



Report on Total Energy Consumption (kWh/year)

Tishk International University (TIU)

Academic Year 2024–2025

1. Introduction

This report presents a detailed assessment of total energy consumption at Tishk International University (TIU) for the academic year 2024–2025. Energy use is a key operational and sustainability indicator, directly linked to institutional performance, operational efficiency, and environmental impact. Monitoring and managing energy consumption enables the university to optimize resource utilization, reduce costs, and contribute to climate action goals.

2. Scope and Definition

The reported energy consumption includes all electricity used across the university campus, covering:

- Academic Buildings: Classrooms, lecture halls, laboratories, and research facilities
- Administrative Offices: Offices and service departments
- Student Facilities: Libraries, cafeterias, and common areas
- Technical and Support Facilities: IT infrastructure, maintenance units, and auxiliary services

The measurement reflects the total annual electricity consumption, expressed in kilowatt-hours per year (kWh/year).

3. Methodology

The calculation of total energy consumption was conducted in accordance with a structured and reliable methodology:

1. Data Collection:

- Electricity consumption data were collected from **monthly meter readings** across all campus buildings.
- Utility bills were used to validate recorded consumption and ensure completeness of data.

2. Aggregation:

- Monthly electricity consumption values were aggregated to calculate the total annual energy usage.

3. Data Verification:

- Cross-checking was performed between meter readings and utility invoices to ensure data accuracy.
- Any irregularities or consumption spikes were reviewed and attributed to specific operational causes (e.g., seasonal cooling demand, equipment usage).

4. Standardization:

- All values were reported in kilowatt-hours (kWh), ensuring consistency with international energy reporting standards.

4. Organizational Responsibility

The Maintenance & Infrastructure Unit is responsible for:

- Monitoring and recording electricity consumption across campus
- Maintaining metering systems and ensuring accurate data collection
- Coordinating with utility providers for billing and verification
- Supporting energy efficiency initiatives and infrastructure improvements

This centralized responsibility ensures consistency and accountability in energy management practices.

5. Results

The total energy consumption for TIU during the academic year 2024–2025 is:

- **Total Energy Consumption: 1,131,068 kWh/year**

This figure represents the cumulative electricity usage across all university facilities during the reporting period.

6. Analysis and Interpretation

The recorded energy consumption reflects the scale and intensity of campus operations. Key insights include:

- Laboratories, HVAC (heating, ventilation, and air conditioning) systems, and IT infrastructure are typically the largest contributors to electricity use.
- Energy demand is expected to increase during warmer months due to higher cooling requirements, which significantly impacts overall consumption.
- Continuous academic and administrative activities, along with extended facility usage hours, contribute to sustained energy demand.

From a sustainability perspective, energy consumption is closely linked to carbon emissions (Scope 2) and represents a critical area for efficiency improvements and environmental impact reduction.

7. Recommendations for Improvement

To enhance energy efficiency and reduce overall consumption, the following measures are recommended:

- To replace conventional lighting with LED systems and upgrade to energy-efficient equipment and appliances.
- To implement smart climate control systems and regular maintenance to improve efficiency.
- To install solar photovoltaic systems to offset grid electricity consumption.
- To deploy real-time energy monitoring and management systems to track usage patterns and identify inefficiencies.
- To encourage energy-saving practices among students and staff, such as switching off unused equipment.