GREEN AUDIT REPORT

FY 2025–26

IIHMR UNIVERSITY
JAIPUR, RAJASTHAN

Submitted by:

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This report has been prepared based on the information provided by the institute, available records, and observations made during the site visit.

Contents

EXECUTIVE SUMMARY

This Green Audit assesses the environmental performance of IIHMR University, Jaipur, with a focus on greenhouse gas emissions, biodiversity, energy use, and sustainability practices. The assessment quantifies carbon emissions (Scope 1 and Scope 2), evaluates carbon sequestration from campus vegetation, and estimates emission avoidance through renewable energy systems.

The total gross greenhouse gas emissions are estimated at 652.60 tCO_2e, with a carbon intensity of 0.76 tCO_2e/student/year. Renewable energy contributes to emission avoidance, while campus vegetation provides measurable carbon sequestration benefits.

While key sustainability initiatives are in place, the assessment highlights an opportunity to strengthen data logging and monitoring systems, particularly across water, waste, and indirect emissions, to enable more accurate performance tracking and informed decision-making.

Key Performance Indicator	FY 2025-26	Target	Target Year
Gross Carbon Emissions (Scope 1 + Scope 2)	652.60 tCO_2e	Net-Zero	2036
Net Emissions (after biogenic removals)	640.10 tCO_2e	–	–
Carbon Intensity	0.76 tCO_2e/student/year	–	–
Energy Use Intensity	1,331 kWh/student/year	–	–
Renewable Energy Share	11.71%	–	–
Total Trees	500	–	–
Waste Diversion Rate	34.47%	–	–

Initiatives Taken by the University in FY 2025-26

Initiative	Description	Impact
STP Installation	New 25 KLD Sewage Treatment Plant installed to treat and reuse wastewater	Reduced freshwater demand
Dry waste recycling	Engagement with authorized recycler for recycling the dry waste.	Improved waste diversion from the landfill.
Human-centric design for promoting ODF+ behaviours under SBM (Grameen)	A two-day workshop applying behavioural science and human-centred design to improve sanitation practices, focusing on sustained toilet use, waste management, and village cleanliness.	Better adoption of sanitation behaviours, cleaner communities, reduced open defecation relapse, and stronger long-term outcomes of Swachh Bharat Mission (Grameen).

1. Introduction

Climate change is the defining challenge of our time, and we are at a critical juncture. From shifting weather patterns that threaten food production to rising sea levels that increase the risk of catastrophic flooding, its impacts are global and unprecedented in scale.

With the growth in population, economic activity, and living standards, greenhouse gas (GHG) concentrations in the atmosphere have reached record levels, driving global warming and climate change. In response, governments and organizations worldwide are committing to achieving net-zero emissions. In India, the Government has launched the National Action Plan on Climate Change (NAPCC), outlining key national missions to address climate challenges through a multi-stakeholder approach.

Educational institutions are critical stakeholders in this transition. They influence policy at local and national levels through research, while shaping future leaders through education. They serve as incubators for innovation and play a pivotal role in fostering sustainability-driven thinking.

This Green Audit Report for FY 2025–26 presents an assessment of IIHMR University, evaluating its performance across climate impact, biodiversity, waste, energy use, and the sustainability practices adopted by the institute.

2. Institute Profile

2.1 About Institute

IIHMR University, Jaipur, was established in 2014 under the IIHMR University Act, 2014 by the Government of Rajasthan. It has its origin in the Indian Institute of Health Management Research, founded in 1984, and functions as a postgraduate research university in the field of health and development studies.

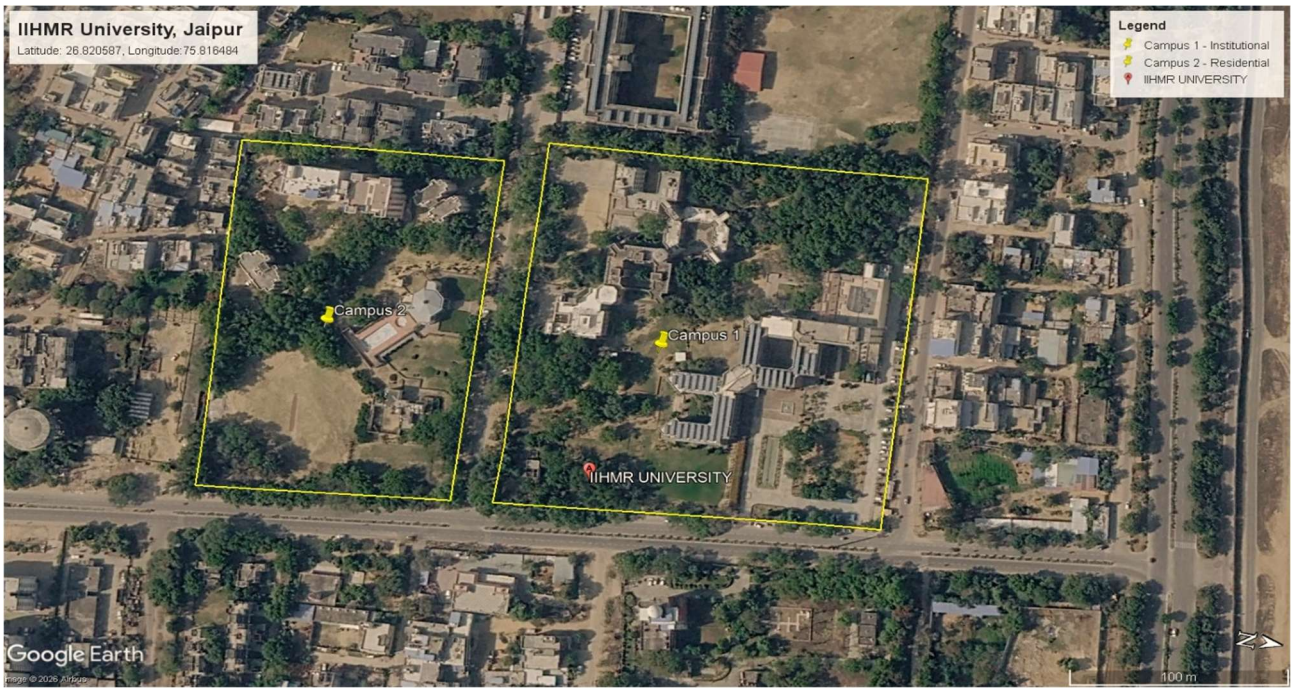
The campus is spread over approximately 14.37 acres and comprises academic, administrative, and residential facilities.

The University operates through five schools covering health management, public health, pharmaceutical management, development studies, and digital health. It offers MBA programs in Hospital and Health Management, Pharmaceutical Management, Healthcare Analytics, and Development Management, along with a Master of Public Health program. Doctoral programs are offered in public health, health management, hospital management, digital health, and development management, along with executive programs in related domains.

The University maintains academic collaborations with national and international institutions for academic exchange and research. It has a diverse student base from different regions and academic backgrounds, supporting an interdisciplinary learning environment.

2.2 Site Location

IIHMR University is located in Jaipur, Rajasthan, India, within a semi-arid climatic zone characterized by high temperatures, low to moderate rainfall, and water stress conditions.



3. Green Audit Framework

3.1 Objective and Scope

The objectives of green audit are:

i. Assess environmental performance across climate, energy, water, waste, and biodiversity.

ii. Quantify Scope 1, Scope 2, and selected Scope 3 greenhouse gas (GHG) emissions.

iii. Evaluate carbon sequestration from vegetation and emission avoidance through solar energy, and present net emissions as a supplementary indicator.

iv. Document sustainable practices implemented by the university.

v. Identify gaps and define measurable key performance indicators (KPIs) for continual improvement.

vi. Recommend actions to reduce emissions and enhance resource efficiency.

vii. Promote stakeholder awareness and strengthen sustainability governance.

This audit utilizes the operational control approach to define the organizational boundary, covering all academic, administrative, residential, and utility operations within the campus.

3.2. Methodology

The methodology adopted for this audit was a three-step process comprising:

a) **Data Collection:** Data was collected through site observations, record review, and stakeholder interactions. The following activities were undertaken:

i. Campus site visit for physical verification of green features and infrastructure.

ii. Collection of data related to carbon emission sources, plant diversity, and sustainable practices through logbooks, direct observation, and staff interviews.

iii. Compilation of records such as electricity bills, water bills, solar power generation data, and LPG consumption from designated departments.

b) **Data Analysis:** Carbon footprint was calculated using the Corporate Accounting and Reporting Standard to estimate gross and net emissions. Key performance indicators including gross and net emissions, carbon intensity, energy use intensity, and tree diversity index were introduced to track year-on-year progress.

c) **Gap Identification and Improvement Opportunities:** Based on data analysis and site observations, gaps were identified and measures were proposed to reduce carbon emissions and improve resource efficiency across the campus.

All calculations are based on standard emission factors and conservative assumptions to ensure a realistic and consistent representation of the institute's environmental performance.

4. Findings and Analysis

4.1 Climate Impact

4.1.1 Carbon Emissions

For greenhouse gas (GHG) accounting, emissions are categorized into Scope 1 (direct emissions from sources owned or controlled), Scope 2 (indirect emissions from purchased electricity), and Scope 3 (other indirect emissions from value chain activities).

This assessment covers Scope 1 and Scope 2 emissions in full, along with selected Scope 3 categories based on relevance and data availability. Scope 3 results are reported with a limited boundary and are indicative in nature.

Scope 1 Emissions

i. Diesel Generators

The institute is equipped with 2 diesel generators for electricity backup. The total annual consumption from all the DG sets was approximately 2,000 L. The estimated carbon emissions from the DG sets amount to 5.36 tCO_2e.

Annual Diesel consumption (L)	Emission factor (kg CO_2e /L)	Emissions (tCO_2e)
2,000	2.68	5.36

ii. Transportation

This report only considers vehicles owned/operated by the university and used for official purposes. Currently, it operates two vehicles, their annual fuel consumption and respective emissions are presented below.

Vehicle	Fuel Type	Emission factor (kg CO_2e /L)	Quantity (L)	Emissions (tCO_2e)
Innova	Diesel	2.68	2,213	5.93
Tempo Traveller	Diesel	2.68	800	2.14
			Total Emissions	**8.07**

iii. LPG Consumption

The institute utilizes Liquefied Petroleum Gas (LPG) for cooking purposes in the hostel mess and Pantry. The estimated annual emissions associated with the use of LPG are outlined below:

Area	Annual Consumption (kg)	Emission factor (kg CO_2e /kg)	Emissions (tCO_2e)
Mess	8,208	2.99	24.54
Pantry	342	2.99	1.02
		Total Emissions	**25.56**

Scope 2 Emissions

Grid Electricity (Gross Import Basis) (kWh)	Emission Factor (EF)	Emissions (tCO_2e)
8,64,235	0.71*	613.61

**Source: Central Electricity Authority (CEA), CO_2 Baseline Database for Indian Power Sector (Version 21.0, 2025)*

4.1.2 Carbon Sequestration from Trees

Campus trees absorb CO_2, offsetting emissions. Assuming an average absorption of 25 kg CO_2 per mature tree annually, total sequestration is calculated as follows:

No. of Trees	Average CO_2 Absorption/tree (kg)	Total Carbon Sequestration (tCO_2e)
500	25	12.5

4.1.3 Carbon Avoidance from Solar Power Plant

The solar power plant results in avoided emissions by replacing grid electricity consumption.

Solar Capacity (kW)	Annual Electricity Generation (kWh)	EF	Avoidance (tCO_2e)
100	1,34,320	0.71	95.37

4.1.4 Climate Impact Summary

***i.* Gross GHG Emissions by Scope**

Emission Category	Source	Value	Unit
Scope 1: Direct Emissions	DG Sets	5.36	tCO_2e
	Transportation	8.07	tCO_2e
	LPG	25.56	tCO_2e
	Total Scope 1	38.99	tCO_2e
Scope 2: Indirect Emissions (Location-based)	Grid Electricity (Gross Import Basis)	613.61	tCO_2e
Scope 2: Indirect Emissions (Market-based)	Not Applicable	–	–
Total Gross Emissions (Scope 1 + Scope 2)		**652.60**	**tCO_2e**

***ii.* Intensity Metrics**

Metric	Value	Unit
Operational Carbon Intensity	0.76	tCO_2e / student / year

Basis: 860 Students

***iii.* Supplementary Climate Benefits and Removals**

The following parameters are reported as supplementary information only. They are not subtracted from the gross GHG inventory under the GHG Protocol Corporate Standard. Biogenic removals and avoided emissions are disclosed separately for transparency and to highlight positive climate actions.

Category	Impact	Value	Unit
Biogenic Removals	Carbon Sequestration (Campus Trees)	12.50	tCO_2e
Avoided Emissions	Renewable Energy Generation (Solar on-site)	95.37	tCO_2e
	Total Climate Benefit	**107.87**	**tCO_2e**

Net Emissions after Biogenic Removal (Scope 1 + Scope 2): 640.10 tCO_2e

iv. Scope 3 Emissions Summary

Source	Amount (kg)	Emission Factor kg CO_2e/kg	Emissions (tCO_2e)
Dry Waste (Recycled)	3,840	Not accounted	–
Wet Waste (Landfilled)	7,300 kg	1.2	8.76
		Total Scope 3 Emissions	**8.76**

Note:

- Dry waste is sent for recycling through authorized vendors, as supported by recycling certificates.
- Emissions from recycled waste are not accounted due to lack of site-specific processing data and to avoid overestimation or double counting.
- Wet waste emissions are estimated assuming landfill disposal.

4.2 Biodiversity

The campus is covered with vegetation. A total of 500 trees representing 20 different tree species and 40+ species of shrubs and small plants contribute to the ecological richness of the campus.

4.2.1 Tree Diversity

Tree Name	Scientific Name	Native/non-native	Count
Neem	*Azadirachta indica*	Native	238
Alstoniya	*Alstonia scholaris*	Native	20
Kanchan	*Bauhinia variegata*	Native	100
Khajora	*Phoenix sylvestris*	Native	10
Coconut	*Cocos nucifera*	Native (cultivated)	1
Amaltash	*Cassia fistula*	Native	10
Babul	*Vachellia nilotica*	Native	20
Kadam	*Neolamarckia cadamba*	Native	10
Imly	*Tamarindus indica*	Native	7
Boldi (Ber)	*Ziziphus mauritiana*	Native	5
Bottle Brush	*Callistemon citrinus*	Non-native	15
X-Mas Tree	*Araucaria heterophylla*	Non-native	2
Gulmohar	*Delonix regia*	Non-native	10
Jamun	*Syzygium cumini*	Native	3
Mango	*Mangifera indica*	Native	4
Kajur (Date Palm)	*Phoenix dactylifera*	Non-native	20
Safada (Eucalyptus)	*Eucalyptus spp.*	Non-native	10
Satoot (Mulberry)	*Morus alba*	Non-native	4
Pilkan (Pakar)	*Ficus virens*	Native	10
Simul	*Bombax ceiba*	Native	1
		Total	**500**

4.2.2 Tree Diversity Index

Particular	Value
Total Trees	500
Total Native Trees	439
Native Tree Ratio	87.8%
Shannon Diversity Index (H)	1.90

Interpretation: Native tree ratio: <40% poor, 40–60% average, 60–75% good, 75–85% very good, >85% ecologically strong. Shannon Diversity Index (H'): <1.5 low diversity, 1.5–2.5 moderate, 2.5–3.5 good, >3.5 very high.

4.3 Waste Management

The waste segregation is generally done using two-bin system (wet and dry waste streams). The institute sends dry waste to certified recycler. Recycling logs and certificates are maintained. The biogas plant of processing capacity 25kg/day is installed on the campus but found under maintenance during the audit period.

The dry and wet waste generated on campus in the last year is as follows:

Waste Type	Annual Quantity	Disposal Method
Dry	3,840 kg/year	Recycling
Wet	7,300 kg/year	Disposed through municipal collection (assumed landfill)

Waste Diversion Rate: 34.47% (based on recycled waste share)

4.4 Energy Consumption

Energy sources include grid electricity, diesel generator (DG) sets, transportation fuel, solar PV, and LPG. All data is converted to kWh equivalent for uniformity.

Energy Source	kWh Equivalent	% Share
Grid Electricity (Net Import)	8,63,911	75.49
Solar Energy - Self Use	1,33,996	11.71
DG Generation	7,000	0.61
LPG - Cooking	1,09,440	9.56
Diesel - Transportation	30,130	2.63
Total Consumption	**11,44,477**	**100.00**

Assumptions: 1 L of diesel = 3.5 kWh electricity output for DG sets; 1 L of diesel = 10 kWh equivalent for transportation based on NCV; LPG energy content is considered as 12.8 kWh/kg on NCV Basis. Grid consumption is presented on a net import basis, while Scope 2 emissions are calculated using gross grid electricity in line with GHG Protocol.

Energy Use Intensity: 1,331 kWh/student/year

5. Sustainability Practices

5.1 Policy on Climate Change

The university established its Climate Change Policy in the academic year 2022–23, with the primary objective of supporting climate action and promoting a sustainable, eco-friendly campus. The policy aims to conserve the environment, prevent pollution across the campus, and contribute as a responsible higher education institution in addressing climate change.

5.2 Environmental Management Structure

To support the implementation of its Policy, the university has constituted an Internal Green Audit Committee, responsible for driving environmental initiatives and monitoring progress against KPIs. This multidisciplinary team includes members from administration, academics, infrastructure, and utilities. Key responsibilities of the committee include:

i. Overseeing internal green audit
ii. Coordinating sustainability activities across departments
iii. Tracking KPIs and recommending corrective actions
iv. Promoting stakeholder engagement and awareness

5.3 Sustainability Performance Framework

The Internal Green Audit Committee utilizes a centralized framework to track institutional commitments. As of FY 2025-26, the University has formalized its primary climate target, with additional resource-specific targets under development.

I. Active Institutional Commitments

Focus Area	Core Objective	Metric	Baseline Year	Target Year
Climate Impact	Achieve Net-Zero Operations	Scope 1 & 2 (tCO_2e)	2025-26	2036

II. Future Target Tracking (Under Development)

To support the 2036 Net-Zero goal, the following focus areas have been identified for baseline stabilization. Future audits will define specific percentage-reduction targets for these categories:

- **Water Stewardship:** Transitioning toward a Water Positive campus through STP expansion and rainwater harvesting.

- **Circular Economy:** Increasing the Waste Diversion Rate (currently 34.47%) through organic waste processing.

5.4 Green Initiatives

During the audit visit, the following green initiatives were observed in operation on campus:

a) Solid Waste Segregation: Implemented through a two-bin system for effective waste separation.

b) Biogas Plant: Converts food waste into cooking gas, but was under maintenance during the audit period.

c) Solar Energy: Rooftop solar panels contribute to clean energy generation.

d) Rainwater Harvesting: A rainwater harvesting system is implemented on campus for groundwater recharge.

e) Automatic Sensor Faucets: Installed at mess and washrooms, conserving water by releasing the flow only when needed.

f) Single-use Plastic Ban: Campus is free of single-use plastics

g) Tobacco Ban: The university has adopted the tobacco/smoking free policy on campus.

h) Wastewater Treatment and Reuse: STP plant is installed to treat wastewater and treated water is used for the irrigation.

i) RO Reject Reuse: The reject from the R.O plant is used for the irrigation.

j) Transparent Disclosure: Key sustainability metrics disclosure through the EcoTag QR-based platform.

k) Two-day workshop: Human-centric design for promoting ODF+ behaviours under SBM (Grameen)

6. Conclusion and Recommendations

The audit indicates that IIHMR University has established a sound foundation in sustainability, supported by operational renewable energy systems and key environmental practices. Total gross emissions (Scope 1 and Scope 2) are estimated at 652.60 tCO_2e, with a carbon intensity of 0.76 tCO_2e/student/year. Tree diversity assessment reflects moderate diversity (H' ≈ 1.90), with scope to enhance species distribution. While several sustainability initiatives are in place, there is an opportunity to strengthen data logging and monitoring systems across energy, water, waste, and indirect emissions to enable more accurate performance tracking and informed decision-making.

Recommendations

Focus Area	Recommendation
Monitoring and KPIs	▪ Strengthen data collection and reporting systems for water, waste, paper, fuel, and other key sustainability parameters. ▪ Introduce monthly data logging protocols with standard formats. ▪ Define and track key performance indicators (KPIs) including: ➢ Water use intensity (L/student/day) ➢ Water recycling rate (%) ➢ Water Sustainability Ratio

	➢ Paper Use Intensity (kg/student/year)
Energy	▪ Install block-wise energy meters for area-wise consumption tracking. ▪ Assess load profile and identify inefficient equipment for phased replacement.
Waste Management	▪ Strengthen waste segregation practices. ▪ Conduct periodic waste assessment and maintain quantified waste records for trend analysis. ▪ Prioritize the restoration of the 25kg/day Biogas plant to improve the waste diversion rate. ▪ Install a composting unit for landscaping waste.
Water Management	▪ Install water meters at borewells and STP inlet/outlet; track extraction and reuse monthly. ▪ Install piezometer to monitor groundwater levels. ▪ Maintain structured water consumption and reuse logs.
Biodiversity	▪ Increase native species share in plantation. ▪ Geo-tag trees to improve monitoring and awareness among stakeholders. ▪ Expand assessment to include fauna (bird diversity)
Policy, Governance and Awareness	▪ Define clear targets against each KPI. ▪ Integrate KPIs into institutional decision-making. ▪ Conduct structured awareness programmes to promote responsible resource use across campus.