Project Abstract

Title: Measurement of Carbon Footprint of IIT Delhi and AIIMS

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Project Summary:

Among the foremost environmental challenges that the world is facing today are the issues of global warming and climate change. Emission of greenhouse gases is a major contributor to these issues. To minimise energy consumption and thereby reduce emissions of greenhouse gases, it is very important to ensure source identification for achieving the goal towards sustainable development. Carbon footprint measurement is an effective tool used to calculate the greenhouse gas emissions and its effect on the environment.

Objective: This study aims to assess the carbon footprint generated by various emission sources and suggest suitable methods for reducing it.

Methodology: Greenhouse gas emissions for an entity in terms of tones of equivalent CO_2 generated per year is reported using three basic steps including accounting the data, calculation and estimation of CO_2 emitted.

The carbon footprint is estimated by accounting direct emission from sources owned / controlled by the entity (scope 1), from indirect emission including essential activities (scope 2) and other outsourced distributions (scope 3). These emissions are converted to CO_2 equivalent values taking into account their respective emission factors. Finally, the total CO_2 emissions for an entity will be estimated.

Scopes:
- **Scope 1** (Direct emissions): Activities of the entity that release emissions straight into the atmosphere. They are direct emissions. Examples of scope 1 emissions include emissions from combustion in furnaces, vehicles etc.
- **Scope 2** (Energy indirect): Emissions being released into the atmosphere associated with our consumption of purchased electricity, heating and cooling. These are indirect emissions that are a consequence of activities, but which occur at sources outside the entity.
- **Scope 3** (Other indirect): Emissions that are a consequence of our actions, which occur at sources which we do not control, and which are not scope 2 emissions. Examples of scope 3 emissions are travel by means that are not owned, waste disposal, or purchased materials or fuels.

Note: In this study, we only account for scope 1 and scope 2 emissions.

Deliverable:

- The results obtained from study will inform the highest source of CO_2 emission in the entity.
- Best practices for immediate and long-term reduction of present carbon footprint value can be suggested.
- The results obtained can be compared with the other results available in the literature.