AMITY UNIVERSITY MAHARASHTRA

Established vide Maharashtra Act No.13 of 2014, of Government of Maharashtra, and recognized under Section 2 (f) of UGC Act 1956.

GHG Emissions Report

for

Amity University Mumbai

(July 2023 – June 2024)

Contents

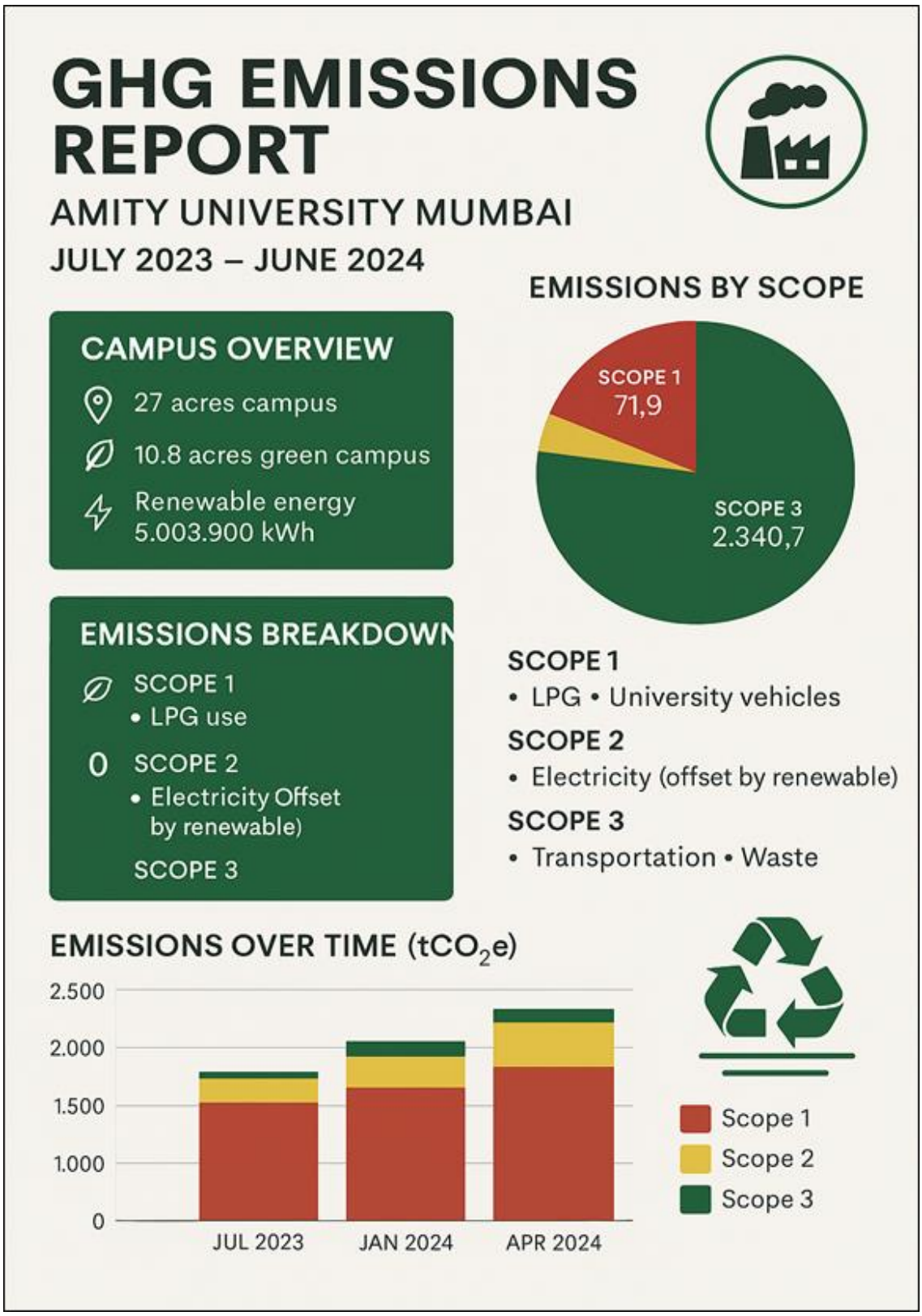
Aligned with the GHG Protocol framework covering Scopes 1, 2, and 3.

Institution: Amity University Mumbai

Reporting Period: July 1, 2023 – June 30, 2024

Framework: GHG Protocol – Scope 1, 2, and 3 Emissions

1. Infographics



2. Campus Overview

Parameter	Value
Campus Size	27 acres
Green Area	10.8 acres (~40%)
Electricity Used (Grid)	4,878,820 kWh
Renewable Energy Generated	5,003,900 kWh (Solar)
Water Consumption (Annual)	85,070 KL
Recycled/Reused Waste	243,090 kg

3. GHG Emissions Breakdown

3.1. Scope 1: Direct Emissions (Sources owned/controlled by the university)

1. University-Owned Vehicles

- **4 Petrol Cars** × 4,000 km/year
- **Emission Factor (petrol)**: 0.239 kg CO_2/km
  4 × 4,000 × 0.239 = 3,824 kg = 3.82 tCO_2e

2. LPG Used in Canteens

- **2,500 meals/day × 0.025 kg LPG/meal × 365 days**
  = 22,812.5 kg LPG
- **Emission Factor**: 2.983 kg CO_2/kg LPG
  22,812.5 × 2.983 = 68,050.6 kg = 68.05 tCO_2e

Scope 1 Total: ~71.87 tCO_2e

3.2 Scope 2: Indirect Emissions (Purchased Electricity)

- **Grid Electricity Used**: 4,878,820 kWh

- **Solar Electricity Generated**: 5,003,900 kWh
  Net Electricity from Grid: 0 kWh

Scope 2 Total: 0 tCO_2e (Net-zero due to solar offset)

3.3 Scope 3: Other Indirect Emissions (Contracted transport, commuting, waste, water)

1. Student Bus Transport (Contracted)

- **6 Diesel Buses + 6 CNG Buses**, 20 km/student/day
- Each bus ~50 students = 600 students
- **300 students on Diesel, 300 on CNG**
- **300 days/year**

Diesel Buses:
300 × 20 × 300 × 1.29 kg/km = 2,322,000 kg = 2,322 tCO_2e
CNG Buses:
300 × 20 × 300 × 0.055 kg/km = 99,000 kg = 99 tCO_2e

2. Student Motorbikes (Petrol)

- **120 students × 20 km/day × 300 days/year**
- **Emission Factor**: 0.089 kg CO_2/km
  120 × 20 × 300 × 0.089 = 64,080 kg = 64.08 tCO_2e

3. Electric Scooters (20 students)

- **Assume 0.015 kWh/km × 20 km × 300 days × 20 students = 1,800 kWh**
- Covered by renewables → **0 emissions**

4. Water Usage

- **85,070 KL/year**
- **Emission Factor**: ~0.344 kg CO_2/KL (India estimate)
  85,070 × 0.344 = 29,633.98 kg = 29.63 tCO_2e

5. Waste (Recycled/Managed)

- **243,090 kg** recycled → emissions **avoided**
- **Avoided emissions factor** (approx): 0.72 kg CO_2/kg
  243,090 × 0.72 = 174,024.8 kg = -174.02 tCO_2e (credited)

Scope 3 Total:

- Diesel Buses: 2,322 tCO_2e
- CNG Buses: 99 tCO_2e
- Motorbikes: 64.08 tCO_2e
- Water: 29.63 tCO_2e
- Electric Scooters: 0
- Recycled Waste (credit): **–174.02 tCO_2e**

Net Scope 3 Total: ~2,340.69 tCO_2e

4. Emissions Summary

Scope	Source	Emissions (tCO_2e)
Scope 1	LPG + Petrol Cars	71.87
Scope 2	Grid Electricity (offset)	0
Scope 3	Transport, Motorbikes, Water, Waste	2,340.69
	Total	**~2,412.56 tCO_2e**

5. Key Observations & Opportunities

- 100% renewable electricity—a major achievement (Scope 2 net-zero).
- Transport (Scope 3) is the largest contributor (~97% of emissions).
- Waste recycling resulted in significant emissions savings (~174 tCO_2e).
- Water-related emissions could be reduced with rainwater harvesting or reuse systems.