepared to assess and analyze greenhouse gas (GHG) emissions associated with the university's activities for the period 2024–2025.

The document has been developed in accordance with the international greenhouse gas accounting methodology (GHG Protocol) and reflects the key sources of emissions, their structure, and directions for reduction.

The report serves as a tool for informed decision-making in the field of sustainable development and environmental responsibility.



STRATEGIC GOAL

The university follows a long-term environmental strategy aimed at reducing its impact on the environment.

The key objective is to achieve carbon neutrality by 2040.

This goal involves the consistent reduction of greenhouse gas emissions, improvement of energy efficiency, and the implementation of sustainable practices across all areas of activity.



Scope 1 – Direct Emissions



They include emissions from sources that are under the direct control of the university.

Operation of official (university-owned) vehicles.



Scope 2 – Indirect Energy Emissions



They include emissions associated with the consumption of purchased energy.

ELECTRICITY
HEAT ENERGY AND STEAM



Scope 3 – Other Indirect Emissions



They cover emissions resulting from related (supporting) activities:

BUSINESS TRIPS OF STAFF
TRAVEL OF STUDENTS AND EMPLOYEES
TRANSPORTATION AND LOGISTICS
WASTE GENERATION



METHODOLOGY FOR CALCULATION

The calculation of greenhouse gas emissions is based on the following principles:

Completeness

Ensuring the inclusion of all significant emission sources within the established boundaries.



Consistency

The consistent accounting of all significant emission sources within the established boundaries.



Transparency

Disclosure of the methodologies, data sources, and assumptions used in the calculation of greenhouse gas emissions.



METHODOLOGY FOR CALCULATION

The calculation of greenhouse gas emissions is based on the following principles:

Accuracy

Minimization of uncertainties and errors.



Relevance

Ensuring that the data reflects current operational conditions and activities.



EMISSIONS CALCULATION (tCO₂e)

Scope 1	85.45	0.55%
Mobile Sources	85.45	

INPUT DATA (per year)

Gasoline AI-92: 27,097 L

Gasoline AI-95: 3,722 L

Diesel fuel: 5,320 L

Emission factors:

Gasoline: 2.31 kg CO₂ per liter

Diesel: 2.68 kg CO₂ per liter

CALCULATION RESULTS

AI-92 → 62.60 tCO₂e

AI-95 → 8.60 tCO₂e

Diesel → 14.25 tCO₂e

Total Scope 1 emissions:
85.45 tCO₂e



EMISSIONS CALCULATION (tCO₂e)

Scope 2	2701	18.56%
Purchased Electricity	1 022	
Heat / Steam	1 679	

INPUT DATA (annual)

- Electricity: 1,135,847 kWh/year
- Heat energy: 8,394.396 Gcal/year

Emission factors

- Electricity: 0.9 kg CO₂e/kWh
- Heat energy: 0.2 t CO₂e/Gcal



EMISSIONS CALCULATION (tCO₂e)

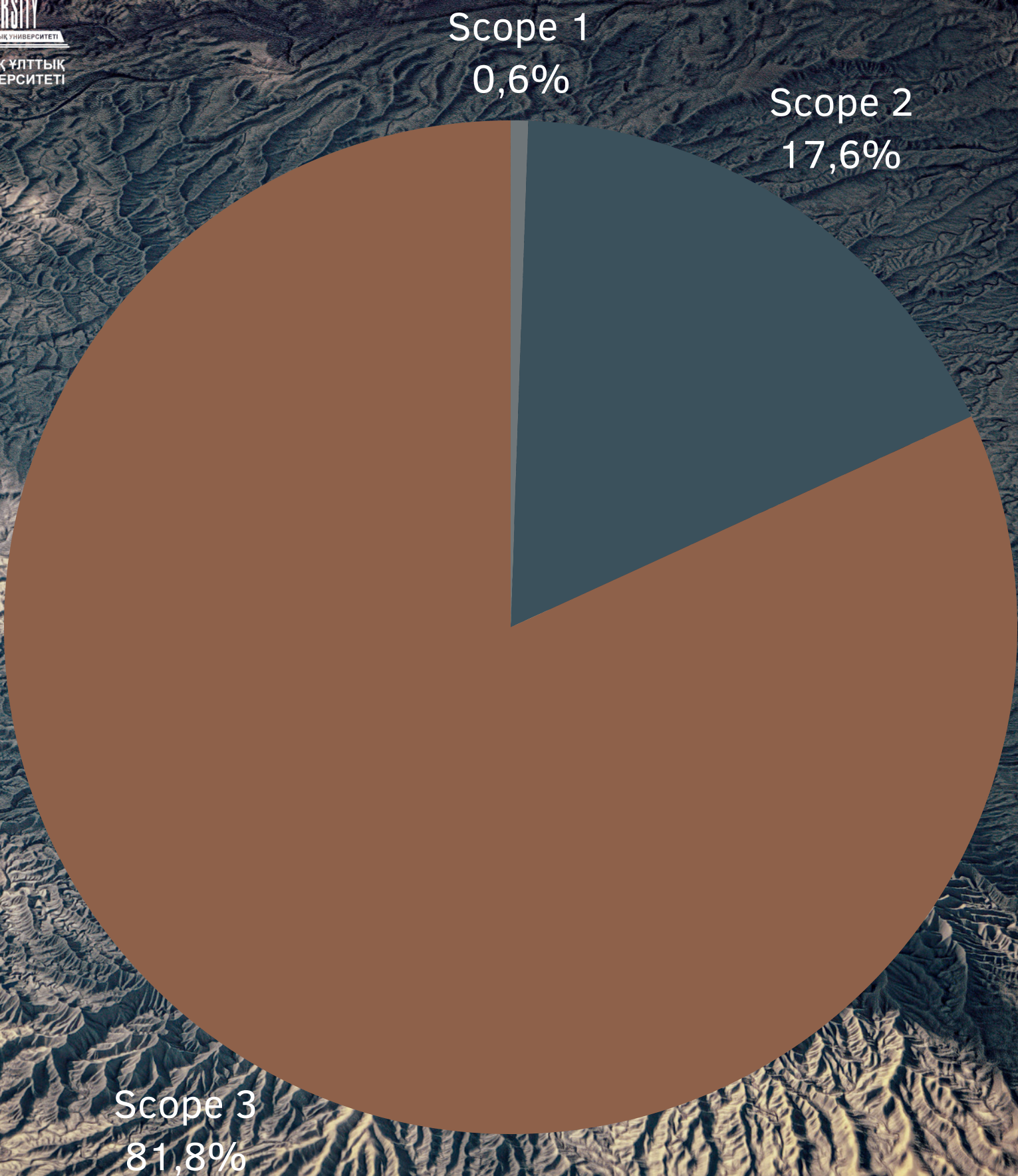
Scope 3	12 550	81%
Business trips	3400	
Commuting of students and employees	6850	
Delivery and transportation of goods and services	1500	
Waste generation, treatment, and disposal	800	





Scope 1	85,45	0.56%
Scope 2	2701	17.62%
Scope 3	12 550	81.82%





Scope 1
0,6%

Scope 2
17,6%

Scope 3
81,8%

GREENHOUSE GAS EMISSIONS DISTRIBUTION 🔍

The analysis of the emission structure shows that 81.82% of greenhouse gas emissions belong to Scope 3, making it the dominant source of the university's carbon footprint.

This is explained by the fact that the majority of emissions are associated with indirect sources, primarily the use of motor vehicles, including private transport, predominantly powered by gasoline fuel, as well as transportation and waste management activities.

The share of Scope 2 accounts for 17.62% of total emissions. This indicator is linked to the consumption of purchased electricity and heat energy supplied from external sources through centralized urban infrastructure. At the same time, the university campuses do not operate independent heat or electricity generation systems, which limits direct control over emissions in this category.

GREENHOUSE GAS EMISSIONS DISTRIBUTION

Scope 1 accounts for only 0.56% of total emissions, which indicates a negligible contribution from direct emissions associated with owned stationary sources and equipment.

Thus, the vast majority of greenhouse gas emissions are attributed to indirect sources, primarily related to transportation activities and supply chains (Scope 3).

PLANS FOR EMISSION REDUCTION

In this regard, Abai University is implementing a set of measures aimed at reducing its overall carbon footprint, including the introduction of separate waste collection systems, reduction of waste generation, digitalization of processes to minimize paper-based document flow, and enhancement of environmental awareness among staff and students. These measures collectively ensure a systematic approach to reducing greenhouse gas emissions and are aligned with the principles of sustainable development.