

BALIKESİR UNIVERSITY

Carbon Footprint Report 2023

Rooted Past, Strong Future



Campus Carbon Footprint Report

Balıkesir University (Çağış Campus) — 2023

UI GreenMetric — Energy and Climate Change (EC) Category, Indicator 2.11

Total Carbon Footprint (2023)

7,930.47 t CO₂

Per capita: 0.25 t CO₂ (31,418 people)

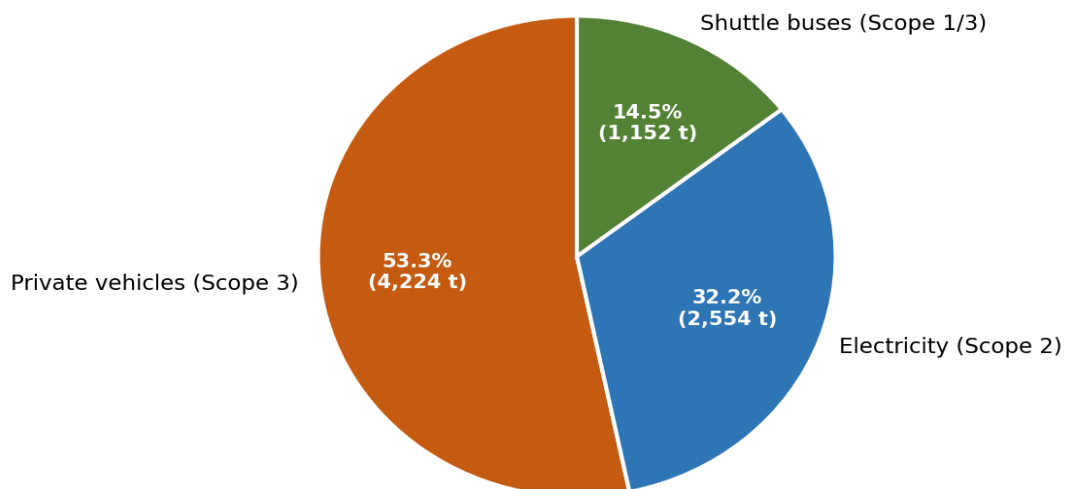
1. Executive Summary

This report presents the 2023 carbon footprint of Balıkesir University, Çağış Campus. The total carbon footprint is calculated at 7,930.47 metric tons of CO₂. The calculation follows the UI GreenMetric “Option 2” methodology and covers campus electricity consumption together with transport emissions from shuttle buses and private vehicles entering the campus. The per-capita carbon footprint is 0.25 t CO₂ across a campus population of 31,418 (1,941 staff and 29,477 students).

The largest emission source is private vehicles entering the campus at 53.3%, followed by purchased electricity at 32.2% and shuttle buses at 14.5%. This report is prepared to establish a database for defining carbon-reduction policies and identifying key intervention points.

2. Breakdown of Emission Sources

**Balıkesir University (Cagis Campus)
Breakdown of Emission Sources — 2023
Total: 7,930.47 t CO₂**



Note: Motorcycle emissions reported as 0 t (included within the private-vehicle category).

3. Emission Calculation Table

Source	Activity Data	CO ₂ (t)	Share
Electricity (Scope 2)	5,740,382 kWh × 0.445	2,554.47	32.2%
Shuttle buses	50 buses × 48 trips × 20 km	1,152.00	14.5%
Private vehicles (Scope 3)	1,760 veh/day × 2 × 25 km	4,224.00	53.3%
Motorcycle	Included in private vehicles	0.00	0.0%
TOTAL		7,930.47	100%

Per-capita carbon footprint = 7,930.47 ÷ 31,418 = 0.25 t CO₂/person

4. Methodology and Emission Factors

4.1 Electricity

Electricity emissions were calculated using Türkiye's official national grid emission factor of 0.445 tCO₂-eq/MWh. This value is published by the Energy Efficiency and Environment Department (EVÇED) of the Republic of Türkiye Ministry of Energy and Natural Resources in the document “Türkiye Electricity Generation and Electricity Consumption Point Emission Factors Information Form”. The transmission-connected consumption-point value (0.445) was adopted because the campus is supplied through the transmission grid. Using the official national factor instead of the generic 0.84 coefficient in the UI GreenMetric example provides a more accurate, country-specific and verifiable basis for the Scope 2 electricity emissions. Annual campus electricity consumption in 2023 was 5,740,382 kWh, giving electricity-related emissions of 2,554.47 t CO₂.

4.2 Shuttle Buses

Shuttle-bus emissions (1,152.00 t) are based on 50 buses operating 48 trips per day over an average in-campus distance of 20 km, computed with the UI GreenMetric transport formula.

4.3 Private Vehicles

Private-vehicle emissions (4,224.00 t) are based on a daily average of 1,760 vehicles entering the campus, computed with the UI GreenMetric transport formula ($1,760 \times 2 \times 25 \text{ km} \times (240 \div 100) \times 0.02$). As entry records do not distinguish between cars, motorcycles, vans or pickups, all private vehicles are reported as a single combined category using the car emission coefficient; motorcycles are therefore not counted separately.

5. Scope Classification Note

- Electricity — Scope 2 (indirect emissions from purchased electricity).
- Shuttle buses — Scope 1 if the university operates its own fleet; Scope 3 if outsourced.
- Private vehicles and motorcycles — Scope 3 (commuting of staff, students and visitors).

Note: This reporting boundary is limited to campus electricity plus transport (shuttle buses and private vehicles). Natural gas used for campus heating (Scope 1) and other Scope 1/3 sources are not included in this calculation. The reporting methodology follows internationally accepted standards and is constrained to the available, accessible data, as stated in the methodology section.