



Galgotias University

CARBON FOOTPRINT REPORT

Reporting period

1 Jan 2023 – 31 December 2023

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1.0 Terms used

Abbreviations	Full Form
CFP	Carbon Footprint
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
AY	Assessment year for reporting period (Calendar year)
GHG	Greenhouse Gases
IPCC	Intergovernmental Panel on Climate Change
Kg	Kilograms
MTCO ₂ E	Metric Tons of CO ₂ Equivalent
LPG	Liquefied Petroleum gas
GU	Galgotias University

2.0 Sustainability Initiatives, the need of the hour.



Present times have witnessed extreme climate scenarios and their unprecedented impact on the environment globally, may it be the records rains, land-slides, the killer heat wave setting new records or wild fires, snow avalanches or excessive floods in various global cities. All these varied natural catastrophes have, however, only highlighted to the excessive environmental degradation which is a result of the excessive human intervention and abuse of nature by the human being.

Realization of the dire state that the world is presently experiencing as a result of the wrath of the nature seems evident from the multiple structured initiatives being planned by government agencies world over. The COP meets and the evidence of actions taken by the world leaders in furtherance to their commitment at Global and Local levels is seen, however the monster of climate devastation created over the years can be defeated only by the collective effort of all the institutions and the citizen community of the world.

3.0 About Galgotias University

Galgotias University, located in Uttar Pradesh and sponsored by Smt. Shakuntala Educational and Welfare Society, is one of the leading private university with NAAC A+ grade.

The university began its operations in the 2011-2012 academic session and has grown to have more than 30K+ students. Today, with 20 schools offering over 200 programs, including Diploma, Undergraduate, Postgraduate, and PhD Programs, the university is ranked among India's top universities. With the aim to become an internationally recognized institution that excels in multidisciplinary and interdisciplinary education, research, and innovation, the university provides for appropriate infrastructure and learning environment leading to the development of academically strong and well-rounded individuals capable of making meaningful contributions to the society

With 5 stars rating in Teaching, Academic development, facilities, innovations and employability by the QS ranking, Galgotias university has earned numerous accolades for outstanding academic programs, including recognition as 'Excellent' in the ARIIA Ranking, UGC-12B status and DSIR SIRO.

4.0 Sustainability Commitment @ Galgotias University

Galgotias University, being a premier academic institution, realizes the responsibility on them as a source of inspiration and motivation to the entire academic fraternity. The practices at the university are not limited to the development of a sustainable campus but also to create a team of sustainability warriors, who would inculcate the good practices from their academic life to contribute for the betterment of the society at large.

The Galgotias university provides an environment and opportunities to the students, staff and the faculty to participate and contribute in the multiple initiatives undertaken by the university focusing on all aspects of sustainability including Environmental Impact management and Social Inclusive initiatives while ensuring ongoing compliance to the governance framework established at the university.

Further, the university also offer an opportunity to the society in the local community and beyond to participate in their multiple sustainability initiatives undertaken under the aegis of the university.

Structured approach and initiatives:

To ensure commitment and seriousness to drive sustainability initiatives, the leadership team at the university ensure their involved participation. A cross functional Core Committee is established and is led by the Vice Chancellor with representation from various interested parties to drive comprehensive and integrated sustainability strategy, that encompasses:

- **Academic Integration:** Embedding sustainability principles throughout the curriculum, aligning programs and courses with the UN Sustainable Development Goals (SDGs).
- **Research for a Greener Future:** Encouraging and supporting faculty and student research on sustainable practices and solutions.
- **Operational Efficiency:** Implementing measures to reduce adverse Environmental Impact through series of initiatives including, reduction of the carbon footprint, energy conservation, waste management, and responsible resource management.
- **Campus Engagement:** Fostering a culture of sustainability among students, faculty, and staff through awareness campaigns, events, and initiatives.
- **Community Outreach:** Extending our sustainability efforts beyond the campus walls, collaborating with local communities and organizations.

Our commitment to sustainability goes beyond environmental responsibility. It creates a vibrant learning environment that attracts students and staff who share our values and empowers our students to become responsible global citizens who can contribute to a more sustainable future.

5.0 Report Objective:

The objective of this initiative is to baseline the carbon footprint of the activities undertaken at the university campus including the academic, research and non-academic blocks (including the hostel, mess and recreational facilities at the campus). The scope of this study is to compute the Scope 1 & Scope 2 carbon footprint for the calendar year 2023, which shall work as a baseline for reflecting the improvements through the subsequent years.

Key objectives to achieve from this study included:

- Compute Scope 1 & Scope 2 Carbon Footprint for all activities operating from the GU Campus for calendar year 2023
- Compute the various components in each of the categories
- Identify opportunities for Improvement to further enhance GU's performance on their sustainability journey

6.0 Reporting Period:

The Calendar 2023 (1 January 2023 to 31 December 2023) is considered as the reporting period and shall be the base year for all subsequent studies in this direction. The performance on various sub-parameters considered within the category for Scope 1 & Scope 2 shall be analyzed to identify the opportunities for further improvement and drive sustainability initiatives aligned with the strategic direction of the university

7.0 Scope and Reporting Boundary:

a) **Physical boundary:** All activities including academic and non-academic activities based out of the GU Campus located at Plot no 2, Sector 17A, Yamuna Expressway, , Greater Noida, Distt Gautam Budh Nagar, Uttar Pradesh 203201, India

b) Operational boundary

Scope 1 Direct GHG emissions:

- i. Captive power generation activities including the renewable power and the power from the combustion of fossil fuels (HSD) in stationary source of electricity generators
- ii. Use of energy including the Biogas created within the campus and the LPG consumption at site for the operations in the canteen, hostel mess and the Laboratories
- iii. Combustion of fuels in mobile sources–GU owned vehicles
- iv. Fugitive emissions from the Refrigeration / air-conditioning (HVAC) equipment installed, operated and discarded during the reporting period.

Scope 2 Indirect emissions:

- i. Purchased electricity including renewable and non-renewable power

8.0 Deployment Methodology:

In the spirit of the GU leadership team to Educate, Empower and Engage all stakeholders, the Carbon Footprint (CFP) computation methodology was designed to engage the cross functional team in the entire process of carbon footprint determination.

A team including representatives from the various Academic and Support staff was established and external consulting partner (Agile Group), with proven credentials, was engaged to provide the required knowledge support, handhold and guide through the various stages of Carbon Footprint determination engagement, including strategy design, competence enhancement, format design, data collection and validation, CFP computation using “Agile CF Tool kit” ©.

The Carbon Footprint is computed using the “ Agile CF Tool kit” ©for the data points provided by the respective functions. The Carbon Calculator is updated with the most authentic and relevant emission factors and assessment methodology in line with the global framework and the ISO 14064 standard. Several recognized national and international standards and global frameworks have been referred for the computation of the footprint of the University. The GHG emission factors are taken from reliable sources including India GHG protocol, CEA, GRI, WRI & DEFRA data bases, as well as computed using the IPCC published methodologies to get more accurate values in Indian context.

The report being the first formal effort for the carbon footprint at the university campus provides the values to be considered as the baseline for all subsequent computations and for comparing the improved performance in subsequent years.

Key steps in the Carbon Footprint Journey:

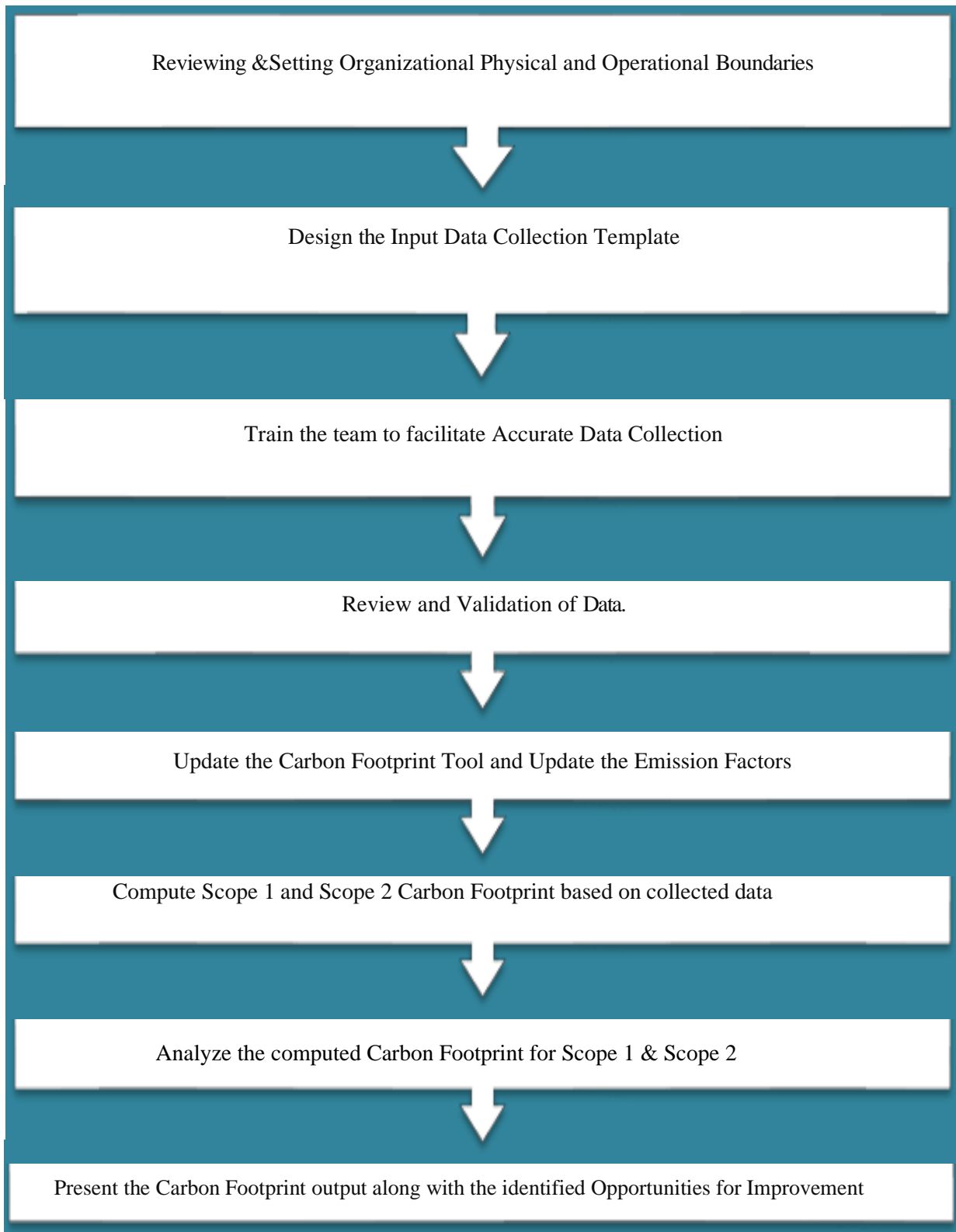


Figure 1: Flowchart Showing Adopted Methodology for Estimation of Carbon Footprint

9.0 Computed Result

Computed values of the CFP for Scope 1 & Scope 2 for the base year:

(1 Jan 2023 – 31 Dec 2023)

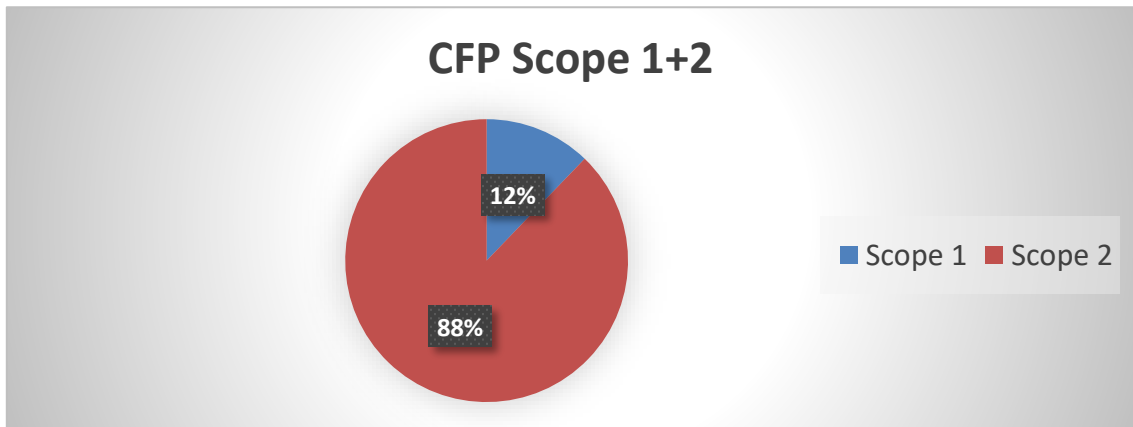
GHG Emissions Source	MT CO ₂ e
Scope 1	375
Scope 1 - Energy	186
Scope 1 - Travel	77
Scope 1 - HVAC	112
Scope 2	2697

The computed value is arrived at considering the Emission Factors in Indian Context as obtained from the India GHG Protocol and the published methodologies by IPCC, WRI, DEFRA and GHG Protocol. The computation of the carbon footprint is undertaken using global defined protocols and International ISO 14064 standards.

10.0 Analysis of the computed Carbon Footprint

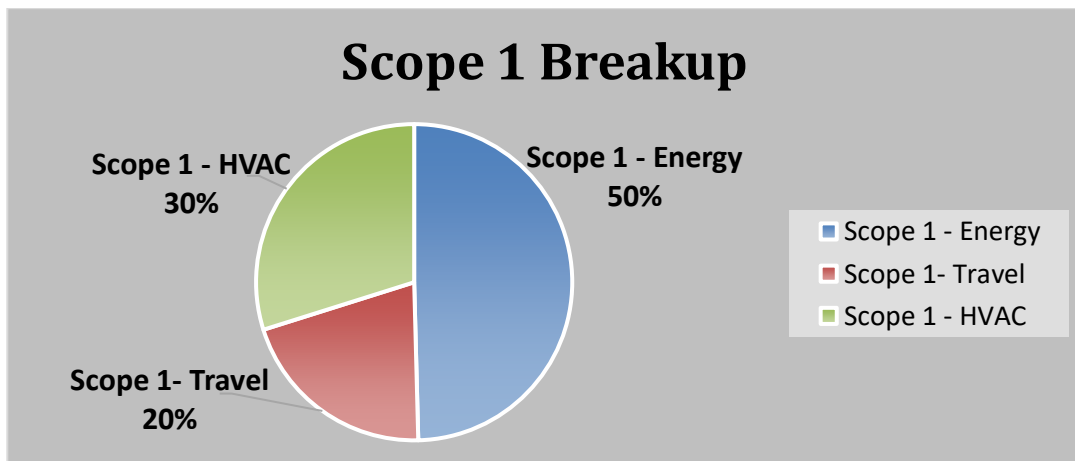
10.1 Total Carbon Footprint

Based on the overall Carbon footprint computation, it is established that the Scope 1 emission is only 12% of the total Scope 1 +2 emissions computed for the reporting period.



10.2 Scope 1 - Carbon Footprint Analysis:

- The Scope 1 Carbon Footprint is computed as 375 MT of CO₂ Equivalent and it could be divided into three main categories:
 - Energy creation – using fossil fuel and Biogas
 - Emissions on account of HVAC Operations
 - Transport related emissions by Vehicles Owned by the university



As evident, the HVAC contributes to about 30% of the total Scope 1 Carbon Footprint emissions for the reporting period. While the contribution from the use of Fossil fuel for energy at campus was 50% and for the vehicular emission by company controlled and owned vehicles contributed 20% of the overall Scope 1 Emissions.

10.3 Scope 2 Carbon Footprint Analysis:

Scope 2 accounts for the indirect GHG emissions resulting from the generation of electricity which is subsequently purchased and consumed by the university.

The **Scope 2 carbon footprint emissions** computed for the reporting period is **2697 MT of CO₂ equivalent**. The value is computed based on the actual units purchased from the UP- State Electricity Board (UPSEB) and the emission factor applicable to the Grid power as per IEA source for the reporting period.

The reporting period being the baseline year, there is presently no reference point to compare the present value against, however, this value shall become the reference point for all subsequent carbon footprint assessments.

11.0 Limitations, Assumptions and Considerations:

- The data used for computation of Carbon footprint is provided by Galgotias University and is considered to be accurate.
- The electricity units taken for the actual electricity meter bills and the same is considered to be accurate. Calibration error and accuracy limitations in the monitoring and measuring equipment used by Galgotias University in data generation is expected.

12.0 Recommendations:

Based on the analysis of the computed Carbon Footprint, the following improvement initiatives are recommended:

- Optimize resource usage through enhanced efficiency in processes and controls
 - Avoid wastage through the use of technology and engagement of the human resource at campus
 - Work towards carbon Neutral and Water Neutral campus
 - Transition / expansion of clean energy source with aim to achieve 100% Green power
 - Undertake “Zero Cost” Improvement projects with the participation of Students, Faculty, Non-teaching staff and Community
 - Usage of new & energy efficient technologies to reduce energy consumption
 - Increase green cover with plantation of trees with high carbon sequestration index
 - Engage stake holders at the campus and community through increased participation in structured events.
 - Establish an Integrated Management System framework aligned with the requirements of ISO 14001 and ISO 45001 management system standards.
 - Adopt and deploy water efficiency management system ISO 46001
 - Ensure energy optimization and conduct of regular energy audit
 - Encourage use of e-vehicles at campus
 - Encourage and promote paperless documentation for official communication and academic activities like online submission of assignments/providing notes
 - Sub-metering to identify high consumption areas of electricity to be able to drive specific optimization initiatives
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- Review the possible impact of the key events towards GHG emissions.