

IMT GREENHOUSE GAS INVENTORY ~ EXECUTIVE SUMMARY

Institute of Management Technology, Ghaziabad (IMTG) is among India's premier B Schools with a distinct focus on grooming leadership through Innovation, Execution & Social Responsibility. The campus demonstrates its commitment to Sustainability through its infrastructure, operations and academic endeavors involving all stakeholders of the campus.

SUSTAINABILITY INITIATIVES:

IMTG's campus stands out as one of the rare educational institutions with a 40% greenbelt, showcasing its dedication to the environment. Notably, the lush greenery on campus creates a conducive learning environment for students and builds them for the corporate challenges.

IMTG has implemented several sustainability initiatives on campus, which are enlisted below:

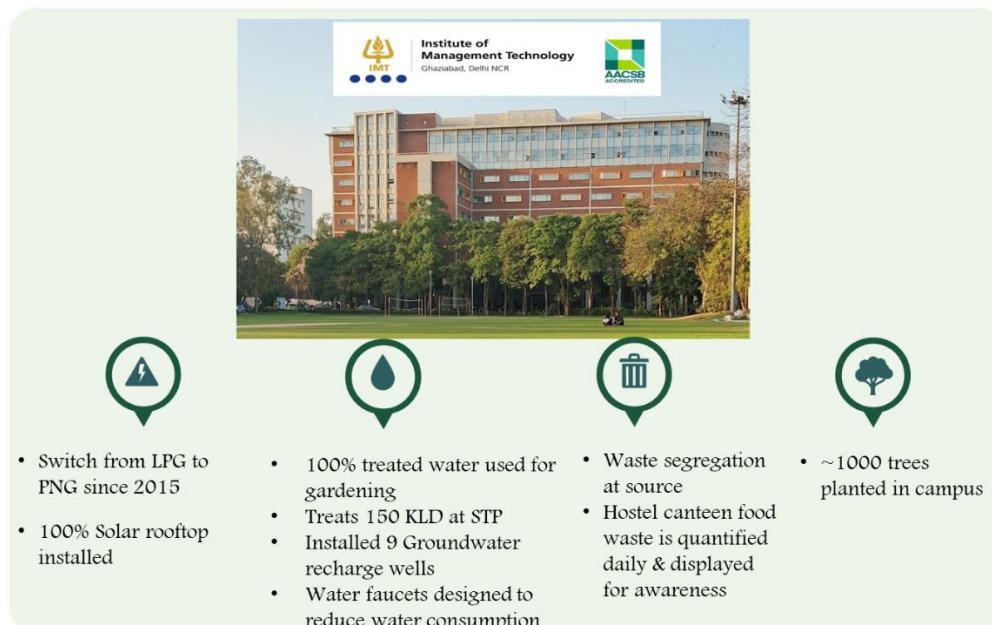


Fig. 1: Sustainability Initiatives at IMT Ghaziabad

These initiatives have not only contributed to significant reduction in Institution's carbon footprint, but also enhances its commitment to environment stewardship.

INVENTORY METHODOLOGY:

To fortify its already robust commitment to Sustainability, IMT Ghaziabad (IMTG) has embarked on a comprehensive endeavor to assess its 'Institutional Greenhouse Gas Inventory & Carbon stocks'.

IMT Ghaziabad engaged Sustainability Consultants from EcoMorphosys to carryout Greenhouse Gas Inventory through various operations across the campus and also assess the carbon stocked in the campus green cover.



The studies conducted are meticulously aligned with internationally recognized standards and guidelines, including the Greenhouse Gas Protocol – Corporate Accounting & Reporting Standard; ISO 14064 1:2018 - Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals. Also, the studies are adhering to the frameworks established by Global Reporting Initiative (GRI) & World Business Council For Sustainable Development (WBCSD).

BOUNDARY & SCOPE:

IMTG & EcoMorphosys have meticulously scrutinized the organizational framework, operational boundaries & operational context to strategically define the inventory boundary across all three emission scopes.



Fig. 2: Organizational Boundary of IMT Ghaziabad

Based on the scrutiny, the scope encompasses academic buildings, MDC, hostels, leased food outlets, horticulture & waste generated during operations at IMTG campus.

While many institutions and global corporations often prioritize the quantification of their Scope 1 and 2 emissions exclusively, IMTG has taken an additional stride by thoroughly addressing Scope 3 emissions to enrich comprehensiveness. Within Scope 3 emissions, we have meticulously considered significant emission sources to ensure a holistic approach towards sustainability measurement and management.

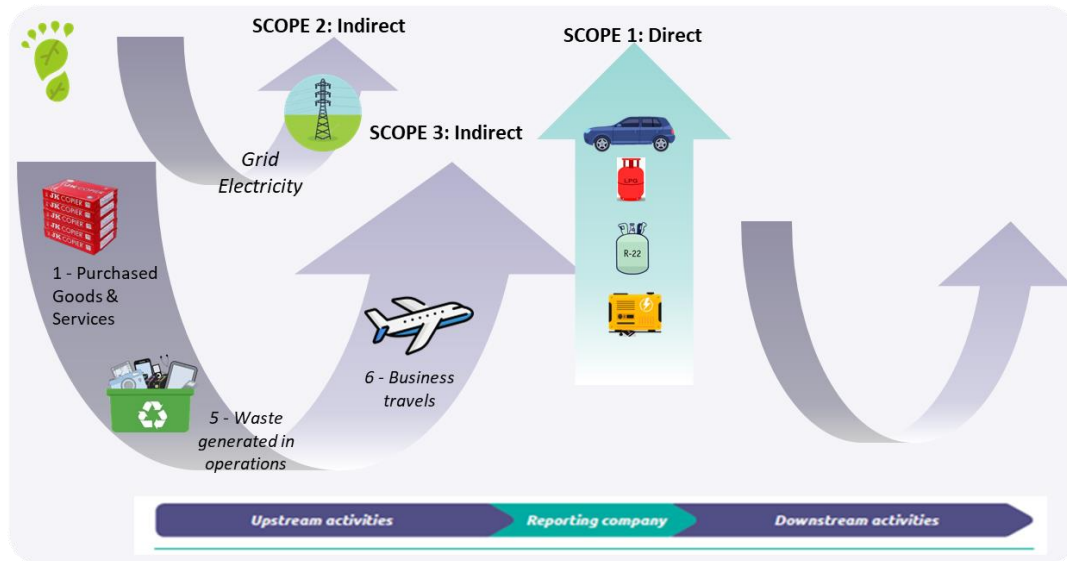


Fig. 3: Carbon Emission sources at IMTG as per GHG Protocol

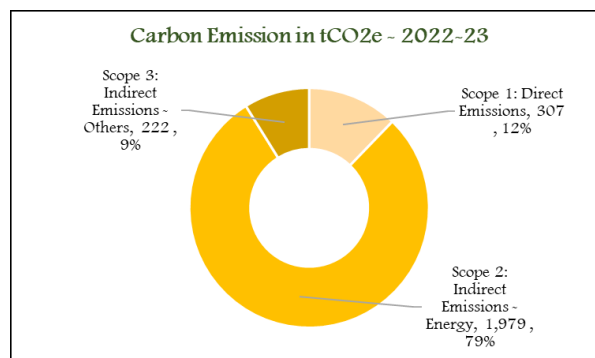
CARBON SEQUESTRATION:

This study ventures beyond conventional boundaries to assess the 40% greenbelt at IMTG, where carbon is stored. Meticulously examining identified carbon reservoirs within trees and shrubs, the study encompasses above-ground biomass carbon (trees, trunks, leaves), below-ground biomass carbon (roots), litter and deadwood biomass carbon, and soil organic carbon.

The greenery enveloping the IMTG campus enriches the surrounding environment and ecosystem through various services such as nutrient recycling, climate regulation, oxygen provision, water conservation, air purification and soil preservation.

RESULT:

Greenhouse Gas Inventory:



According to the study, IMTG's total carbon emissions for the reporting period 2022-23 is **2450 metric tons of CO₂ equivalent per annum**, which includes scope 1, scope 2 and scope 3 emissions; translating to **1.62 metric tons of CO₂ equivalent per capita**.

The largest contributor is the grid-based electricity under Scope 2 emission.

Installation of solar panels within the campus has directly contributed towards 13% reduction in Scope 2 emissions.

IMTG Green House Gas Inventory Summary & Sources, as per GHG Protocol scopes, are included in the annex.

Carbon offset initiatives like rooftop solar installation and greenbelt development have reduced the carbon emission to **2,184 metric tons of CO₂ equivalent per annum** which equals to about **1.44 metric tons of CO₂ equivalent per capita**.

Carbon Stocks Assessment:

A total of **121 metric tons of Carbon** is sequestered by the **3.645 hectares** of green cover. The carbon sequestration study identifies **44 species** across **537 plantations**, exhibiting varying girth sizes. Notably, the largest tree in size is *Ficus religiosa* (Banyan tree) with girth diameter of 167 cm.



CONCLUSION:

In conclusion, the publication of the Carbon Inventory Report represents a significant step forward for IMTG, demonstrating its firm commitment to holistic development, academic excellence, and environmental responsibility.

This report not only provides a valuable baseline for monitoring Sustainability practices but also guides to strategize Institute's long-term sustainability & climate roadmap. By embracing sustainable principles, IMTG aims to foster innovation, contribute meaningfully to national and global climate efforts, and inspire all stakeholders to engage in sustainable practices.

Assessment & Report crafted by ECOMORPHOSYS

ANNEXURE 1

 <small>Institute of Management Technology Ghaziabad, Delhi NCR</small>	IMTG GREENHOUSE GAS INVENTORY ~ SUMMARY	 <small>Evolve Sustainably</small>
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		Unit	2022-23
Energy Consumption	Electricity	MWh	2,429
	Solar generation	MWh	318
	Gas for cooking - LPG & PNG	Tonnes	42.0
	Diesel for DG	Lts	8,356

SCOPE WISE		Unit	2022-23
Inventory Emissions	Scope 1: Direct Emissions	tCO _{2e}	249
	Scope 2: Indirect Emissions - Energy	tCO _{2e}	1,979
	Scope 3: Indirect Emissions - Others	tCO _{2e}	222
	Total	tCO_{2e}	2,450

SOURCE WISE		Unit	2022-23
Inventory Emissions	Energy - electricity & cooking gas	tCO _{2e}	2,013
	Business travel & owned vehicle	tCO _{2e}	169
	Purchased & Capital Goods	tCO _{2e}	40
	Waste generated	tCO _{2e}	228
	Total	tCO_{2e}	2,450

Carbon stock in Plants	Above Ground Biomass Carbon	tC	67
	Below Ground Biomass Carbon	tC	11
	Litter & Dead Biomass Carbon	tC	9
	Soil Organic Carbon	tC	34
	Total	tC	121

Generic Info	Total acres under green spaces	Hectares	3.65
	Population - Students, Professors, Residents, Employees including contract	Nos	1,515

Data Source: Respective process owners through meter readings, standard log books, invoices & ERP

Reporting Period: Academic year coincides with Financial year thus FY is considered for all cases

IMTG GHG Inventory is carried out by EcoMorphosys

Carbon Stocks per hectare (Evaluation)	Total acres under green spaces	Hectares	3.65
	Carbon stocks within campus until Feb'24	tC	121

Carbon Sequestration rate (Theoretical)	Carbon sequestration standard in all pools as found in sparse strata*	tC/H	2.07
	Carbon sequestration rate per annum across the campus	tC/A	7.56

*Karki et al. 2016 Assessment of forest carbon stock and carbon sequestration rates at the ICIMOD knowledge park in Godavari

SUMMARY OF GHG INVENTORY			
Without Offset	Population	Nos	1,515
	Absolute Carbon Emissions	tCO₂e/yr	2,450
	Net Carbon Emission without offset per capita	tCO₂e/capita	1.62
With offset	Carbon sequestered per annum	tC/yr	-7.56
	Emissions Offset by solar	tC/yr	-259
	Net Campus Emissions with emissions offset (Solar & Carbon seq)	tCO₂e/yr	2,184
	Net Carbon Emission with offset per capita	tCO₂e/capita	1.44

ANNEXURE 2

Scope	Sl. No.	Sources
SCOPE 1 EMISSIONS	1	Stationary Combustion
		Diesel fuel for DG
		Cooking gas (LPG & PNG)
	2	Mobile Combustion
		Fuel consumption of IMT owned vehicle
	3	Fugitive Emissions
		Refrigerants & coolants
		Oils for transformer, DG & STP
		Chemical for water & wastewater treatment
	Garden maintenance related manure, fertilisers & pesticides	
SCOPE 2	1	Electricity consumption
		Grid based electricity
SCOPE 3 EMISSIONS	1	Category 1 - Purchased Goods & Services
		Printing paper
		Food raw material - 3 food staples
	4	Category 5 - Waste generated in operations
		E-waste
		Wastewater generated
	5	Category 6 - Business travels
	Business travels of Faculty, staff & students- Air travel & 4 wheelers	