UNIVERSITY OF WARITH AL-ANBIYAA

2023 GHG Emissions

Prepared by the
Sustainability Office

University of Warith Al-Anbiyaa GHG Report - 2023

Introduction:

The University of Warith Al-Anbiyaa is committed to environmental sustainability and recognizes the importance of reducing greenhouse gas (GHG) emissions and water consumption. This report provides a comprehensive overview of the university's efforts in these areas, including Scope 1, 2, and 3 emissions and water consumption details and steps we are taking to conserve water on our campus.

Greenhouse Gas Emissions:

The report follows the Greenhouse Gas Protocol corporate standard, categorizing emissions into Scopes 1, 2, and 3:

Scope 1: Direct emissions from university-owned sources (e.g., electricity generation)
Scope 2: Indirect emissions from purchased electricity, heat, or steam
Scope 3: Other indirect emissions from the university's activities (e.g., off-campus fuel combustion, business travel)

Scope 1 *emissions from gasoline (generators) = 240000 liters * 2.31 kg CO2/liter = 554400 kg CO2 (554 tonnes CO2)*

Scope 2 *emissions = 275036 kWh/year * 0.5 kg CO2/kWh = 137518 kg CO2 (137.518 tonnes CO2)*

For Scope 3

Estimated emissions from off-campus fuel combustion = 51272 liters * 2.31 kg CO2/liter = 118438.32 kg CO2 (118.43 tonnes CO2)

Estimated emissions from international flights= 25 flights * 1,500 km * 0.24 kg CO2/passenger-km = 9000 kg CO2 (9 tonnes CO2)

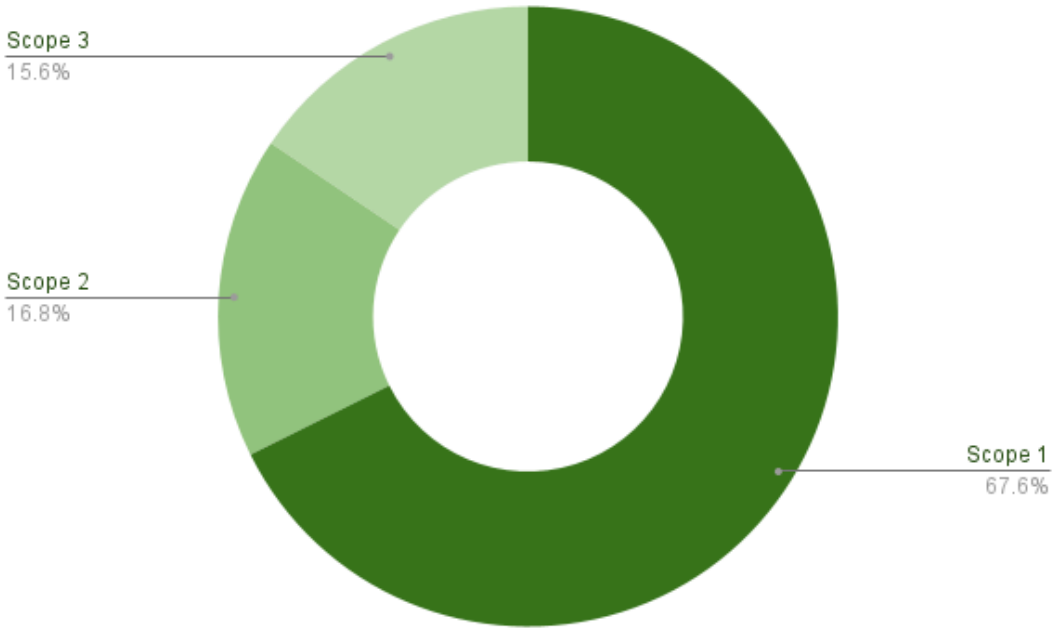
Scope 3 emissions = Estimated emissions from international flights (118.43) + Estimated emissions from off-campus fuel combustion (9)= 127.43 tonnes CO2

Table 1: University of Warith Al-Anbiyaa GHG Emissions Summary (2023)

Scope	Description	Emissions (tonnes CO2 equivalent)
Scope 1	Gasoline used for electricity generation	554
Scope 2	Purchased electricity	137.518
Scope 3	Off-campus fuel	118.43

Scope	Description	Emissions (tonnes CO2 equivalent)
	combustion	
Scope 3	International flights	9
Total	Sum of all	**818.948**

Donut chart showing percentage of emissions scope-wise



Water Consumption

The university is located in an arid region and implements water conservation practices to minimize its water footprint:

- **Water Treatment:** Two on-campus treatment plants process water for human consumption (drinking, toilets) and irrigation.
- **Estimated Consumption:** The university's annual water consumption is estimated to be between 201,248 and 202,050 cubic meters for a population of approximately 5,200.
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Table 2: Water Conservation Methods

Method	Description	Benefit
Low-flow fixtures	Utilizing low-flow or flush-less toilets	Reduces water usage for sanitation
Recycled water	Wastewater is treated and reused for irrigation	Minimizes reliance on freshwater
Smart irrigation systems	Sensor-based irrigation systems water plants based on soil moisture content	Optimizes water use

Method	Description	Benefit
Drought-resistant landscaping	Planting drought-resistant species reduces the need for frequent irrigation	Minimizes water consumption for landscaping
Permeable surfaces	Soil-based areas help absorb rainwater	Replenishes natural resources

Comparison and Future Goals:

- **GHG Emissions:** The university will benchmark its emissions against similar institutions and establish reduction targets aligned with its net-zero goals.
- **Water Consumption:** Future reports will include comparisons with regional water consumption benchmarks. Implementing water meter installation at key points is recommended for more accurate data collection and future breakdown by usage category.

Sustainability Strategies:

GHG Emissions Reduction:

- **Transition to Renewable Energy:** Invest in solar power systems and other renewable sources to reduce reliance on fossil fuels for electricity generation.

- **Energy Efficiency:** Implement energy-efficient technologies and practices to optimize energy consumption in buildings and facilities.
- **Sustainable Transportation:** Encourage the use of public transportation, bicycles, and electric vehicles on campus to reduce Scope 3 emissions.
- **Offsetting Initiatives:** Explore carbon offsetting projects (e.g., tree planting) to compensate for unavoidable emissions.

Water Conservation:

- **Rainwater Harvesting:** Investigate opportunities to collect and use rainwater for non-potable purposes (e.g., watering landscaping, flushing toilets).

Useful links:

1. https://sustainability.uowa.edu.iq/assets/uploads/1702113327_786%20Water%20Consumption,%20Year%202022%20(1).pdf
2. https://sustainability.uowa.edu.iq/assets/uploads/1696918096_water.pdf
3. https://sustainability.uowa.edu.iq/assets/uploads/1696918181_treans.pdf

4. https://sustainability.uowa.edu.iq/assets/uploads/1690785933_Sustainable%20Procurement%20Policy.pdf
5. https://sustainability.uowa.edu.iq/

Some of Our Green Efforts

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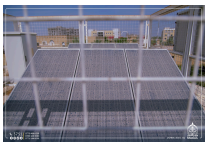
<td>  </td>
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