

CARBON FOOTPRINT REPORT OF

M/s. H DIPAK & CO.



Address: D-10, Road No. 21, Marol Industrial Area, MIDC,
Andheri East, Mumbai – 400093, India.

REPORT BY



Eco Envirotech Consultant & Engineers

**308, Third Floor, "Nathubhai Towers", Opp. Dhru Motors,
Udhna Main Road, Udhna, Surat-394210, (Gujarat)**

Phone: 9427580731, 9228221482,
Email: ecoenvirotech2010@gmail.com

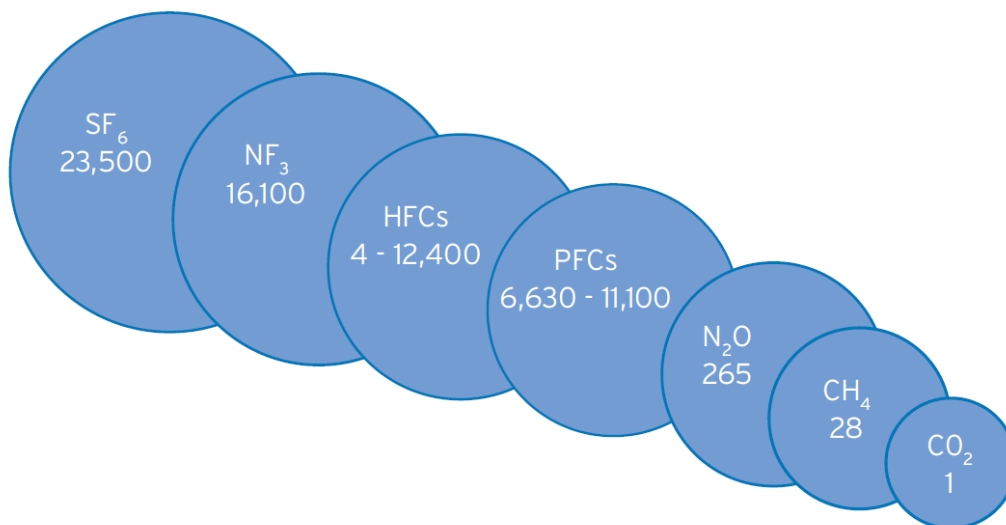
TABLE OF CONTENTS

Sr. No.	Description	Page No.
1	Executive Summary	3
1.1	Sources of Greenhouse Gases	4
1.2	Objectives of the Report	4
2	Background	4
3	Field Area	5
3.1	Scope of Report	5
3.2	Benefits of Scope Reporting	5
4	Methodology for GHG Quantification	6
5	Data Collection	8
5.1	Scope 1 Direct GHG Emission	8
5.2	Scope 2 Electricity Indirect GHG Emission	8
5.3	Scope 3 Other Indirect GHG Emissions	8
6	Data Analysis: Calculations and Results	9
6.1	Scope 1 GHG Emissions	10
6.2	Scope 2 GHG Emissions	10
7	Conclusion and Discussion	11



EXECUTIVE SUMMARY

Carbon Footprint refers to the potential climatic impact (Global Warming) of the Greenhouse Gases (GHG) emitted directly or indirectly due to an organization's activities. GHGs trap heat radiated from the sun in the atmosphere, warming the planet's surface. Many GHGs occur naturally in the atmosphere, but their increase in concentration from human activities has altered the earth's radiative balance. The GHG Protocol, Corporate Accounting and Reporting Standard covers the accounting and reporting of seven GHGs covered by the Kyoto Protocol: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF₆), Nitrogen trifluoride (NF₃). GHGs released into the atmosphere have different radiative effects depending on the unique qualities of the gas. The factor describing the radiative forcing impact of one unit of a given GHG relative to one unit of CO₂ is known as the Global Warming Potential (GWP). The GWP for all other GHGs refers to the amount of warming they cause compared to CO₂. For instance, the radiative forcing impact of one unit of methane (CH₄) is 28 times more powerful than one unit of CO₂.



The Global Warming Potential of IPCC recognized GHGs, AR5

A Carbon Footprint Disclosure of any organization is very important to understand such that its key emission sources can be identified and necessary mitigation measures can be adopted for carbon reduction. M/s. H Dipak & Co. group companies (i.e. Walking Tree India, Fancy Mfg. LLP, Walking Tree Ventures & RS Diamond) have taken an initiative to compute its carbon footprint. The organization has adopted a carbon reduction strategy to undertake this project.

The report indicates GHG emissions assessed for M/s. H Dipak & Co. for the Year 2023 (January 2023 to December 2023). The report highlights the current key emission sources of the company and sets a baseline data for setting up emission reduction targets for next Years. Several recognized national and international standards have been referred for the computation of the footprint of the organization.



1.1 Sources of Greenhouse Gases

The primary sources of greenhouse gas emissions are... (1) Transportation: The transportation sector generates the largest share of greenhouse gas emissions. Greenhouse gas emissions from transportation primarily come from burning fossil fuel for our cars, trucks, ships, trains, and planes. Over 90% of the fuel used for transportation is petroleum based, which includes primarily petrol and diesel. (2) Electricity production: Electric power generates the second largest share of greenhouse gas emissions. Our electricity comes from burning fossil fuels, mostly coal and natural gas. (3) Industry: Greenhouse gas emissions from industry primarily come from burning fossil fuels for energy, as well as greenhouse gas emissions from certain chemical reactions necessary to produce goods from raw materials. (4) Commercial and Residential: Greenhouse gas emissions from businesses and homes arise primarily from fossil fuels burned for heat, the use of certain products that contain greenhouse gases, and the handling of waste. (4) Agriculture: Greenhouse gas emissions from agriculture come from livestock such as cows, agricultural soils, and rice production. (5) Land Use and Forestry: Land areas can act as a sink (absorbing CO from the atmosphere) or a source of greenhouse gas emissions. In the United States, since 1990, managed forests and other lands are a net sink, i.e., they have absorbed more CO from the atmosphere than they emit.

1.2 Objectives of the Report

- a. Identify key emission sources of GHG at the company
- b. Compute Scope 1, Scope 2 and Scope 3 emissions for operations
- c. Analyze the results and provide cost effective & efficient measures for reducing the GHG emissions.

2. BACKGROUND

Currently, Global warming has become one of the most prominent issues faced by world community at local, national and global level. The most instant and obvious effect of global warming is the increase in temperatures around the world. GHG emissions are one of the primary causes of global warming. The valuable first step towards the emission reduction and understanding disaster risk, is quantifying the GHG emissions due to various human activities.

An organizational carbon footprint measures the GHG emissions from all the activities across the organization, including energy used in buildings, industrial processes, fugitive emissions and organization's vehicles. Besides quantifying organization's total GHG impact, a CF analysis will provide the organization with a comprehensive GHG inventory, allowing it to identify and target reductions from its major emissions sources. Different sectors like Manufacturing Industries, Hospitality, Hotels, Educational Institutions, Agricultural Sector, Medical Industry etc. estimate their carbon footprint nowadays.

This report is an initial step of action, towards mitigating the emissions of the company and formulates an environmental policy framework. It will give an overall picture of the company CO₂ emissions; help identify major emission sources & potential areas of improvement.



3. FIELD AREA

The emissions reported for the year January 2023 to December 2023 will be considered as baseline to set emission reduction targets for upcoming FYs.

3.1 Scope of the Report

Scope 1: Direct emissions through

- Stationary combustion (Fuel used in company owned vehicles, diesel used for generation of electricity in D.G. Set, Refrigerant Gas recharges)

Scope 2: Indirect emissions through purchased electricity.

Scope 3: Other Indirect GHG emissions computed by company are Purchased goods and services, Capital goods, Waste generated in operations, Business travel and Employee commuting for Scope 3 emission for the year 2023.

3.2 Benefits of scope reporting:

Understanding the emissions the business is responsible for and knowing how to measure, offset and, most importantly, reduce carbon emissions will provide your business with a proactive approach to align with mandatory regional climate regulations. To ensure your business is fulfilling all of the standards of your local and national governments, and prepared for growth in your value chain in the future, accurate reporting to stakeholders is key.

Companies that succeed in reporting all 3 scopes of emissions also have a competitive edge in carbon neutrality. There are also many other benefits of scope reporting for businesses:

- Maximized transparency throughout the supply chain for leaders, employees, and stakeholders.
- Recognizing the advancements towards net zero of key players in their industries.
- Identifying hindrances and overcoming them with valuable solutions.
- Improved consumer trust and loyalty.
- Outstanding environmental reputation and unique positioning in the market due to the ability to get GHG certifications and use eco-labelling.



- A better understanding of exposure to climate-related risks, enabling supply chains to be able to change the way they produce and with what they produce.
- Lower energy consumption and reduced resource costs.
- Ability to switch to more environmentally friendly processes and identify significant CO₂ reduction opportunities.
- Positive employee engagement, retention, and attraction of like-minded applicants.
- Recognition for early voluntary action.
- More interest from investors that lean towards green investments.

4. Methodology for GHG quantification

Scope 1:

Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).

Scope 2:

Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Although scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use.

Scope 3:

Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts in its value chain. Scope 3 emissions include all sources not within an organization's scope 1 and 2 boundary. The scope 3 emissions for one organization are the scope 1 and 2 emissions of another organization. Scope 3 emissions, also referred to as value chain emissions, often represent the majority of an organization's total GHG emissions.



Scope 3 emissions fall within 15 categories, though not every category will be relevant to all organizations. Scope 3 emission sources include emissions both upstream and downstream of the organization's activities.

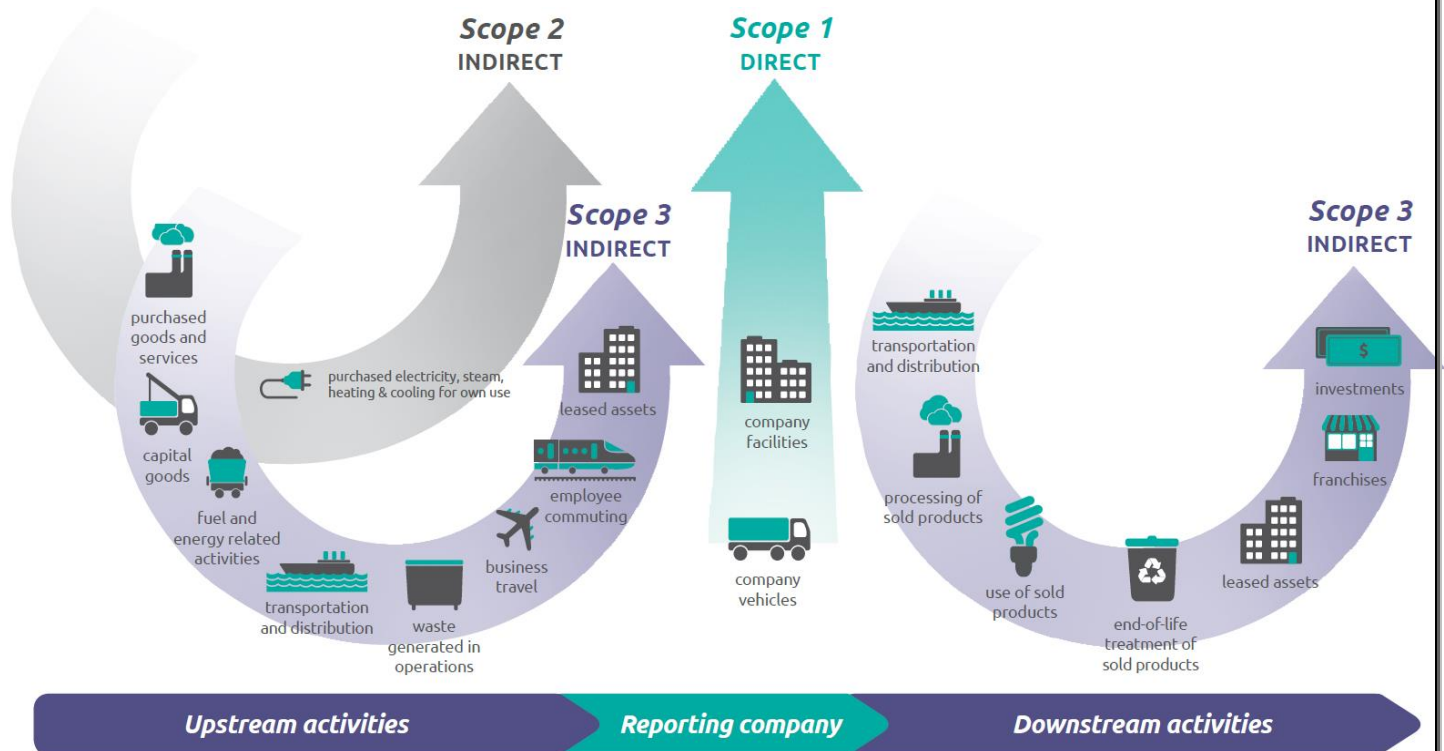
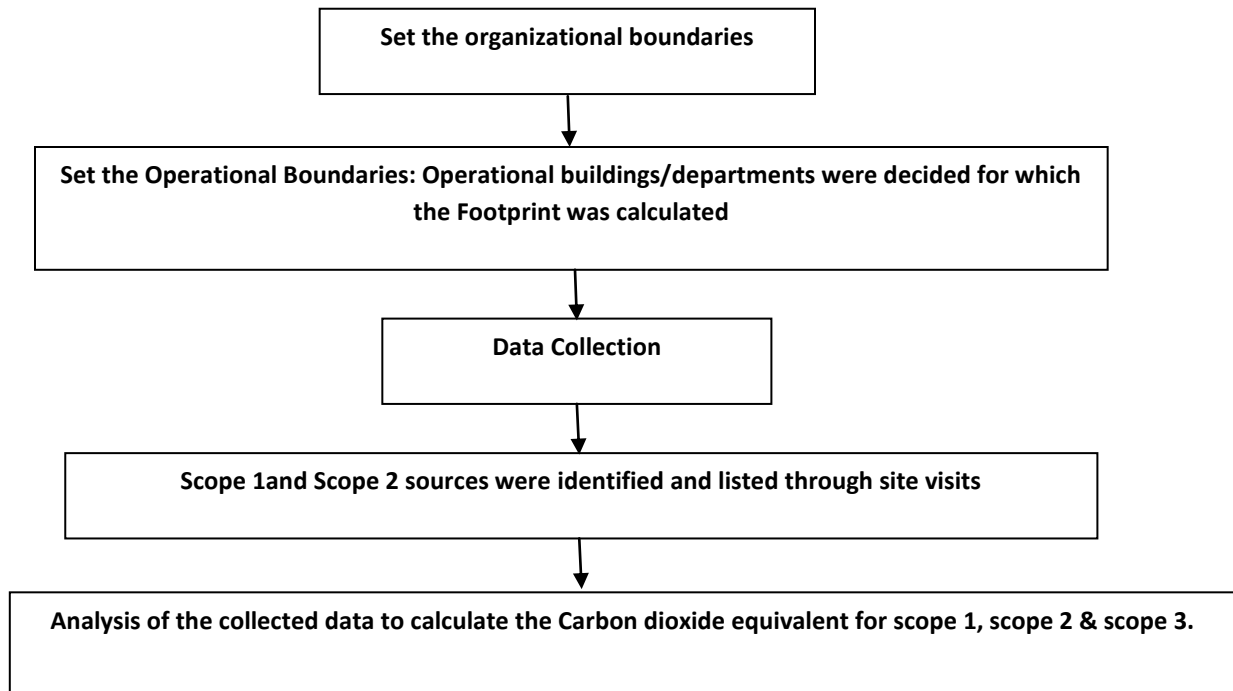


Figure above shows the 15 distinct reporting categories in scope 3 and also shows how scope 3 relates to scope 1 (direct emissions from owned or controlled sources) and scope 2 (indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company). Scope 3 includes all other indirect emissions that occur in a company's value chain. The 15 categories in scope 3 are intended to provide companies with a systematic framework to measure, manage, and reduce emissions across a corporate value chain. The categories are designed to be mutually exclusive to avoid a company double counting emissions among categories.

Calculation of GHG emissions from the unit of activity data requires emission factors for various Greenhouse Gases (specifically CO₂, CH₄, N₂O and HFCs). These factors enable GHG emissions to be estimated from a unit of available activity data (e.g. Kg of fuel consumed, Kg of product produced etc.). These are multiplied with their respective conversion factors to be expressed in terms of kg CO₂ equivalent (kgCO₂e). These emission factors were researched and extracted from various national and international standards. Compilation of all the latest required factors was done in the Agile Carbon Footprint Toolkit which is used in the computation of the carbon footprint.





5. DATA COLLECTION

5.1. Scope 1 Direct GHG emission

Direct GHG emissions occurred from sources that are owned or controlled by the organization, i.e., emissions from combustion in company owned vehicles, emission from refilling of leaked refrigerant gases & emissions from D.G. Sets etc.

5.2. Scope 2 Electricity Indirect GHG emissions

Scope 2 accounts for the GHG emissions from the generation of purchased electricity consumed by the organization. Scope 2 not considered for both M/s. H Dipak & Co and M/s. Walking Tree Ventures as they have purchased Green Electricity during year 2023.

5.3. Scope 3 Other Indirect GHG emissions

It includes emissions from outsourced activities i.e. from the activities of members of the organization but occurred at sources owned/controlled by another organization.

Purchased goods and services calculated for H Dipak & Co., Walking Tree India, Walking Tree Ventures walking Tree India. **Capital goods** calculated for H Dipak & Co., Walking Tree India & Walking Tree Ventures. **Waste generated in operations** Calculated for H Dipak & Co. & Walking Tree India. **Business travel** calculated for H Dipak & Co., Walking Tree India, Fancy Mfg. LLP, Walking Tree Ventures. **Employee commuting** calculated for H Dipak & Co., Walking Tree India, Fancy Mfg. LLP, Walking Tree Ventures & RS Diamond.

All above scope 3 emissions calculated for the year 2023 (Jan. to Dec.)



6. DATA ANALYSIS: CALCULATIONS AND RESULTS

Scope 1 calculated using emission factors provided by GHG protocols i.e. Greenhouse gas Protocol, IPCC (Intergovernmental Panel on Climate Change) & US EPA emission factors.

Scope 2 calculated using grid specific emission factor for selected area provided by TERI (The Energy and Resources Institute) by Government of India under GHG Protocol

Scope 3 In Financial year 2023, Total Scope 3 Carbon Footprint of M/s. H Dipak & Co. was computed to be 30408.4 tons of CO₂ scope 3 calculated using EPA, IPCC, DSW, IFI, TERI, WRI, GHG & IAEG standards.

The total of Scope 1, Scope 2 and Scope 3 are 31764 tCO₂. The major source of emissions came from Scope 3 emissions i.e. 29595.4 tCO₂ for Purchased goods and services.

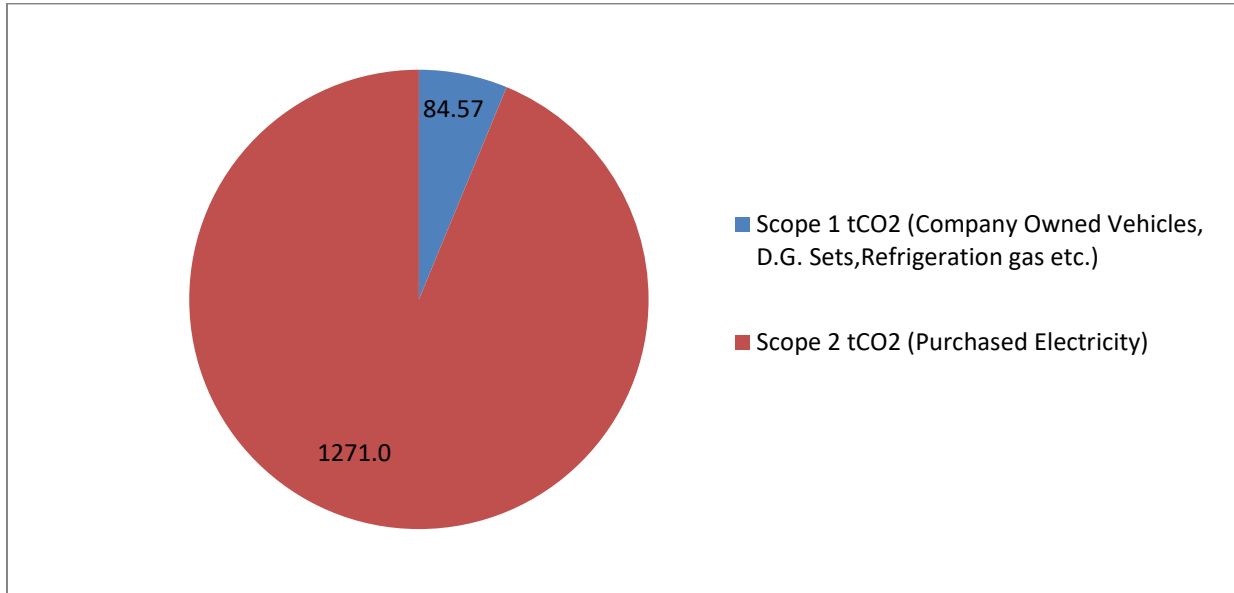
The scope wise breakdown is analyzed as follows:

Sr. No.	Scopes and categories	Metric tons CO ₂	Percentage of scope 3 emissions	Additional information
1	Scope 1: Direct emissions from owned/controlled operations.	84.5	---	
2	Scope 2: Indirect emissions from the use of purchased electricity	1271	---	Excluded H Dipak & Co and Walking Tree Ventures as they have purchased Green Electricity
	Upstream Scope 3 emissions			
3	Purchased goods and services	29595.4	---	
4	Capital goods	289	---	RS Diamond & WTB Unit excluded
5	Fuel- and energy-related activities (not included in scope 1 or scope 2)	---	---	
6	Upstream transportation and distribution	---		
7	Waste generated in operations	173.5	---	
8	Business travel	192.9	---	RS Diamond is Excluded
9	Employee commuting	157.6		Employee water consumption & waste water generation excluded
10	Upstream leased assets	---	---	
	Downstream Scope 3 emissions			
11	Downstream transportation and distribution	---	---	
12	Processing of sold products	Not Applicable	---	
13	Use of sold products	---	---	
14	End-of-life treatment of sold products	Not Applicable	---	
15	Downstream leased assets	Not Applicable	---	
16	Franchises	Not Applicable	---	
17	Investments	---	---	

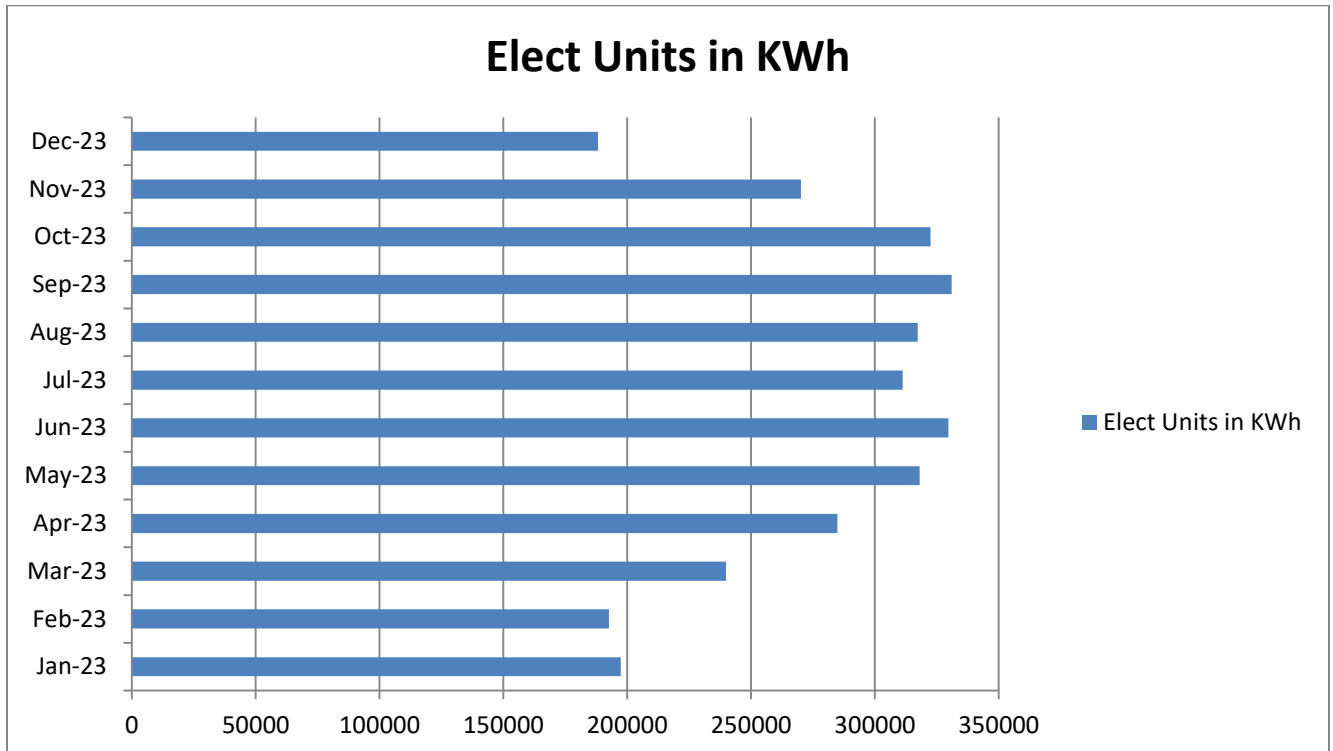


6.1 Scope 1 & Scope 2 GHG emissions

As indicated above, the GHG emissions are contributed by **Scope 1** from Company Owned Vehicles, D.G. Sets, Refrigeration gas is 84.57 tCO₂. **Scope 2** Indirect emissions from the use of purchased electricity are 1271 tCO₂.



6.2 Scope 2 GHG emissions



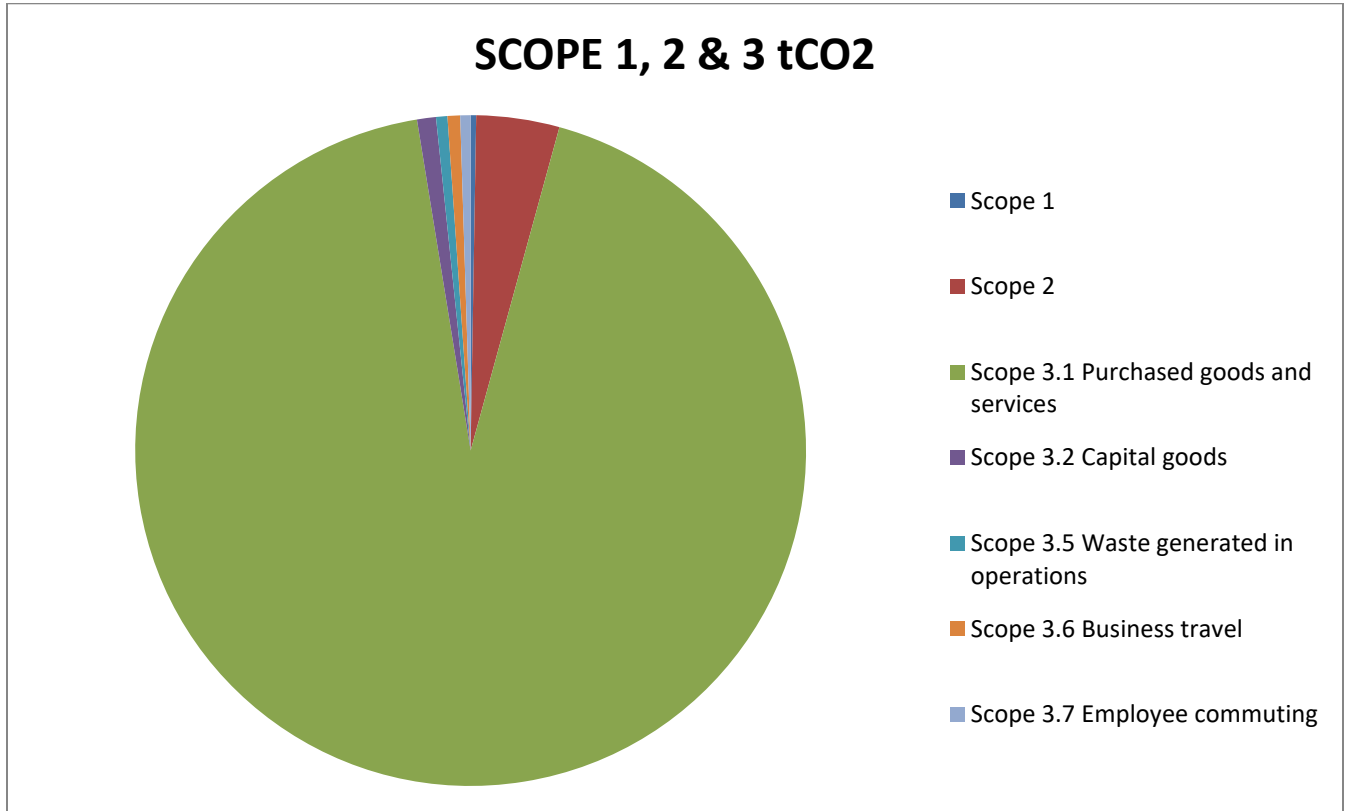
Bar Graph showing monthly GHG emissions due to electricity consumption under Scope 2

These are the emissions due to the electricity consumption by the firm. The total emissions were estimated to be 1271 tCO₂ for the reporting year 2023.



6.3 Scope 3 GHG Emissions

The Scope 3 emissions for H Dipak & Co. were computed to be approximately 30408.4 tCO₂. The maximum emission is due to Purchased goods Services (i.e. 29595.4 tCO₂). Scope 3 was calculated for (1) Purchased goods and services 29595.4 tCO₂. (2) Capital goods 289 tCO₂ (3) Waste generated in operations 173.5 tCO₂ (4) Business travel 192.9 tCO₂ and (5) Employee commuting 157.6 tCO₂



7. CONCLUSION AND DISCUSSION

The present study computes the carbon footprint of M/s. H Dipak & Co. for the Reporting Year 2023 (Jan-Dec). It is a pioneer step undertaken by the company to calculate & report its carbon emissions. The study presents the Scope 1, Scope 2 & Scope 3 emissions. It highlights both Direct emissions & Indirect emissions by company.

