



مجموعة سي تي سي
CTC GROUP

Carbon Footprint Inventory

2021



**"The Greatest Threat To
Our Planet Is The Belief
That Someone Else Will
Save It."**

– Robert Swan

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Glossary

CH ₄	Methane
CO ₂	Carbon Dioxide
Co ₂ e	Carbon dioxide equivalent
DEFRA	Department for Environment Food and Rural Affairs
GHG	Green House Gases
HFCs	Hydro-fluorocarbons
ICT	Information and Communications Technology
ISO	International Organization for Standardization
Kg	Kilogram
Km	Kilometer
Kwh	Kilowatt hour
NF ₃	Nitrogen Trifluoride
N ₂ O	Nitrous Oxide
PFCs	Perfluorocarbons
SF ₆	Sulfur Hexafluoride
SDGs	Sustainable Development Goals
tCo ₂ e	tonnes of carbon dioxide equivalent
UNGC	United Nations Global Compact

Acknowledgment

ACKNOWLEDGEMENT

The Higher Council for Environment and Natural Resources (HCENR), being The National Focal Point for the Climate Change Convention would like to commend and congratulate the CTC Groups On the efforts in preparing their First Carbon Footprint inventory Report 2021.

This narrative is a considerable product of the effort done by the Sustainability and Corporate Social Responsibility Department at CTC Groups.

It was indeed prepared in a highly technical manner using international approved methodology. The report was structured in a robust and coherent manner, overwhelmed with the fine details which depict all the narrative in a streamlined way.

This effort will contribute in offsetting the Greenhouse Gases emissions from their business operations and hence collaborating to drive the economy toward a low-carbon, resilient future and lower climate risks.

HCENR highly appreciates CTC Groups endeavors for calculating their carbon footprints and encourages CTC Group of companies to continue doing so. This effort entails a full support to be given to their staff for amplifying their awareness in following a carbon free trajectory as well as sustainable business practices.

Our appreciation and continuous support is also extend to the whole team who work and collaborated to make this report successful.

24/1/2023

Dr. Mona Ali Mohammed Ahmed

Secretary General

Higher Council for Environment & Natural Resources



Executive Summary

The carbon footprint inventory is an important tool for understanding and managing the environmental impact of CTC groups operations. As part of our ongoing sustainability and corporate social responsibility efforts, we are pleased to share with you our first carbon footprint inventory, which provides a general idea of the groups greenhouse gas (GHG) emissions over the course of the year 2021. In conducting the carbon footprint inventory, we followed the internationally recognized GHG Protocol, a set of standardized guidelines for quantifying, managing, and reducing GHG emissions. The GHG Protocol has been widely adopted by businesses, governments, and other organizations around the world as a way to measure and manage their GHG emissions in a consistent and transparent manner.

The carbon footprint inventory includes all GHG emissions from our groups operations, including energy use, transportation, and other activities. It also accounts for the indirect GHG emissions associated with the group's company supply chain, such as the emissions from the transportation of goods and services purchased by our company. By completing the carbon footprint inventory, we gained a better understanding of our GHG emissions and the areas where we can take action to reduce them. We can now use this information to set emissions reduction targets and develop strategies to achieve them. This is an important step in our company's ongoing sustainability efforts and its commitment to operating in an environmentally responsible manner. In line with our focus on sustainability and corporate social responsibility in the environment, we are focused on using sustainable and renewable resources, waste management, and protecting the environment through green initiatives.

The results of the inventory showed that our company's total gross GHG emissions were **22,328.91 tonnes of carbon dioxide equivalent (tCO₂e)**. This information will be critical to setting a baseline for our GHG emissions and to identify and implement strategies for reducing our GHG emissions and improving our sustainability performance.

Table 1: Inventory summary

Scope	Total emissions (tCO ₂ e)
Scope 1: Direct emissions	3,286.16
Scope 2: Indirect emissions	581.49
Scope 3: Value chain emissions	18,461.25
Total net emissions	22,328.91

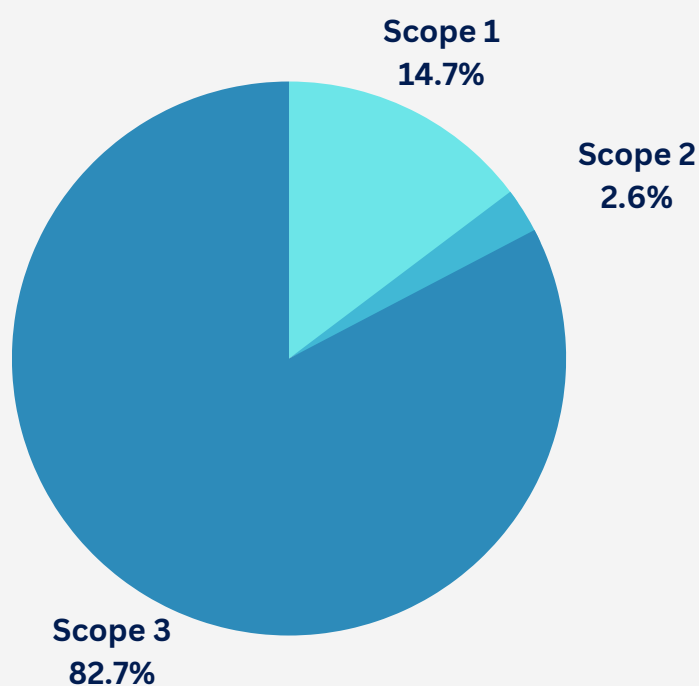


Figure 1: GHG emissions by scopes

Our Approach

Our Vision:

CTC Group was founded with a vision to develop not just a growing business, but an enterprise that would benefit the people of Sudan by providing them with products and services that enhanced their quality of life. Whether it is agricultural inputs, household appliances, construction machinery, telecommunication, automobiles, or information technology – CTC Group has always held the view to fulfill a larger societal purpose and to bring economic prosperity that transcends the marketplaces into the home of people in Sudan.

Strategic Direction & Integration:

With our inspiring vision and clear strategies, S & CSR department will continue to contribute to the society's development by utilizing the company's abundant competences and vast experience accumulated over the past years in the trading industry. We will continue to work with excellence to solve the various social issues, continuously raise CTC Group's corporate values, and enduring a safe, secure, and sustainable future.

Our Corporate Values

Our corporate values are at the heart of everything we do at CTC Group. These values include teamwork, professionalism, employee focus, integrity, moving forward, consumer focus, and value consciousness & quality focus. We strive to embody these values in all of our business practices and interactions



Our strategic Sustainability Goals:

- Deliver a level of excellent service & quality products that reach beyond customers' expectations, resulting to new and repeat businesses, and the attainment of dominant market share in every sector in which we are active to enhance the national economy.
- Provide our employees with long-term career opportunities within a stable working & cultural environment, which allows them to grow and develop themselves and the understanding of the business.
- Contribute toward the national labor market by creating job opportunities, empowering youth and supporting their career development.
 - Expand opportunities for diversity and inclusion idea generation and innovation.
- Run our business in the most environmentally sensitive way, maintaining strong links with the community through social impact activities/projects.
- Promote sustainability & excellence development across the group toward achieving outstanding innovative solutions and results, taking in consideration the three core sustainability pillars; profit, environment & people.
- Build and maintain strong partnerships & multi-stakeholder relationships to increase capacity, knowledge sharing efficiency & ease of implementation.

Our Sustainability & CSR Focus Areas:

S & CSR department focuses on five Key areas based on the three core sustainability pillars: Profit, Planet and People, this facilitates the development of our strategic steps and planning toward sustainability.

- Agriculture; Support rural and small farmers through technology transfer and capacity building.
- Youth development; Aspire to have a brighter future providing them with vocational training, supporting innovation and job creation.

- **Workforce welfare;** Participating and promoting issues of equal opportunity, ethics, inclusion and diversity across the Group.
- **Environment;** Green offices & Factories, supply chain & fleet management, and product quality/safety and sustainable sourcing.
- **Community relations;** Public health, national emergency response and pandemic support, grass root movements, culture & Arts

We believe that by addressing these key issues, we can make a positive impact on the world around us.

Our Commitment to the International Standards

CTC Group is committed to international standards and principles. We are dedicated to meeting the Sustainable Development Goals and upholding the values of the United Nations Global Compact. We believe that by operating in a responsible and transparent manner, we can contribute to the betterment of society and the environment.



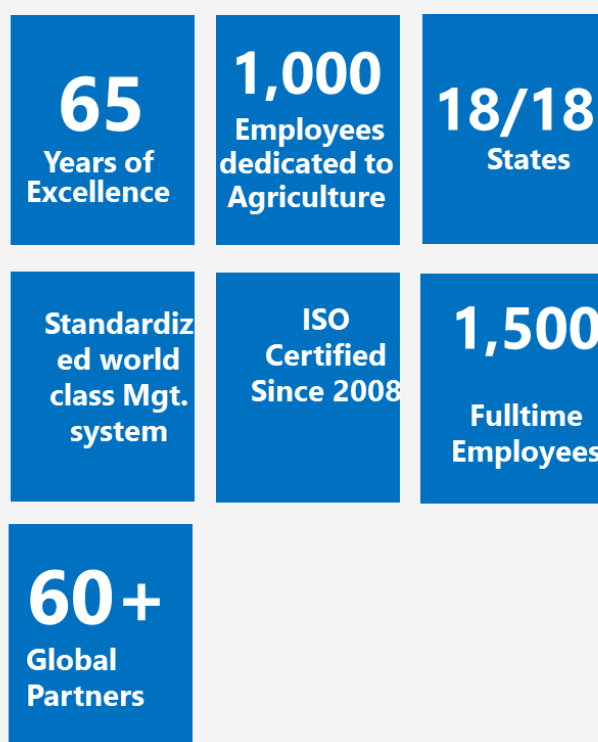
United Nations
Global Compact

Our Business

CTC Group is a privately owned group of companies operating in the Sudanese market since 1956 driven by our long-term belief in the potential of the country and its people.

Our business portfolio includes:

- Agricultural Machinery
- Agricultural Inputs
- Commodity Exports
- Construction Machinery
- Consumer Electronics & Microelectronic
- ICT
- Water Management
- Automotive
- Solar Energy



Carbon Footprint Concept

Greenhouse Gases

Greenhouse gases (GHG) trap heat from the sun and warm the planet's surface. There are seven main greenhouse gases (GHGs) that contribute to climate change, as identified by the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

Carbon Footprint

A carbon footprint is a measure of the impact that an individual, organization, process, or product has on the environment in terms of the amount of greenhouse gases produced. It is typically measured in units of carbon dioxide equivalent (CO₂e) and takes into account the global warming potential of different greenhouse gases.

The importance of measuring and reducing carbon footprint to our business

As a company committed to the United Nations Global Compact (UNGC) principles and the Sustainable Development Goals (SDGs), measuring and reducing our carbon footprint is a crucial part of our sustainability efforts. By understanding the main sources of our greenhouse gas (GHG) emissions and setting targets to reduce them, we can play a significant role in combating climate change and achieving the goals of the Paris Agreement.

In addition to the environmental benefits, measuring and reducing our carbon footprint can also help to ensure the long-term continuity of our business. Climate change poses risks to businesses, including supply chain disruptions, extreme weather events, and regulatory changes. By reducing GHG emissions, we can reduce our exposure to these risks and protect our company's future.

Next, we will set GHG reduction targets and take action to achieve them through various methods such as using energy-efficient appliances, switching to use clean and renewable energy. We understand the importance of "managing what we measure," and so we will regularly monitor our progress towards our GHG reduction goals over time.

Furthermore, reducing our GHG emissions can also lead to cost savings through improved energy efficiency and the use of cleaner, cheaper energy sources. By taking a proactive approach to measuring and reducing our carbon footprint, we can contribute to a more sustainable future for our company and combating climate change globally.

GHG Inventory Calculation Process

The process of conducting a greenhouse gas (GHG) inventory involves several steps to ensure it is comprehensive, accurate, and consistent as shown below:

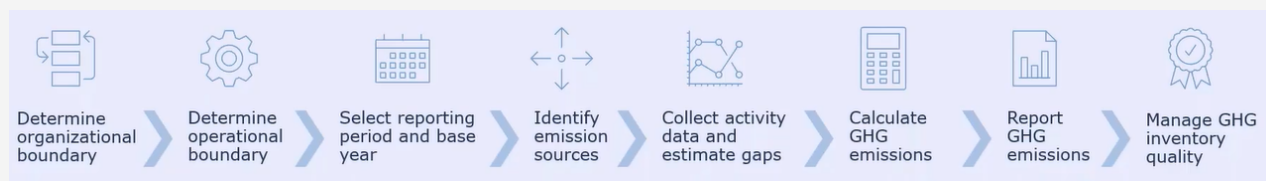


Figure 1: GHG Inventory Process

1. **Determining the organizational boundary**, which refers to which CTC Group operations will be included in the GHG inventory. In this inventory we used the Control Approach; which accounts for all GHG emissions from all our companies.
2. **Determining the operational boundary**, by identifying the emissions associated with our companies operations. Emissions are broken down into three categories, known as scopes:
 - Scope 1: Direct emissions: These are emissions from operations that are owned or controlled by the company.
 - Scope 2: Indirect emissions: These are emissions from purchased utilities.
 - Scope 3: Value chain emissions: These are all other emissions from the company's value chain, including upstream emissions (emissions embedded in purchased goods and services and emissions from transportation) and downstream emissions (emissions from product use and disposal). Some scope 3 emissions may also occur within the company's boundaries, such as from business travel and employee commuting.

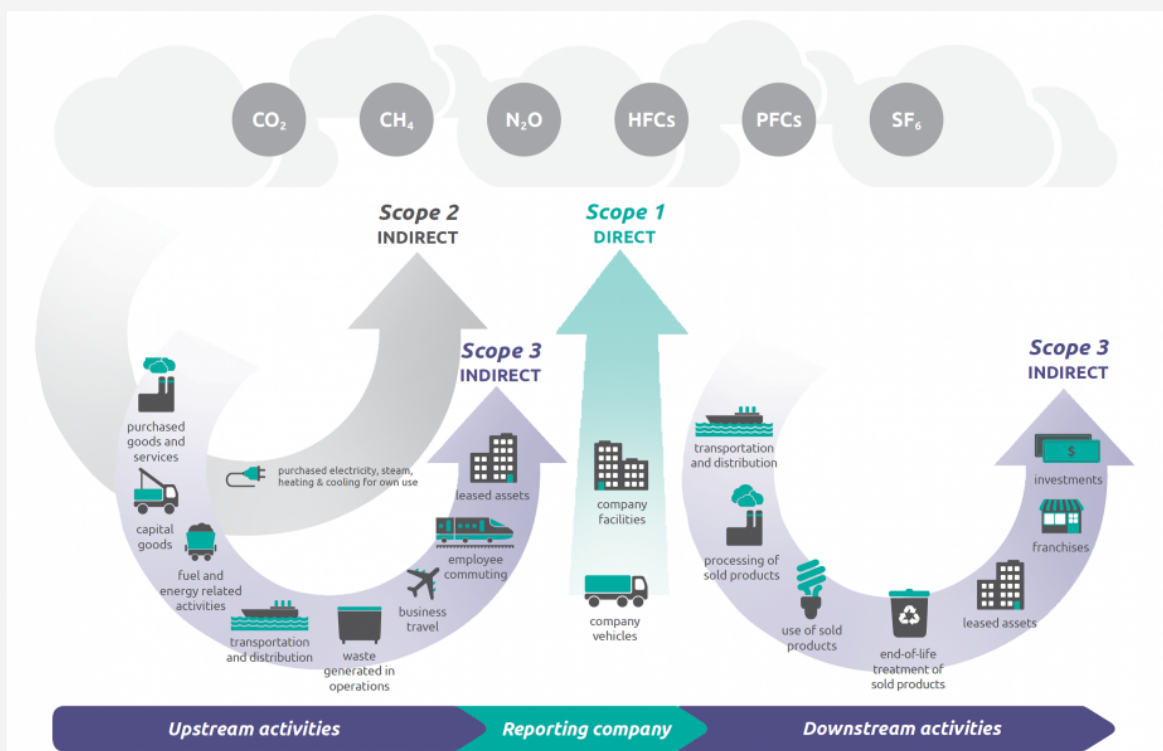


Figure 2: GHG scopes

3. **Selecting a reporting period and base year**, which are used to measure and report GHG emissions over time and provide a reference year for comparison. This inventory was calculated for the Calendar year 2021 (January 2021 to December 2021).

4. **Identifying emission sources**, which are the activities, processes, and facilities that generate GHG emissions. The emission sources in this inventory includes fuels in operations, refrigerants gases, mobile fuels used in vehicles, purchased electricity, and some of upsteram and downstream related activities.

5. **Collecting activity data and estimating gaps**, which involves metered activity data such as utility bills and fuel purchases & estimated activity data.

6. **Calculating GHG emissions**, for each activity, there is a factor that can be used to calculate emissions of all relevant GHGs combined (kg CO₂e per unit activity).

$$\text{GHG emissions} = \text{activity data} \times \text{emission conversion factor}$$

The emission factors used in this inventory is Greenhouse gas reporting: conversion factors 2021 offered by UK Department for Environment, Food & Rural Affairs (DEFRA)

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>

7. **Reporting GHG emissions**, which involves presenting the GHG emissions data in a clear and transparent manner that meets any relevant reporting standards or regulations.

8. **Manage GHG Inventory quality**, which involves implementing quality control measures at each stage of the inventory process to ensure it is accurate, complete, and consistent.

A quality management system consist of four components:

- Methods: calculation methodology should be constant where possible.
- Data: data quality and improvement of collection procedures.
- Processes and systems: including the responsible team and should be integrated where appropriate with other corporate process related to quality.
- Documentation: records of data, methods, assumptions, and estimates used to prepare an inventory require high quality and transparency.

Emissions Inventory Results

Scope 1: Direct emissions

Category	Key indicator	Total emissions (tCO2e)
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Stationary Combustion

Total amount of diesel consumed "Liters"

1,274.64



Fugitive Emissions

Total amount of gas used "Kg"

741.30



Mobile Combustion Emissions

Total distance travelled by cars "Km"

1,270.22

Scope 2: Indirect emissions

Category	Key indicator	Total emissions (tCO2e)
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Emissions from Purchased Energy

Total amount of electricity used "Kwh"

581.49

Scope 3: Value chain emissions

Category	Key indicator	Total emissions (tCO2e)
 Business travel- Air	Passenger.km	13.00
 Hotel stay	Room per night	162.04
    Freighting goods (Goods transport) <ul style="list-style-type: none"> • Freight flights • Cargo ship • Land shipments(Trucks and Vehicles) 	tonne.km	18,282.01
Material use Paper	tonnes	4.20
Total net emissions		22,328.91

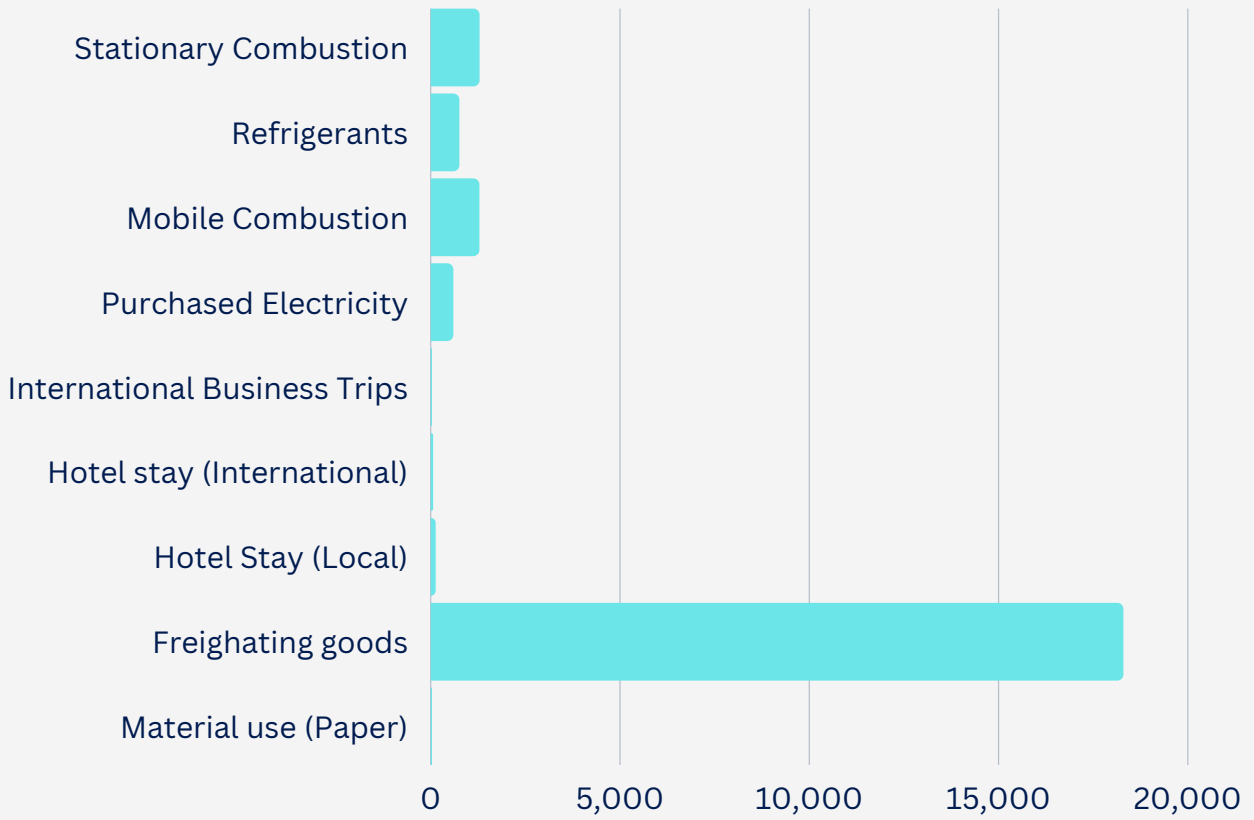


Figure : GHG emissions (tonnes CO2e) by category

Conclusion

In conclusion, the carbon footprint inventory has been a valuable tool for CTC Group as we continue to prioritize sustainability and corporate social responsibility. By identifying the sources of our greenhouse gas emissions and measuring their impact, we will be able to take action and reduce our carbon footprint and mitigate the negative impact of our activities on the environment.

One key lesson learned from this inventory is the importance of tracking and measuring our GHG emissions in order to effectively manage them. Without accurate data and measurement, it is difficult to set meaningful emissions reduction targets or develop effective strategies to achieve them. In addition, we learned that our carbon footprint extends beyond our own operations, and that it is important to consider the impact of our supply chain and other indirect emissions as well.

In our Delta factory, the engineers had implemented several initiatives that lead to reduce our carbon footprint and mitigate the negative impact of our operations on the environment. One such initiative was the training of technicians on the refrigerator assembly line to make the welding process more efficient, which reduced the amount of leakage refrigerants and increased the total production units.

Additionally, the team has been able to turn the situation around by generating income from the collection of plastic, carton, paper, and metal waste.

They had also made an effort to use more environmentally friendly gases, such as R 600A, and are working towards replacing all gases with more efficient alternatives.

We also appreciate the efforts of our staff in different departments who have contributed to our mission of operating in a more sustainable way. This includes the corporate performance team working on energy efficiency campaigns to reduce electricity consumption, the construction team designing our facilities with sustainable design principles, and our solar energy departments providing clean energy solutions.

Overall, the carbon footprint inventory has been a valuable tool for us to identify and measure our GHG emissions, set meaningful emissions reduction targets, and develop strategies to achieve them. Moving forward, we will continue to prioritize sustainability in all of our operations and seek out opportunities to reduce our carbon footprint. By setting clear emissions reduction targets and implementing strategies to achieve them, we hope to make a positive impact on the environment and contribute to a more sustainable future for all.

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