



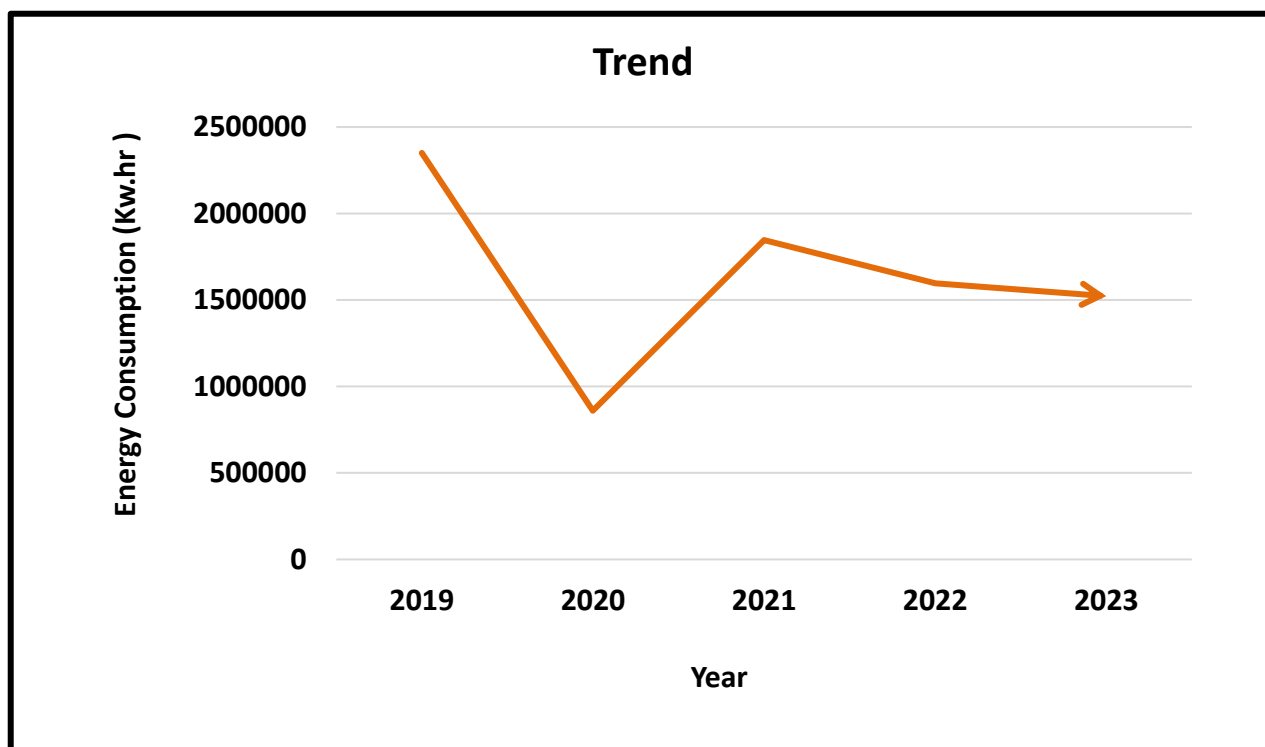
University : Northern Technical University
Country : Iraq
Web Address : <https://www.ntu.edu.iq>

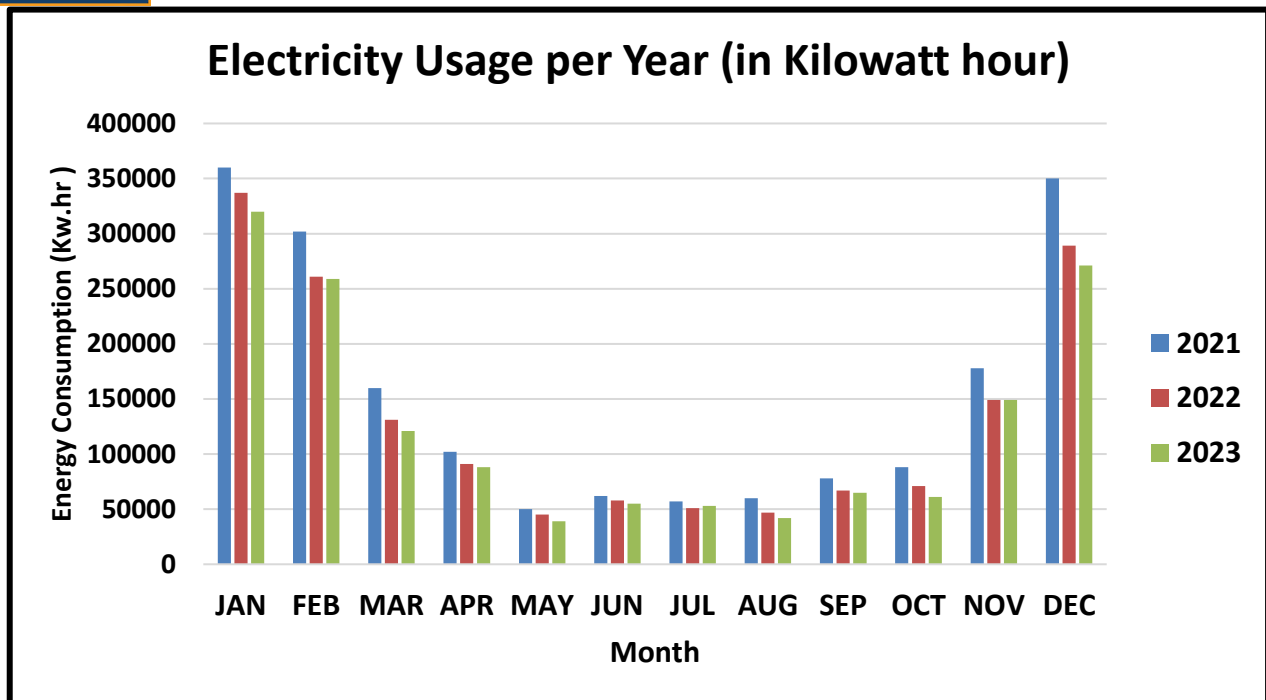
SDG 13.2 Low Carbon Energy Use

SDG13.2.1 Does your university as a body measure the amount of low carbon energy used across the university?

Total electricity usage at Northern Technical University (NTU) during the year in (kWh)

At Northern Technical University campuses, electricity plays a vital role in supporting various operations, including lighting, cooling, heating, and operating laboratory equipment. The analysis reveals trends in demand for electrical energy throughout 2019, showing a clear linear increase in electricity consumption. With the emergence of Covid-19 and the suspension of work as directed by the Iraqi Ministry of Higher Education and Scientific Research, the rate of electricity consumption decreased significantly, as shown in the figure below. At the beginning of 2021, universities began to return to work and students began to enroll. The table also shows an increase in energy consumption rates, but the Northern Technical University began using rationalization and awareness campaigns to reduce energy consumption and began using alternative energies, starting with solar energy and then wind energy. This actually led to a decrease in consumption rates and increased reliance on alternative energies, despite the increase in student enrollment numbers and the increased use of laboratories and classrooms.



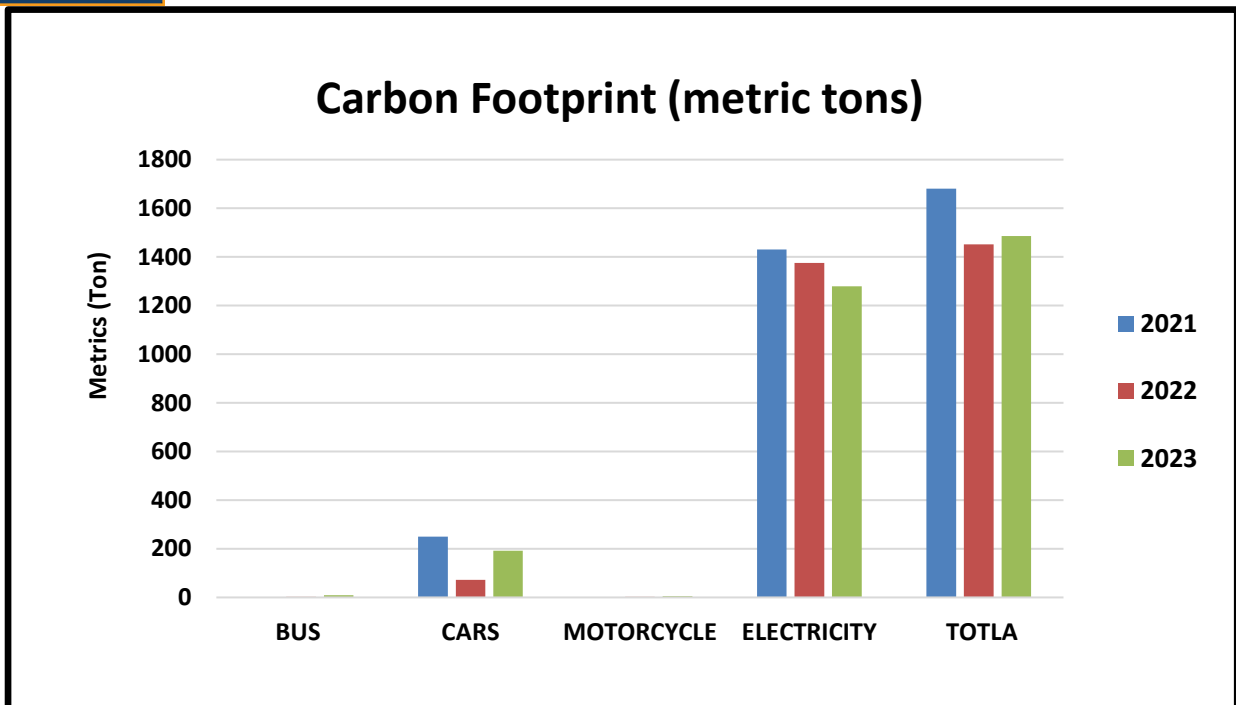


Monthly electricity consumption for years: (2021-2023)

The figure above illustrates the electricity consumption rates at Northern Technical University for the months of the year across the years 2021, 2022, and 2023. It shows a noticeable decline in consumption due to the university's implementation of a rationing and reduction policy, awareness campaigns, and the adoption of alternative energy sources such as solar and wind energy. These sources have been effectively combined to create a hybrid energy system.

Carbon Emission at Northern Technical University (NTU)

Carbon emissions resulting from our activities represent a substantial environmental impact, and we are committed to ambitious targets for reducing these emissions to minimize our ecological footprint. Establishing a sustainable campus is vital, as it serves as a tangible model of environmental responsibility. This approach extends not only to our operational practices but also to how we integrate sustainability principles into our teaching and learning environments.



The figure above illustrates carbon dioxide emissions from four distinct sources—buses, cars, motorcycles, and electricity—over the period from 2021 to 2023.

Regarding buses, their impact on CO₂ emissions has been relatively low due to limited usage on campus. In contrast, CO₂ emissions from cars showed a noticeable reduction in 2022 compared to 2021, followed by an increase in 2023. This fluctuation occurred as a result of a policy allowing greater car usage at Northern Technical University campuses due to an increase in the number of students and staff.

The contribution of motorcycles to atmospheric CO₂ concentrations remained relatively minor throughout the period. However, CO₂ emissions from electricity exhibited the highest rates. In 2021, the CO₂ concentration rates were significantly higher compared to 2022. In 2023, there was a slight increase in CO₂ emissions as the university introduced new programs across its colleges and institutes in various fields such as medicine, engineering, and agriculture. As student enrollment grew due to these new programs, the demand for electrical energy increased to support the use of buildings and laboratories.