

AMRITA VISHWA VIDYAPEETHAM

GHG Emissions & Carbon Neutrality Report

Academic Year 2023–24 | Net-Zero Target: 2030 | Submitted to: QS Sustainability Rankings

4,017

Scope 1+2 (tCO₂ e)

11,450

Scope 3 (tCO₂ e)

2030

Net-Zero Target

65%

GHG Reduction Goal

1. Executive Summary

Amrita Vishwa Vidyapeetham has made a scientifically grounded, publicly declared commitment to achieve full carbon neutrality (Net-Zero) by 2030, encompassing a 65% absolute reduction in Scope 1, Scope 2, and Scope 3 greenhouse gas (GHG) emissions in accordance with the GHG Protocol International Standard. This report presents the university's estimated annual GHG emissions for the academic year 2023–24 across all ten campuses, alongside the strategic roadmap for achieving Net-Zero by 2030.

The Net-Zero commitment was formally announced on 7 November 2023 during the IGBC Platinum Certification award ceremony — the highest green building standard in India — awarded to all Amrita campuses. The university has operationalized this through a comprehensive Net-Zero Strategy Document aligned with global climate frameworks and ISO standards.

2. Institutional Profile

Parameter	Details
Number of Campuses	10 campuses across India
Total Land Area	1,200+ acres
Total Built-Up Area	10 million sq. ft. (100 lakh sq. ft.)
Student Population	30,000+
Faculty & Staff	2,000+
Total Occupants (approx.)	32,000
Reporting Period	Academic Year 2023–24

Reporting Standard	GHG Protocol (ISO 14064-1)
Monitoring System	Real-time BEMS across all campuses

3. GHG Emissions — University-Wide Estimate (2023–24)

⚠ Methodology Note

The GHG emissions figures presented in this report are estimated based on Amrita's publicly disclosed operational data (solar capacity, grid dependency, fleet size, campus population) and standard emission factors published by the Central Electricity Authority (CEA) India 2024, GHG Protocol, IPCC, and UK DEFRA 2025. A formal university-wide consolidated GHG inventory (ISO 14064-1) is currently being prepared and will be published upon completion of the internal audit process.

3.1 Scope 1 — Direct GHG Emissions

Scope 1 emissions arise from sources directly owned or controlled by the university, including diesel generator sets, campus vehicle fleet (petrol/diesel vehicles), and stationary combustion (boilers, LPG for cooking).

Source	Activity Data	Emissions (tCO ₂ e)
Diesel Generator Sets (DG)	200,000 litres diesel/yr	536
Campus Vehicle Fleet (petrol/diesel)	275 vehicles x 15,000 km/yr	921
Boilers / LPG Combustion	50,000 kg LPG/yr (reduced by biofuel)	107
TOTAL SCOPE 1		1,564 tCO₂ e

3.2 Scope 2 — Indirect Emissions from Purchased Electricity

Scope 2 covers emissions from purchased grid electricity across all 10 campuses. Amrita's 4 MW solar installation covers 65–70% of campus energy demand, with 30–35% sourced from the grid. The CEA India 2024 grid emission factor of 0.000727 tCO₂ e/kWh is applied.

Parameter	Value
Total Solar Capacity	4 MW across all campuses
Annual Solar Generation	7,008,000 kWh/year (at 20% capacity factor)
Renewable Energy Share	65–70% of total campus demand
Total Campus Electricity Demand	~10,382,000 kWh/year
Grid-Purchased Electricity	~3,374,000 kWh/year (30–35%)

Emission Factor (CEA India 2024)	0.000727 tCO ₂ e/kWh
SCOPE 2 EMISSIONS	2,453 tCO ₂ e/year

3.3 Combined Scope 1 + 2 Summary

Scope	Emissions (tCO ₂ e/year)
Scope 1 — Direct Emissions	1,564
Scope 2 — Purchased Electricity	2,453
TOTAL SCOPE 1 + 2	4,017 tCO₂ e/year

4. Scope 3 — Indirect Value Chain Emissions

Scope 3 covers all other indirect emissions not owned or controlled by the university but occurring as a result of its activities. The categories below are estimated based on campus population, travel patterns, and procurement data aligned with GHG Protocol Scope 3 methodology.

Category	Activity Basis	Emissions (tCO ₂ e)
Staff & Student Commuting	19,200 commuters × 20 km × 220 days	6,775
Business Travel (Flights, Trains)	~500 faculty × 10,000 km/yr avg.	1,275
Supply Chain & Procurement	30,000 students × 0.06 tCO ₂ e/student	1,800
Waste Disposal	32,000 people × 0.05 tCO ₂ e/person	1,600
TOTAL SCOPE 3		11,450 tCO₂ e

5. Overall GHG Summary — All Scopes

Emission Scope	Total Emissions (tCO ₂ e/year)
Scope 1 — Direct Emissions	1,564
Scope 2 — Purchased Electricity	2,453
Scope 1 + 2 Combined	4,017
Scope 3 — Value Chain (Indirect)	11,450

GRAND TOTAL (All Scopes)**15,467 tCO₂ e/year**

6. Net-Zero Commitment — Target 2030

Commitment Detail	Value
Net-Zero Target Year	2030
Scope Coverage	Scope 1 + 2 + 3
Reduction Target	65% absolute GHG reduction
Standard Alignment	GHG Protocol International Standard
Announcement Date	7 November 2023 (IGBC Platinum Ceremony)
100% Renewable Energy Goal	2035
Verification Standard	ISO 14064-1 / ISO 14068-1:2023
IGBC Certification	Platinum — awarded November 2023 (all campuses)
LEED Certification	Achieved August 2024
Solar Capacity Installed	4 MW (306 kWp rooftop PV)
EV/CNG Fleet Share	45% of campus vehicle fleet
DNV-Verified Milestone	India's first Carbon-Neutral Conference (ICSRF 2025)
Public Commitment URL	amrita.edu/unsdg-26/sdg13/commitment-to-carbon-neutral-university/

7. Emission Factors & Methodology Reference

Factor / Source	Value
Grid Electricity (CEA India 2024)	0.000727 tCO ₂ e/kWh
Diesel Combustion (IPCC 2006)	2.68 kg CO ₂ e per litre
LPG Combustion	2.14 kg CO ₂ e per kg
Petrol Vehicle (UK DEFRA 2025)	0.000171 tCO ₂ e/passenger-km
Two-Wheeler	0.000047 tCO ₂ e/passenger-km
Economy Flight (ICAO)	0.000255 tCO ₂ e/passenger-km
Waste (per capita)	0.05 tCO ₂ e/person/year

8. Supporting Documentation & URLs

Document	URL
Carbon Neutrality Commitment	amrita.edu/unsdg-26/sdg13/commitment-to-carbon-neutral-university/
DNV-Verified Carbon Neutral Report (ICSRF 2025)	webfiles.amrita.edu/2025/12/carbon-neutrality-report-final.pdf
Sustainability Report 2023-24	webfiles.amrita.edu/2025/12/sustainability-report-25.pdf
Energy Reduction Plan	amrita.edu/unsdg-26/sdg7/plan-to-reduce-energy-consumption/
Climate Action Plan	amrita.edu/unsdg-26/sdg13/climate-action-plan-shared/
Sustainable Campus Policy	amrita.edu/unsdg-sustainable-campus-policy2023/

Official Declaration

Amrita Vishwa Vidyapeetham formally commits to achieving carbon neutrality (Net-Zero) by 2030 through a 65% absolute reduction in Scope 1, 2, and 3 GHG emissions. This commitment is publicly declared, institutionally governed, and supported by verified measurable actions across all 10 campuses, aligned with GHG Protocol and ISO 14064-1 standards.

Prepared by: Office of Sustainability, Amrita Vishwa Vidyapeetham | April 2026