

Carbon Emission Report – Chandigarh University

The potential climatic impact (Global Warming) of Greenhouse Gases (GHG) emitted directly or indirectly as a result of an organization's activity is referred to as the carbon footprint.

A Carbon Footprint Disclosure for any educational institution is critical to understand so that main emission sources can be identified and essential mitigation strategies for carbon reduction may be implemented.

Scope 1 GHG Emissions

Direct greenhouse gas (GHG) emissions that come from sources within the control or ownership of an organisation are referred to as scope 1 emissions. Examples of these emissions are those brought on by the burning of fuel in boilers, furnaces, and vehicles.

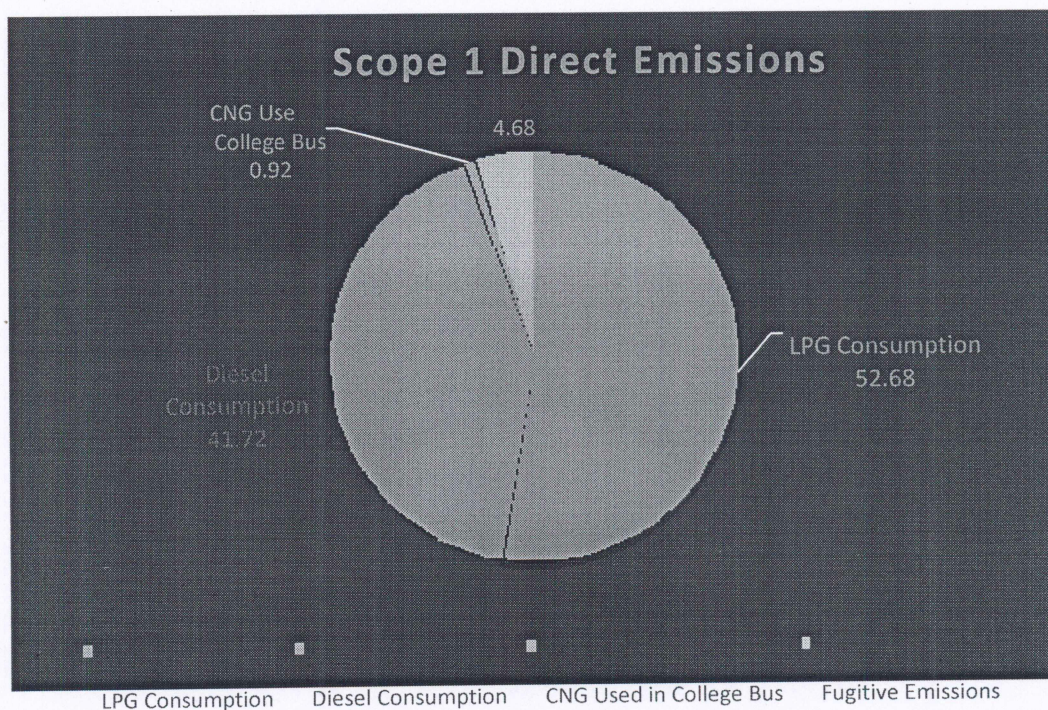


Figure 1: Pie Chart Showing Scope 1 Emissions for Different Activities

As mentioned above, LPG usage accounts for 52.68% of all scope 1 emissions, or the largest amount of GHG emissions. The LPG cylinders are utilised in the chemical lab for research and in the canteen for the preparation of food.

Following this, diesel is used in the Diesel Generator (DG) to provide power backup to the College during power outages in order to maintain ongoing activities across campus (i.e., 41.72% of total scope 1 emissions).

Diesel fumes were followed by those from air conditioners and freezers that were erected all over the college. The fugitive emissions made up only 4.68% of the overall scope 1 emissions, which is a very small percentage.

The college bus's use of CNG, a mobile source with little emissions, was the case. It was calculated to represent 0.92% of all scope 1 emissions. Less frequent excursions made by the bus, especially during events or competitions, can be attributed to their low emissions.

The overall Scope 1 Emissions estimate comes out to be approximately 16,01,084 kgCO₂e.

• **Scope 2 GHG Emissions**

Scope 2 emissions are the indirect greenhouse gas emissions caused by the purchase of power, steam, heat, or cooling. Although scope 2 emissions occur physically at the location where they are generated, they are included in a company's GHG inventory because they are a byproduct of the company's energy usage.

Scope 2 emissions are the highest level of GHG emissions. These are the emissions caused by the college's electrical consumption. Total emissions are predicted to be approximately 37,98,977 kgCO₂e.

The highest scope 2 GHG emissions occurred throughout the busiest months of the year, with the lowest occurring during holidays and mid-semester breaks.

Hence, the sum total of scope 1 and scope 2 emissions comes out to be approximately 5400000 kgCO₂e.

• **Scope 3 GHG Emissions**

Scope 3 emissions are the outcome of actions from assets that are not owned or managed by the reporting organisation but have an indirect impact on the organization's value chain. Scope 3 emissions cover all sources that fall beyond of an organization's scope 1 and scope 2 boundaries.

There is nil Scope 3 emission observed.

• **Baseline year**

The baseline year for which the whole data has been collected is 2022-23.

• **Total Scope 1 & 2 Emissions**

The sum total of scope 1 and scope 2 emissions is 5400000 kgCO₂e.

❖ **The amount of energy generated in campus through renewable sources**

Renewable energy comes from natural sources that replace themselves more quickly than they are used up. Examples of such sources that are continuously replenished are the sun and the wind.

The Institute's goal is to conduct fundamental and practical energy research that advances the creation of sustainable energy solutions, with a focus on renewable energy sources. The use of renewable energy sources as a substitute for fossil fuels has grown significantly in recent years. Additionally, these sources emit little to no pollution into the environment while producing electricity. Despite the fact that these sources still fall short of meeting energy needs in the same way that fossil fuels do, they have played a significant role in solving many energy-related issues, such as the issue of providing electricity and water to the whole campus.

The amount of energy generated in the campus through renewable sources in 2022-23 is 3,85,000 kWh.

The proposed capacity of solar energy herein is 5.0 MW.

❖ **Total Campus Building Footprint**

A polygon, or collection of polygons, that represents a specific building in the real world is called a building footprint. It offers a ground-centered visual representation of the position, character, size, and area of a building. It might also contain other geospatial data such as latitude/ longitude, address, place and spatial hierarchy.

The total campus building footprint is 83,880 square metres.

❖ Chandigarh University has destined to reach net-zero by year 2050.

The efforts are being made by the students, faculty and everyone linked with the institution to minimize the GHG emissions.

We are making every effort to ensure that by doing this, other educational institutions will be inspired to carry out comparable disclosure initiatives and present creative and affordable carbon reduction strategies for the education sector.

The project's advantages will result in significant utility cost reductions across all on-campus operations, which will help the university remain financially and environmentally sustainable.



AJ Sustainology Renewable Pvt. Ltd.

Providing impactful sustainability solutions for environmental challenges.

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Carbon Emission Summary of Chandigarh University

- **Scope 1 & 2 emissions in CO₂e: 5400000 Kg CO₂e**
- **Scope 3 emissions have not been reported**
- **Baseline year: 2022-2023**
- **Total Scope 1 & 2 emissions: 5400000 Kg CO₂e**

Note:

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Carbon footprint and net-zero emission report are on-going

Director