# Energy and Climate Change CO2 Emission Report 2026

## ❖ Total Carbon Footprint (CO2 emission in the last 12 months, in metric tons)

### A) Scope 1 + Scope 2 (GHG Protocol)

**Scope 1**

**$CO_2$ (bus)**

$$= \frac{\text{number of shuttle bus in your university} \times \text{total trips for shuttle bus service each day} \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0{,}01$$

$$= \frac{0 \times 0 \times 1.4 \times 240}{100} \times 0{,}01$$

**= 0 metric tons (no buses inside campus)**

**$CO_2$ (cars)**

$$= \frac{\text{number of cars entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0{,}02$$

$$= \frac{200 \times 2 \times 1.4 \times 240}{100} \times 0{,}02$$

**26.88 metric tons**

**$CO_2$ (motorcycle)**

$$= \frac{\text{number of motorcycle entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0{,}01$$

$$= \frac{0 \times 0 \times 1.4 \times 240}{100} \times 0{,}01$$

**= 0 metric tons**

**Scope 2**

**$CO_2$ (electricity)**

$$= \frac{\text{electricity usage per year (kWh)}}{1000} \times 0{,}84$$

$$= \frac{1500000\ kWh}{1000} \times 0{,}84$$

**= 1260 metric tons**

**Scope 1 + Scope 2 (total)**

**= 1260+0+27+0**

**= 1287metric tons**

| Carbon footprint Scope 1+ Scope 2 = | 1287 Metric Tons |
|---|---|

### B) Scope 3 Emissions Calculation Table (GHG Protocol)

| Category | University Sources | Estimated Emissions (tons $CO_2e$/year) | Share of Total (%) |
|---|---|---|---|
| Purchased goods & services | IT equipment, food services, office supplies | 1,000 | 25% |
| Capital goods | Buildings, lab equipment (annualized) | 400 | 7% |
| Waste generated in operations | Landfill, recycling, compost | 600 | 10% |
| Business travel | Staff/student flights, conferences | 500 | 8% |
| Employee commuting | Staff travel to campus | 1,000 | 25% |
| Student commuting | Daily trips to campus | 1,300 | 22% |
| Other (investments, leased assets, franchises) | Financial holdings, outsourced services | 200 | 3% |
| Total Scope 3 Emissions | — | **4,600 tCO2 e** | 100% |

***Remarks: -No shuttle buses inside campus (not applicable) and no motorcycles available***
***-Number of Cars entering campus in 2026 has decreased due to policy restrictions and emission reduction programs.***

## ❖ Total Carbon Footprint on campus

*The organization's total annual carbon footprint is 5,887 metric tons $CO_2$ e, comprising 4,600 metric tons $CO_2$ e from Scope 3 emissions and 1,287 metric tons $CO_2$ e from Scope 1 and Scope 2 emissions.*
*Based on a total population of 6,183 full-time equivalent (FTE) staff and UG/G students, the per capita carbon footprint was calculated as follows:*

***Total emissions = 5,887 metric tons $CO_2$ e = 5,887,000 kg $CO_2$ e***

***Per capita carbon footprint = 5,887,000 kg $CO_2$ e ÷ 6,183 FTE = 952.1 kg $CO_2$ e per person per year.***

***This is equivalent to 0.952 metric tons $CO_2$ e per capita per year.***

## ❖ Total Energy Consumption on campus

***Total annual energy consumption = 1,500,000 kWh,***
***while renewable energy generation amounted =1,199,880 kWh.*** *(Solar Panel Systems are main Resource of Energy)*

***Renewable Energy Share (%) = (1,199,880 ÷ 1,500,000) × 100 = 79.99% about 80%***

## ❖ Jadara University's Innovative Programs for Energy & Climate Change & Scope Classification (2026)

| # | ICT System Name (Jadara IP) | Purpose / Function/Program | GHG Scope |
|---|---|---|---|
| 1 | CAC Management System | Smart air conditioning control via app; reduces energy use and improves air quality | Scope 2 |
| 2 | ICT System for Air Conditioning Monitoring | Centralized control and optimization of cooling systems | Scope 2 |
| 3 | ICT System for Heating Management | Replaces boilers with solar-powered electric heating | Scope 2 |
| 4 | ICT System for Energy Monitoring | Tracks electricity consumption across campus | Scope 2 |
| 5 | ICT System for Solar Energy Supply Management | Manages solar panel output and distribution | Scope 2 |
| 6 | ICT System for Carbon Footprint Tracking | Monitors Scope 1 (fleet), Scope 2 (energy), and Scope 3 (commuting, travel) emissions | Scope 1, 2, 3 |
| 7 | ICT System for Transportation Emission Evaluation | Assesses emissions from university fleet and commuting | Scope 1 & 3 |
| 8 | ICT System for Energy-Efficient Appliance Inventory | Tracks Energy Star-certified devices and Zero Client units | Scope 2 |
| 9 | ICT System for LED Lighting Efficiency | Monitors LED installations and energy savings | Scope 2 |

**Greenhouse gas emission reduction programs (next page)**

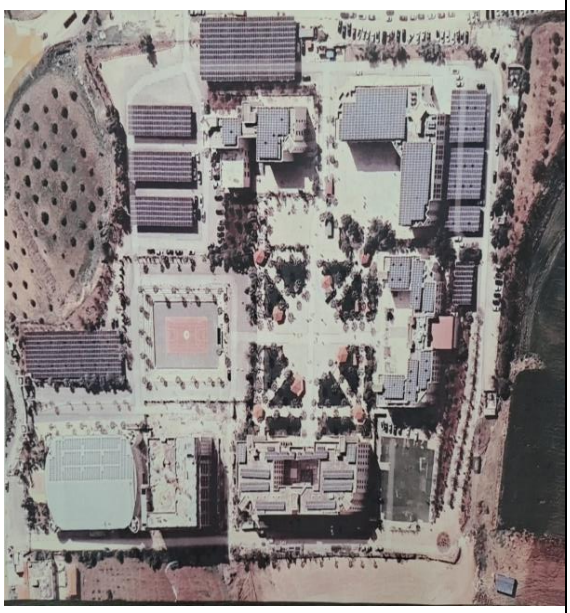
❖ **Greenhouse gas emission reduction program**



1. High parking fees at the Main Gate for non- staff(Jadara University, Jordan)



2. Carpool Initiative Between Staff Members (Jadara University, Jordan)



3. Renewable Energy (Jadara University)

**14 stations near Buildings D+A /10 Stations near Building B**



4. (24) Free Electrical Charging Stations for Zero-Emission Cars (Jadara University, Jordan)

**Description of Greenhouse gas emission reduction programs:**

1. **Car sharing (Carpool)** is commonly used between staff and are encouraged to do so through Staff Social Committee, which covers scope 3.

2. As per Jadara **Air Travel policy** at our university helps indirectly in decreasing gas emission in the environment by minimizing the number of travelers participating in conferences or meetings. We encourage virtual meetings and call conferences rather than physically have to commute or travel. Also, it helps in decreasing the expenses on travel and utilizes these funds in more sustainable practices like for research and sustainability efforts. This includes scope 3 too.

3. **Bus services are offered to students and staff for free ( no charge)** to encourage them to stop using their own cars or other types of cars like cabs, taxis scope 3 while converting **our buses fleet to electric vehicles** in the coming years/ scope 1.

4. University **charges high fees for temporary parking or specific access** for non-staff at the main gate they pay for a paid parking ticket to the security staff. Scope 3

5. **Solar Panels are installed 5 years ago in all parking areas and above all building roofs to** decrease use of electricity and produce (electricity generation) more than 80% of Campus need by that we eliminated & cancelled all boilers inside the campus. This covers scope 1 and Scope 2.

6. Jadara University offers **24 free electric vehicle charging stations on campus**, promoting sustainable transport and reducing emissions. This initiative contributes to **Scope 2** (electricity use) and **Scope 3** (commuting-related emissions).

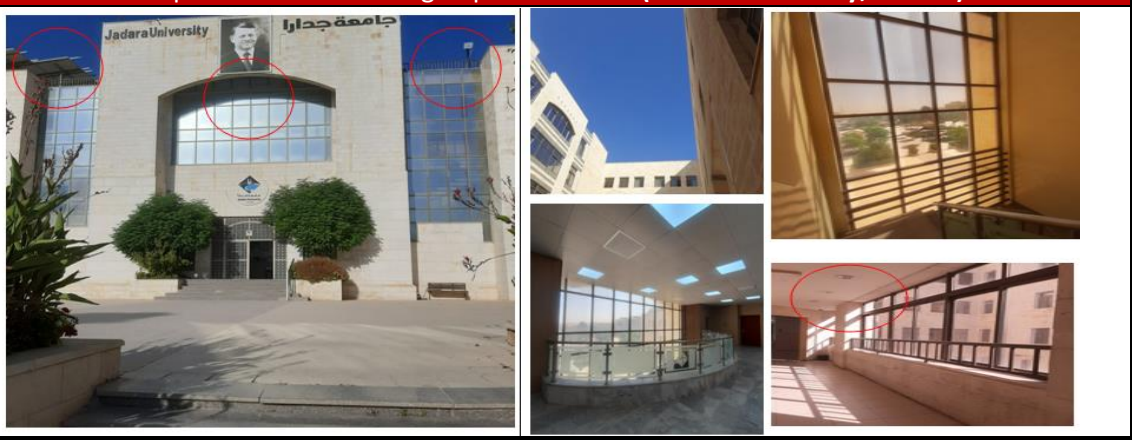
7. Please refer to our sustainability policy page 1, 2 and 3 / section 1 on the link below:

https://jadara.edu.jo/images/gmetric/SDG%20Policy%20-Jadara%20University%202023-2024.pdf

**Elements of Green Building Implementation (next page)**

## ❖ Elements of Green Building Implementation as Reflected in All Construction and Renovation Policies

Examples of Green Building Implementation **(Jadara University, Jordan)**




**Description:**
*Elements of green building implementation on Campus:*

**Eco-Conscious Design and Natural Cooling**

Buildings are designed to make full use of **natural lighting**, with large windows positioned in halls, corridors, entrances, and stairwells. **Natural cooling** is achieved through open internal layouts, skylights, and strategically placed windows that enhance airflow and reduce reliance on mechanical systems. Light-colored interior finishes and low ceiling designs help minimize the need for artificial lighting.

**Renewable Energy and Efficiency Measures**

Solar energy systems are installed on building rooftops and over selected parking areas, providing both electricity and passive shading. All lighting has been upgraded to energy-efficient LEDs, including indoor and outdoor areas. Solar-powered lights are used for nighttime illumination across the campus.

Heating and cooling systems now operate entirely on solar electricity, replacing conventional fuel-based systems to lower carbon emissions.

**Water Conservation and Reuse**

The campus uses an internal system that channels groundwater, rainwater, and treated wastewater for toilet flushing and landscape irrigation, helping to preserve freshwater resources.

**Sustainable Transportation and Emission Reduction**

Access for private vehicles is restricted, with reduced parking capacity and shaded parking designated for staff. The university provides free transportation for students and employees between campus and surrounding areas. Additionally, more staff members are shifting to electric vehicles to reduce emissions on campus.

**Smart Building and Energy Monitoring**

A building management system (BMI) oversees and regulates energy use, air conditioning, and indoor air quality across all buildings to ensure optimal performance and sustainability.

**Policy:** Please visit the link for Jadara University Sustainability Policy Page 1-2 (1.1) Energy Use section

https://jadara.edu.jo/images/gmetric/SDG%20Policy%20-Jadara%20University%202023-2024.pdf