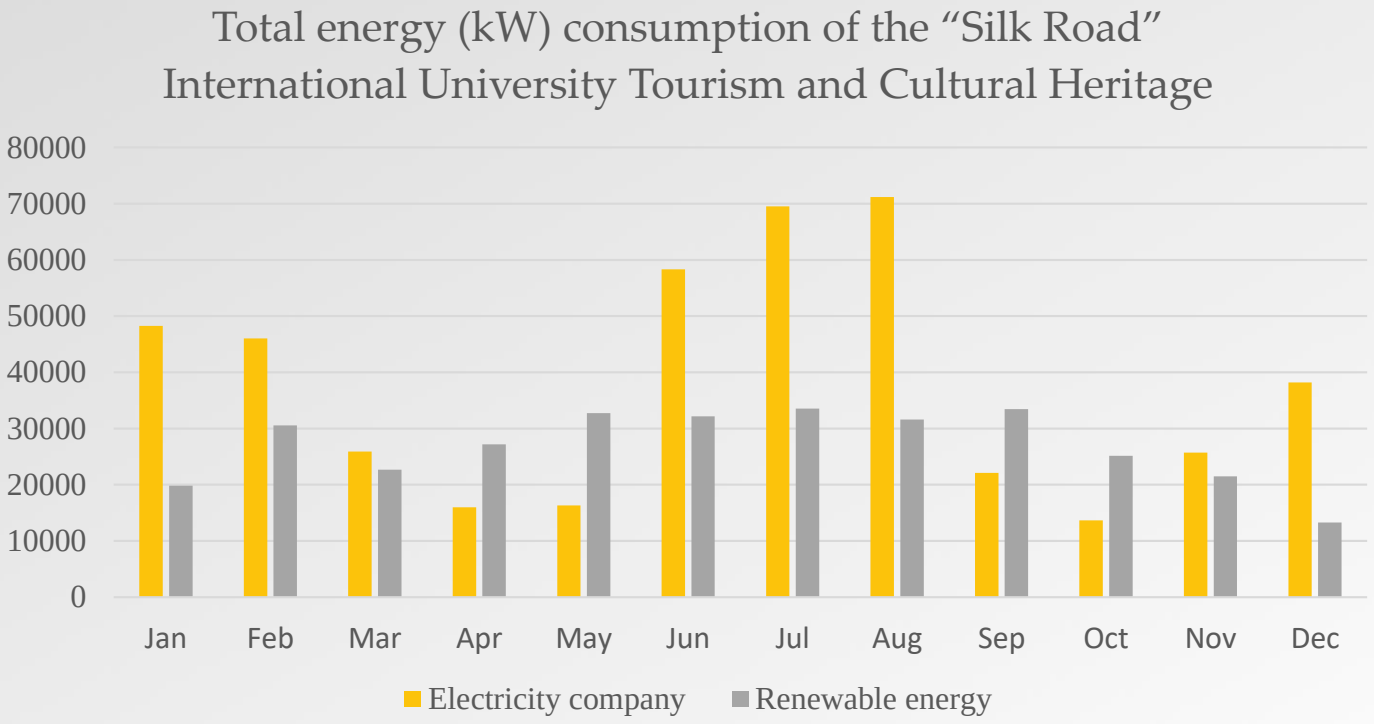
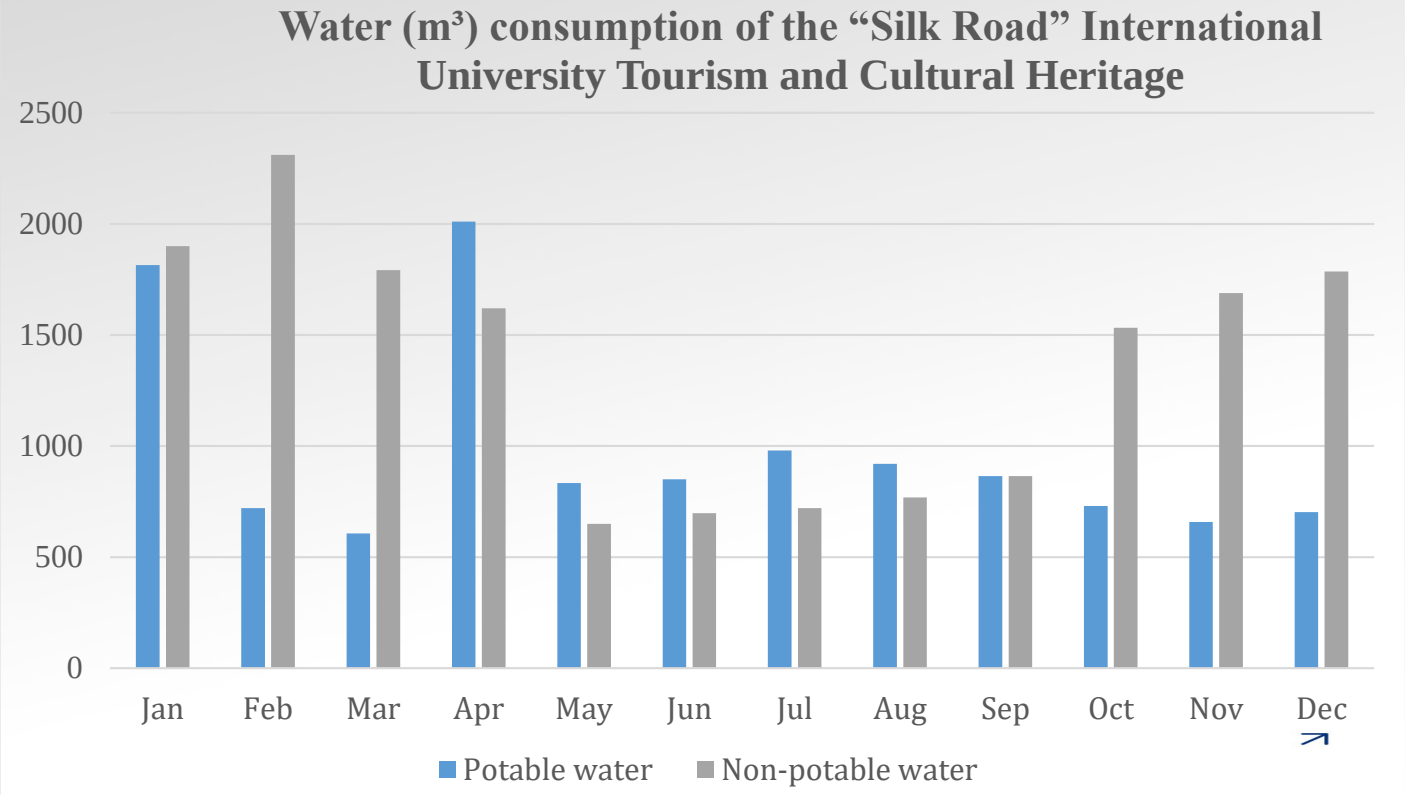
Energy consumption



An analysis of electricity consumption and energy sourcing at the **"Silk Road" International University of Tourism and Cultural Heritage** for the year **2025** reveals notable progress in the diversification of energy supply. The total annual electricity consumption amounted to **774,728 kWh**, of which **451,140 kWh** was supplied through the national power grid. At the same time, **323,590 kWh** of electricity was generated by the on-campus solar photovoltaic system and utilized to meet internal energy demands.

These results indicate that renewable energy sources contributed approximately **41.8%** of the university's total electricity consumption. This share reflects a significant advancement in reducing dependence on conventional energy sources and strengthening the institution's commitment to sustainable energy practices. A month-by-month assessment demonstrates clear seasonal variations in energy production and consumption. During the summer period, particularly from June to August, solar energy generation reached its peak, substantially reducing reliance on grid-supplied electricity. In contrast, during the winter months (January, February, and December), lower solar irradiance resulted in increased dependence on external electricity supply. Transitional seasons, including spring and autumn, exhibited a more balanced distribution between renewable and conventional energy sources. Furthermore, the university **exported 121,905 kWh** of surplus electricity to the national grid over the course of the year. This outcome highlights the effectiveness of the implemented energy management strategy, which not only ensures self-sufficiency but also contributes to the broader energy system by reintegrating excess renewable energy. Overall, the integration of the solar photovoltaic system has enhanced energy reliability, improved efficiency, and supported the reduction of carbon emissions. These achievements are aligned with the objectives of Sustainable Development Goals, particularly **SDG 7** (Affordable and Clean Energy), **SDG 9** (Industry, Innovation and Infrastructure), and **SDG 13** (Climate Action), reinforcing the university's role in promoting sustainable and climate-resilient energy solutions.

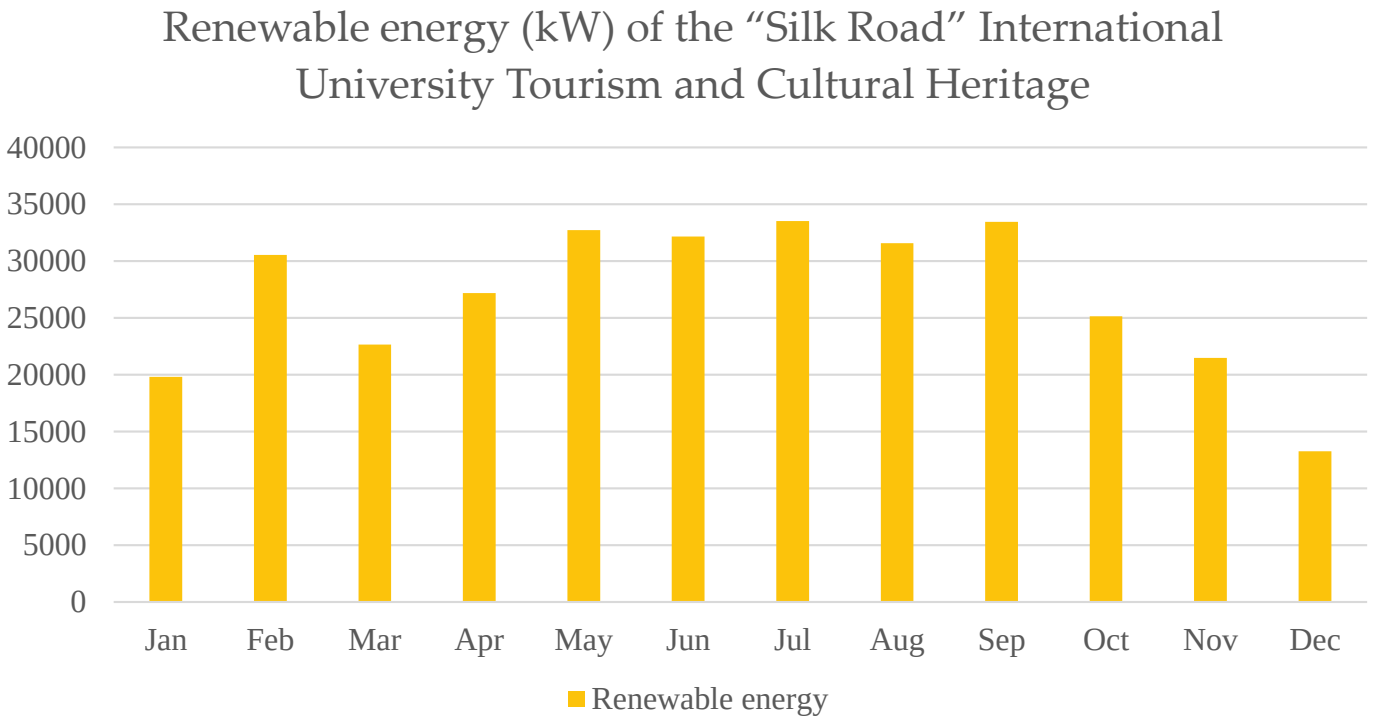
Water consumption



In 2025, the **International University of Tourism and Cultural Heritage “Silk Road”** identified the rational and sustainable use of water resources as a fundamental priority within its environmental sustainability strategy. During the reporting period, the total volume of water consumed amounted to **28,020** cubic meters, comprising**11,689** cubic meters of potable water and **16,331** cubic meters of non-potable water.

An analysis of the monthly dynamics presented in the chart demonstrates noticeable fluctuations in the consumption of potable water throughout the year. The highest level of potable water usage is recorded in **April (approximately 2,000 m³)**, which corresponds to a period of increased academic activity and the onset of warmer weather. The lowest consumption occurs in **March** and **November**, with values ranging between **600** and **700 m³**. In contrast, non-potable water consumption remains relatively stable, though with distinct peaks in certain months. The most significant increase is observed in **February**, when usage exceeds **2,300 m³**, while the lowest levels are seen between **May** and **August** (**around 600–900 m³**). This decline during the summer period may be attributed to optimized irrigation schedules and reduced operational load on university facilities. During the second half of the year, particularly in October through December, non-potable water consumption rises once again. This trend is typically associated with seasonal landscaping activities, grounds maintenance, and preparation of outdoor areas for the winter season. Overall, the chart illustrates clear seasonal patterns in water use, highlighting that non-potable water constitutes the larger share of total consumption. This indicates that the university’s policy to prioritize potable water savings—reserving it for essential infrastructure and drinking purposes—has been effectively implemented in practice.

Renewable energy



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Analysis of Electricity Consumption and Energy Sources (**2025**)The analysis of electricity consumption at the **“Silk Road” International University of Tourism and Cultural Heritage** in 2025 shows strong progress in energy diversification and sustainability. The total annual electricity consumption amounted to **774,728 kWh**. Of this, **451,140 kWh** was supplied through the national power grid, while **323,590 kWh** was generated by the university’s on-campus solar photovoltaic (PV) system and used for internal needs. The solar energy system has a total installed capacity of **320 kW** and includes **589** solar panels and **8 inverters**. These **589 panels** are responsible for capturing solar energy, while the **8 inverters** convert it into usable electricity, ensuring efficient system performance. The graph shows that renewable energy production changes during the year. It increases from winter to summer and reaches its peak between May and September. The highest production is observed in July and September, while the lowest occurs in December and January due to shorter days and lower sunlight levels. Overall, the solar PV system provides about **42%** of the total electricity consumption. This indicates a significant step toward sustainability, lower energy costs, and reduced dependence on external electricity sources.