



Report on Total Scope 1 and Scope 2 Carbon Emissions

Tishk International University (TIU)

Academic Year 2024–2025

1. Introduction

This report presents a comprehensive assessment of the total Scope 1 (direct) and Scope 2 (indirect) greenhouse gas (GHG) emissions generated from campus operations at Tishk International University (TIU) during the academic year 2024–2025. The assessment is conducted in alignment with the GHG Protocol Corporate Standard, which provides internationally recognized guidelines for measuring and managing emissions.

The purpose of this report is to quantify TIU's carbon footprint related to energy use, support sustainability planning, and contribute to the university's commitment to environmental responsibility and climate action.

2. Scope Definition

- **Scope 1 (Direct Emissions):**
Emissions resulting from sources owned or controlled by the university. At TIU, this includes:
 - Fuel combustion from diesel generators
 - Gasoline consumption for university-owned vehicles
 - Natural gas or LPG use (if applicable) for heating or laboratory operations
- **Scope 2 (Indirect Emissions):**
Emissions associated with the generation of purchased electricity consumed by the university.

3. Methodology

The emissions calculation followed a structured methodology based on the GHG Protocol Corporate Standard, consisting of the following steps:

1. **Data Collection:**
 - Fuel consumption data (diesel, gasoline, gas) were collected from operational logs and procurement records.
 - Electricity consumption data were obtained from utility bills and meter readings across all campus facilities.
2. Standard emission factors were applied to convert activity data into carbon dioxide equivalent (CO₂e). These factors reflect the amount of GHG emissions per unit of fuel consumed or electricity used.
3. All emissions were converted into a common unit—**metric tons of CO₂ equivalent (tCO₂e)**—to ensure comparability and aggregation.
4. Emissions from all sources were aggregated and reviewed for consistency and accuracy by the responsible units.

4. Organizational Responsibility

The data collection, calculation, and reporting processes were managed by the Maintenance & Infrastructure Unit, in close coordination with the Health & Safety Committee. These units ensured:

- Accurate tracking of energy consumption
- Proper application of emission factors
- Compliance with international reporting standards

5. Results

The total combined emissions from Scope 1 and Scope 2 sources for the academic year 2024–2025 are:

- **Total Emissions: 385.92 tCO₂e**

This figure represents the overall carbon footprint of TIU's campus operations related to fuel use and electricity consumption during the reporting period.

6. Analysis and Interpretation

The reported emissions indicate a moderate carbon footprint typical of higher education institutions with:

- Dependence on diesel generators (common in the region due to grid instability)
- Significant electricity demand for academic buildings, laboratories, and administrative facilities

Scope 1 emissions are primarily driven by on-site fuel combustion, while Scope 2 emissions reflect the carbon intensity of the regional electricity grid.

7. Recommendations for Improvement

To reduce future emissions and enhance sustainability performance, the following actions are recommended:

- To upgrade lighting systems to LED, improve insulation, and optimize HVAC operations.
- To install solar photovoltaic systems to reduce reliance on grid electricity and diesel generators.
- Transition to more fuel-efficient or hybrid vehicles and reduce generator usage where possible.
- To implement digital energy monitoring systems for real-time tracking and improved accuracy.
- To promote energy-saving practices among staff and students.