

# HİTİT SERAMİK



## Hitit Seramik Industry and Trade Inc.

2023

## Corporate Carbon Footprint Report



This report was prepared by [Metsims Sustainability Consulting](#) for [Hitit Seramik Industry and Trade Inc.](#)  
Unauthorized duplication and copying is prohibited. For all rights related to use contact with [Hitit Seramik](#).

# CONTENT

- 1. INTRODUCTION ..... 5
  - 1.1 About the Report ..... 5
  - 1.2 Goal and Scope ..... 5
  - 1.3 About Hitit Seramik ..... 5
  - 1.4 Calculation Method ..... 6
  - 1.5 ISO 14064 Standard Principles ..... 8
- 2. EU GREEN DEAL ..... 8
  - 2.1 Carbon Border Adjustment Mechanism (CBAM) ..... 9
- 3. CORPORATE CARBON FOOTPRINT ..... 10
- 4. SYSTEM BOUNDARIES ..... 11
- 5. CORPORATE CARBON FOOTPRINT RESULTS ..... 12
  - 5.1 Hitit Seramik Corporate Carbon Footprint Results ..... 12
  - 5.2 Uncertainty Analysis ..... 18
  - 5.3 Base Year Selection ..... 18
- 6. HOT SPOT ANALYSIS and FINAL EVALUATION ..... 19

## Tables

Table 1. Categories, Activities and Description of Activities .....	11
Table 2. Corporate Carbon Footprint Distribution of Hitit Seramik (GHG Protokol) .....	12
Table 3. Corporate Carbon Footprint of Hitit Seramik (ISO 14064-1) .....	13
Table 4. Distribution of Total Emissions by Activities- GHG Protokol .....	14
Table 5. Distribution of Total Emissions by Activities- ISO 14064:2018 .....	15
Table 6. Distribution of Scope 1 Emissions .....	16
Table 7. Emission Breakdowns of Stationary and Mobile Combustion Sources (IPCC-AR5) ...	16
Table 8. Distribution of Scope 2 Emissions .....	17
Table 9. Distribution of Scope 3 Emissions (GHG Protokol) .....	17
Table 10. Uncertainty Evaluation Matrix .....	18

## Figures

Figure 1. Distribution of Total Emissions by Categories (GHG Protokol).....	13
Figure 2. Distribution of Total Emissions by Categories (ISO 14064-1) .....	14
Figure 3. Distribution of Total Emissions by Activities- GHG Protokol .....	15
Figure 4. Distribution of Scope 1 Emissions .....	16
Figure 5. Distribution of Scope 3 Emissions .....	17
Figure 6. Hot Spot Analysis .....	19

## Contact Information

**Report Owner:**

**Hitit Seramik Industry and Trade Inc.**

# HİTİT SERAMİK

### Headquarter

Windowist Tower, Eski Büyükdere Cad. No:26 Kat:14-15 34467 Maslak - Sarıyer / İSTANBUL  
[info@hititseramik.com](mailto:info@hititseramik.com)

**Carbon Footprint Calculation and Reporting by:**

**Metsims Training and Consultancy Services Limited Company**



### UK:

4 Clear Water Place  
Oxford OX2 7NL

### Türkiye:

Nef09 B Blok No:7 /46-47  
Kağıthane/İstanbul/Türkiye  
[info@metsims.com](mailto:info@metsims.com)  
[www.metsims.com](http://www.metsims.com)

# 1. INTRODUCTION

## 1.1 About the Report

All data collected and analyzed in this report have been created in accordance with the principles of conformity, integrity, consistency, transparency, and accuracy of the World Resources Institute (WRI) Greenhouse Gas Protocol (GHG), the most widely used international carbon calculation methodology and ISO 14064-1:2018 Standard.

This report follows the standard 14064-1:2018 “Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals” determined by the International Organization for Standardization (ISO) and has also been prepared in accordance with the article 9 of this standard.

The ISO 14064-1 Corporate Carbon Footprint Standard provides detailed information on the principles and requirements for designing, developing, managing, and reporting greenhouse gas inventories at the enterprise or company level. It also includes requirements for setting greenhouse gas emission limits to improve greenhouse gas management, calculating an organization's greenhouse gas emissions and removal, and defining the company's specific measures or activities.

## 1.2 Goal and Scope

Hitit Seramik Industry and Trade Inc. carried out this study in order to calculate and declare greenhouse gas emissions sourced from its activities. In addition, the corporate carbon footprint study can be used in the determination and management of the company's targets related to climate change, in the management of climate-oriented investments, in the greenhouse gas emission indicators declared in the Carbon Disclosure Project (CDP) statement and sustainability reports.

The primary data used in the study was provided by Hitit Seramik and includes the data between 01.01.2023 and 31.12.2023. The process of preparing and reporting the Greenhouse Gas Emissions and Inventory was managed by the Quality Department. Primary data is provided by the relevant unit personnel in the preparation of the greenhouse gas emissions inventory report. For secondary data, calculations were made using IPCC, DEFRA conversion factors, and Life Cycle Assessment database Ecoinvent 3.9.1.

Calculations made within the framework of Categories 1, 2, 3, 4, 5 and 6 in accordance with the ISO 14064-1 Standard include all direct and indirect activities of the company.

## 1.3 About Hitit Seramik

Hitit Seramik Trade and Trade Inc. was established on October 17, 1989 for the production of Ceramic Floor and Wall Tiles. It started its operations on February 22, 1991, on 500,000 m2 land in Uşak Organized Industrial Zone, with a total capacity of 2 million m2, including 1,000,000 m2 Wall Tiles and 1,000,000 m2 Floor Tiles. As a result of the new investment efforts

accelerated following the installation and production, Hitit Seramik entered a rapid growth process and reached a production capacity of 10 million m2 in a 76,000 m2 closed factories complex in a short time.

In the 2000s, in the face of the trust and intense demands of domestic and foreign markets in Hitit Seramik's products, brand and quality, a decision was made for new investments in 2004, as there was a need to increase capacity and product range, and work was started quickly. In a short time, 40,000 m2 additional closed factory buildings were built and completed with the company's own resources, and an additional production capacity of 10 million m2 was reached, reaching a capacity of 20 million m2.

By conducting very comprehensive research in investment studies; It was aimed to present new and pioneering products to our country and the world markets, which can be produced with special technologies and machines, and this aim was achieved. With the power of its new investments, Hitit Seramik has become one of the rare production facilities in the world that can produce the largest number of sizes and types of coating materials in one production facility.

Hitit Seramik, which always aims to produce and offer the newest and best, achieves these goals; Correctly determining user needs, finding innovative and creative approaches to respond to these constantly changing needs, creating a structure that competes with itself, conducting meticulous and forward-looking research in all investments, selecting the right technology and machines, allocating large financial resources and tiring but It was made possible by enjoyable work.

**1.4 Calculation Method**

The two most common methods used in corporate carbon footprint calculations are the ISO 14064 Standard and the GHG Protocol. Hitit Seramik enterprises Domestic and Foreign Trade Inc. Greenhouse Gas Emissions will be verified according to ISO 14064, and results for two methods are included in the report in order to form the basis for future global reports and statements such as CDP, SBTi, GRI. While the computational methodology for the two methods is based on the same foundations, different terminologies are used to express the results. You can find the terminologies and groupings used in the table below.

Scope	GHG - Protocol	Category	ISO 14064-1:2018
Scope 1	Direct Greenhouse Gas Emissions	Category 1	Direct GHG emissions and removals
Scope 2	Indirect Greenhouse Gas Emissions – Purchased Energy	Category 2	Indirect GHG emissions from imported energy

Scope 3	Pre-production Shipping and Distribution Production Wastes* Business Travels Employee Transportation Postproduction Shipping and Distribution	Category 3	Indirect GHG emissions from transportation
Scope 3	Purchased raw materials and services Equity Capital Goods Fuel and Energy Related Activities (Excluding Scope 1-2) Production Wastes Pre-production Leased Assets	Category 4	Indirect GHG emissions from products used by the organization
Scope 3	Transactions of Sold Products Use of Sold Products Disposal of Sold Products Postproduction Leased Assets franchising Investments	Category 5	Indirect GHG emissions associated with the use of the organization's products
Scope 3	Other emissions	Category 6	Indirect GHG emissions from other sources.

\* Category 3 is relevant for the transportation activities. So, with the production wastes term transportation of wastes to the disposal site is referred. (GHG-Protocol & 14064 difference)

Corporate carbon footprint calculations consist of 6 categories according to ISO 14064-1 2018.

**Category 1- Direct Greenhouse Gas Emissions:** Greenhouse gas emission from greenhouse gas sources owned or controlled by an organization.

**Category 2- Indirect Greenhouse Gas Emissions – Purchased Energy:** Greenhouse gas emission generated during the production of electricity, heat or steam consumed by an organization from outside.

**Category 3- Indirect Greenhouse Gas Emissions - Transportation:** GHG emissions other than energy indirect GHG emissions arising from GHG sources owned or controlled by other organizations as a result of an organization's activities.

**Category 4- Indirect Greenhouse Gas Emissions - Products Purchased by the Organization:** Greenhouse gas emissions arise from sources located outside the institutional boundaries associated with the goods used by the organization. These resources can be fixed or mobile and are associated with all types of goods purchased by the reporting organization.

**Category 5 - Indirect Greenhouse Gas Emissions - Resulting from the Use of the Products Produced by the Organization:** Greenhouse gas emissions or reductions associated with the use of products in the organization result from products sold by the organization during the life stages that occur after the organization's production process. These emissions or reductions can cover a wide range of services and related processes.

In most cases, the organization does not know the exact fate of the product throughout its life stages and therefore must define plausible scenarios for each life stage.

**Category 6- Indirect Greenhouse Gas Emissions - Other:** Activities not included in the other first 5 categories.

Emissions, which are divided into 6 categories in the ISO 14064-1 Carbon Footprint Calculation Standard, are divided into three scopes according to the GHG Protocol. Scope 1, Category 1; In Scope 2, Category 2; and Scope 3 corresponds to the emissions calculated in Categories 3, 4, 5 and 6.

### **1.5 ISO 14064 Standard Principles**

Hitit Seramik Industry and Trade Inc. Greenhouse Gas Emissions Calculation and Verification report and report content have been prepared in accordance with ISO 14064.

The greenhouse gas emission calculation and reporting principles, which are adhered to within the scope of this Greenhouse Gas Emission Inventory Report and specified in the ISO 14064-1 Standard, are as follows:

- **Relevance:** Greenhouse gas sources, greenhouse gas sinks, greenhouse gas reservoirs, data and methodologies are selected that are suitable for the needs of the target user.
- **Completeness:** Includes all relevant greenhouse gas emissions and removals.
- **Consistency:** Allows meaningful comparison of greenhouse gas information.
- **Accuracy:** Systematic errors and uncertainties are reduced as much as possible.
- **Transparency:** Adequate and appropriate information on greenhouse gas is disclosed to enable targeted users to make decisions with confidence.

## **2. EU GREEN DEAL**

Global warming or climate change is the increase in average temperatures on the earth as a result of the greenhouse effect caused by the increase of gases such as carbon dioxide in the atmosphere, and therefore the change in the climate of the world. Some of the sun rays falling on the earth are reflected and directed towards the atmosphere. The atmosphere reflects these rays back to the earth through carbon dioxide, methane, nitrogen, etc., which are called greenhouse gases. With the increase in the density of greenhouse gases in the atmosphere, this event takes place more and the earth gets warmer.

With the increase in human activities since the industrial revolution, global warming has gradually increased, and this increase causes climate change. Reducing the effects of climate change is directly proportional to the reduction of greenhouse gas emissions, and for this



purpose, it is necessary to monitor and manage the greenhouse gases released. The first step in greenhouse gas emissions or carbon management starts with an absolutely accurate calculation. As a result of the calculation made, hot spots should be determined and targets for reduction should be set. In this sense, there are also international regulations that companies try to comply with. The most important of these is the European Green Deal.

The Paris Agreement is an agreement signed in 2015 on climate change mitigation, adaptation, and financing, and entered into force in 2016, under the United Nations Framework Convention on Climate Change (UNFCCC). Türkiye signed the agreement with representatives of 175 countries in New York in 2016. According to the agreement, At the end of the 21st century, the global temperature increase will be limited to the 2 °C starting from the pre-industrial period, and efforts will be made to reduce this value below 1.5 °C. In line with these targets, Türkiye announced the “Intention for National Contribution” (INDS) statement, which is expected to be realized by 2030, on September 20, 2015, as a reductio of up to 21%. For the same purpose, the European Union (EU) has committed to reducing its greenhouse gas emissions by 40% by 2030, compared to 1990, in its Statement of National Intent for Contribution. As a result of scientific studies, it has been revealed that even if all declared national contribution intentions are achieved, the 2 °C temperature rise limitation target cannot be reached. On December 11, 2019, the European Union (EU) published European Green Deal, which sets new micro-targets and draws a roadmap in order to achieve the goals set by the Paris Climate Agreement. With the Green Deal, the EU Commission increased its greenhouse gas emission reduction targets from 40% to 50-55% until 2030, which it took in line with the Paris Agreement, and made it more ambitious. Moreover, it set a target to become the world’s first climate neutral continent with no greenhouse gas emissions in 2050. It is emphasized that the way to achieve this target is the necessity of moving from a linear economic model, which can be expressed as a build-sell, buy-sell to a sustainable and circular economic model in today’s economic order. EU Commission officials describe the Green Deal as a path to growth that gives much more than it takes.

Another innovation that came with the Green Deal will be Carbon Border Adjustment Mechanism (CBAM). The main purpose of the CBAM regulation to be applied to the products exported into the Europe is to combat climate change without carbon leakage. Carbon leakage can be simply defined as the transport of production from countries that implement strict policies to combat climate change to countries that are less sensitive to this issue. Undoubtedly, with this Agreement, for the first time in the world, environmental externality cost will be added to the product cost. This in fact signals to market a new economic model focused on climate change.

## **2.1 Carbon Border Adjustment Mechanism (CBAM)**

The Border Carbon Adjustment (CBAM) came into force on January 1, 2023 and is considered a transition period between 2023 and 2026. During the transition period, importers do not

have to obtain a CBAM certificate and are expected to calculate and report emissions in imported products. Although only scope 1-direct emissions are included in the taxation process in the current regulation, it is stated that scope 2-indirect emissions will be included in the short term and scope 3-other indirect emissions will also be included in the long term.

The first five sectors included in CBAM are defined as aluminium, cement, electricity, fertilizer and iron and steel. In the second regulation, organic chemical, plastic/polymer and hydrogen production are also included in the scope of CBAM. In the ceramics industry, where scope 1 emissions such as process emissions and stationary combustion constitute a high share of total emissions, it is important for institutions to measure their carbon footprints, recognize risks and turn them into opportunities.

### **3. CORPORATE CARBON FOOTPRINT**

The carbon footprint is a measure of the damage done by human activities to the environment with regards to greenhouse gas emissions produced, in terms of unit carbon dioxide equivalent. It is determined by calculating the effect of greenhouse gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrogen oxide (NO<sub>2</sub>), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and Sulphur hexafluoride (SF<sub>6</sub>).

Within the framework of the ISO 14064-1 2018 Standard, the corporate carbon footprint is examined under the category 1-2-3-4-5-6. The titles and activities covered are as follows.

#### **Category 1:**

- Stationary combustion
  - Natural gas
  - Diesel fuel (Generator, machine, etc.)
  - Other fuels
- Mobile combustion
  - Company-owned vehicles
  - Rental vehicles
  - Forklift etc.
- Process emissions
  - Oxidation and LT-HT Unit Emissions
  - Fire Extinguisher Tubes
  - Use of Refrigerant Gas

#### **Category 2:**

- Purchased Electricity
- Purchased Heating/Cooling

#### **Category 3:**

- Upstream Transportation and Distribution
- Waste Generated in Operations
- Business Travel
- Employee Commuting

- Downstream Transportation and Distribution

**Category 4:**

- Purchased Goods and Services
- Capital Goods
- Fuel- and Energy-Related Activities
- Waste Transportation
- Upstream Leased Assets

**Category 5:**

- Processing of Sold Products
- Use of Sold Products
- End-of-Life Treatment of Sold Products
- Downstream Leased Assets
- Franchises
- Investments

## 4. SYSTEM BOUNDARIES

The functional unit for the calculation is all activities of Hitit Seramik in 2023 and the emissions from these activities have been calculated. The Table below shows relevant activities considered in calculations and relevant remarks on calculations.

*Table 1. Categories, Activities and Description of Activities*

Category	Activity	Comment
<b>Category 1</b>	Stationary Combustion	Hitit Seramik uses natural gas for heating and energy needs in the process. There is also some diesel usage for the generator. Emissions from the combustion of fuels are calculated under this heading.
	Mobile Combustion	Emissions arising from the fuel consumption of rented and owned vehicles and diesel forklifts under company control are calculated under this heading.
	Process Emissions	Process emissions resulting from thermal decomposition in the raw material content of ceramic tile production are evaluated under this heading.
	Fugitive Emissions	In the reporting year, no refrigerant was used and fire extinguishers containing CO2 were used as fire extinguishers. Emissions due to use and maintenance have been examined in this section.
<b>Category 2</b>	Purchased Electricity	Emissions from electricity consumption of Hitit Seramik are calculated under this heading. Hitit Seramik also uses solar energy, and its effects are taken into account in this category.
<b>Category 3</b>	Upstream Transportation	Emissions from the transportation of purchased raw materials to Hitit Seramik have been taken into account.
	Downstream Transportation	Emissions arising from the transportation of products produced at Hitit Seramik to customers have been calculated. Emissions arising from the transportation of wastes to the relevant facilities are also included in this title.

	Employee Commuting	Emissions caused by employees traveling to and from Hitit Keramik have been calculated.
	Business Travel	Emissions arising from business trips made by Hitit Keramik employees in the reporting year have been calculated. Emissions from air transportation and accommodation are calculated under this heading.
<b>Category 4</b>	Purchased Goods	Under this heading, the effects arising from the raw materials and packaging purchased by Hitit Keramik have been calculated. Raw materials are calculated on a physical basis, and services and services are calculated on a value basis.
	Capital Goods	Emissions arising from the fixed assets that the facility acquired during the calculation year were calculated.
	Waste Generated in Operations	Emissions arising from the disposal of waste generated at the factory during production have been calculated.
	Purchased Services	The services purchased by the company during the calculation year are calculated under this heading.
	Fuel-Related Activities	Emissions from the well to the pump for each fuel consumed are calculated under this heading.
<b>Category 5</b>	Processing of Sold Products	The sold products have been processed and calculated under this heading.
	Use of the Sold Products	There is the use of detergent and water. These items are excluded from the scope because they are below the level of importance.
	End-of-Life Treatment of Sold Products	Emissions from the disposal of the products sold and their packaging are calculated under this heading.
<b>Category 6</b>	Energy-Related Activities	Emissions from transmission and distribution for consumed electricity are calculated under this heading.

## 5. CORPORATE CARBON FOOTPRINT RESULTS

### 5.1 Hitit Keramik Corporate Carbon Footprint Results

The corporate carbon footprint value of Hitit Keramik's activities in 2023 is as follows, according to the scopes of GHG Protocol.

*Table 2. Corporate Carbon Footprint Distribution of Hitit Keramik (GHG Protokol)*

Scope	ton CO <sub>2</sub> eq.	%
<b>Scope 1</b>	55.742	37,2%
<b>Scope 2</b>	15.373	10,3%
<b>Scope 3</b>	78.769	52,6%
<b>Total (Scope 1-2)</b>	71.111	47,4%
<b>Total (Scope 1-2-3)</b>	<b>149.884</b>	<b>100%</b>

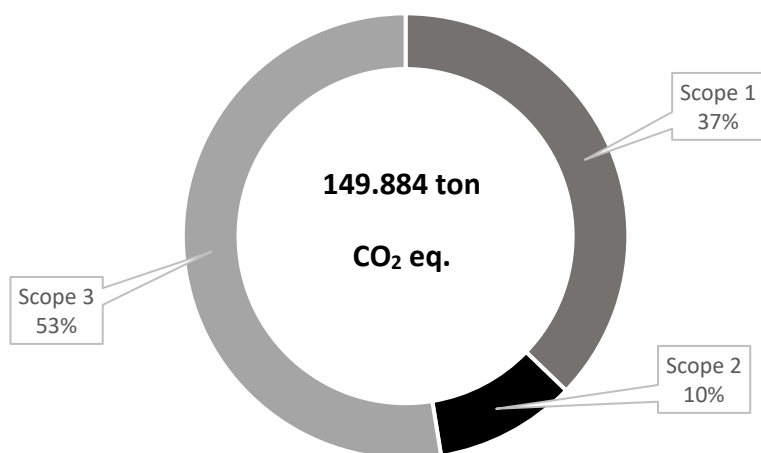


Figure 1. Distribution of Total Emissions by Categories (GHG Protocol)

As a result of the corporate carbon footprint calculation, it was seen that the Scope 3 emissions, which include the upstream and downstream value chain emissions Hitit Keramik, have a share of approximately 53% among the total emissions. It has been calculated that the energy indirect emissions included in Scope 2 have a share of 10% and direct emissions a share of 37% within the total corporate carbon footprint.

The corporate carbon footprint value of Hitit Keramik's activities in 2023 is as follows according to ISO 14064-1 scopes.

Table 3. Corporate Carbon Footprint of Hitit Keramik (ISO 14064-1)

Category	Ton CO <sub>2</sub> eq.	%
Category - 1	55 742	37.2%
Category - 2	15 373	10.3%
Category - 3	55 918	37.3%
Category - 4	13 267	8.85%
Category - 5	6 161	4.11%
Category - 6	3 422	2.28%
<b>Total</b>	<b>149 884</b>	<b>100%</b>

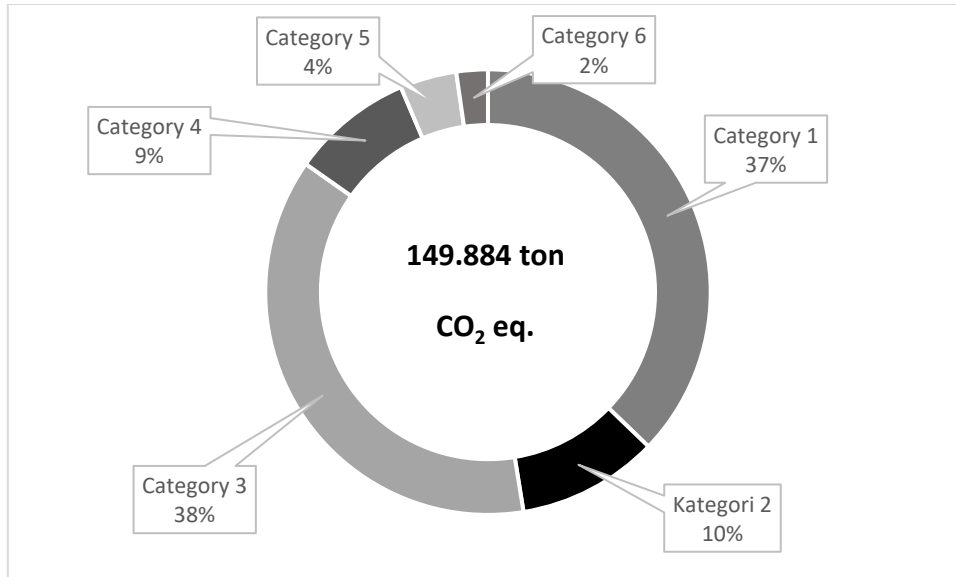


Figure 2. Distribution of Total Emissions by Categories (ISO 14064-1)

Table 4. Distribution of Total Emissions by Activities- GHG Protocol

Activities	Scope	ton CO <sub>2</sub> eq.	%
Stationary Combustion	Scope 1	39 042	26,1%
Refrigerant Gas	Scope 1	0	0%
Fire Extinguishers	Scope 1	0.06	<1%
Process Emissions	Scope 1	16 583	<11,1%
Mobile Combustion	Scope 1	77	<1%
Purchased Electricity	Scope 2	15 373	10,3%
Purchased Goods and Services	Scope 3	12 877	8,6%
Capital Goods	Scope 3	372	<1%
Energy-Related Activities	Scope 3	10 154	6,8%
Upstream Transport	Scope 3	30 476	20,3%
Wastes	Scope 3	18	<1%
Business Travel	Scope 3	7 912	5,3%
Employee Commuting	Scope 3	0	0%
Downstream Transportation	Scope 3	10 799	7,2%
Processing of Sold Products	Scope 3	6 105	4,1%
Use of Sold Products	Scope 3	0	0%
End-of-Life Treatment of Sold Products	Scope 3	56	<1%
<b>TOTAL</b>	-	<b>149 884</b>	<b>100%</b>

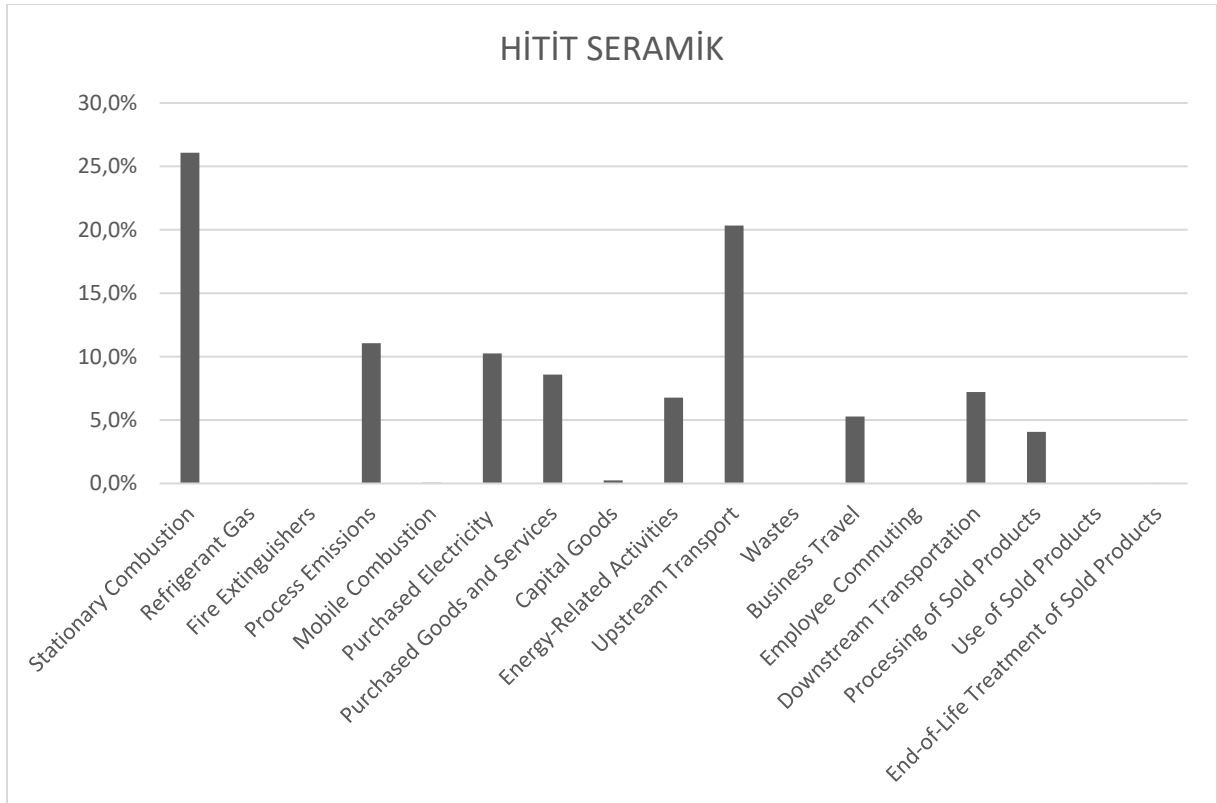


Figure 3. Distribution of Total Emissions by Activities- GHG Protocol

Table 5. Distribution of Total Emissions by Activities- ISO 14064:2018

Activities	Category	ton CO <sub>2</sub> eq.	%
<b>Stationary Combustion</b>	Category 1	39 083	26.1%
<b>Refrigerant Gas</b>	Category 1	0	0%
<b>Process Emissions</b>	Category 1	16 583	11,1%
<b>Fire Extinguishers</b>	Category 1	0.06	<1%
<b>Mobile Combustion</b>	Category 1	77	<1%
<b>Purchased Electricity</b>	Category 2	15 373	10.3%
<b>Purchased Goods and Services</b>	Category 4	12 877	8.6%
<b>Capital Goods</b>	Category 4	372	<1%
<b>Fuel-Related Activities</b>	Category 3	6 732	4.5%
<b>Upstream Transport</b>	Category 3	22 209	14.8%
<b>Wastes</b>	Category 4	18	<1%
<b>Wastes Transportation</b>	Category 3	8 266	5.5%
<b>Business Travel</b>	Category 3	7 912	5.3%
<b>Employee Commuting</b>	Category 3	0	0%
<b>Downstream Transportation</b>	Category 3	10 799	7.2%
<b>Processing of Sold Products</b>	Category 5	6 105	4.1%
<b>Use of Sold Products</b>	Category 5	0	0%
<b>End-of-Life Treatment of Sold Products</b>	Category 5	56	<1%
<b>Energy-Related Activities</b>	Category 6	3 422	2.3%
<b>TOTAL</b>	-	<b>14 9884</b>	<b>100 %</b>

The distribution of Scope 1 emissions by activities is as follows.

Table 6. Distribution of Scope 1 Emissions

Activities	ton CO <sub>2</sub> eq.	%
Stationary Combustion	39 083	70%
Refrigerant Gas	0	0%
Fire Extinguishers	0.06	<1%
Process Emissions	16 583	30%
Mobile Combustion	77	<1%
<b>TOTAL</b>	<b>55 742</b>	<b>100%</b>

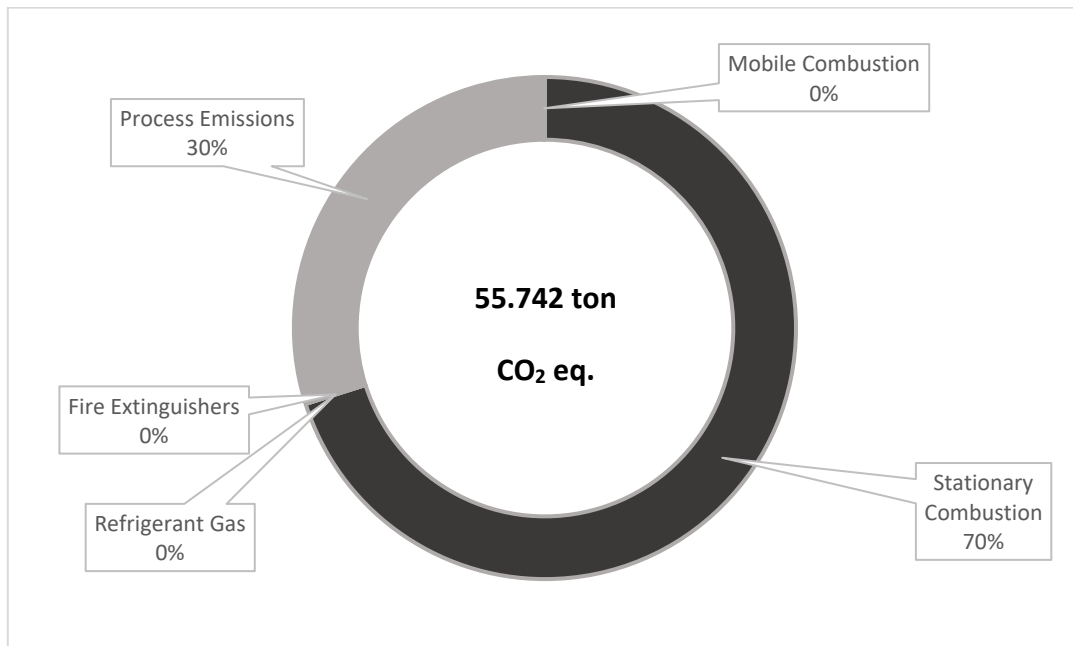


Figure 4. Distribution of Scope 1 Emissions

Emission breakdowns of stationary and mobile combustion sources according to IPCC methodology are given below. CO<sub>2</sub> eq. represents the sum of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) gases.

Table 7. Emission Breakdowns of Stationary and Mobile Combustion Sources (IPCC-AR5)

Activities	ton CO <sub>2</sub>	ton CH <sub>4</sub>	ton N <sub>2</sub> O	ton CO <sub>2</sub> eq.
Stationary Combustion	38 966	98	19	39 083
Mobile Combustion	75	0.40	1.58	77
<b>TOTAL</b>	<b>39 041</b>	<b>98.4</b>	<b>20.6</b>	<b>39 160</b>

Scope 2 emissions are indirect emissions from imported energy. Hitit Seramik's Scope 2 emissions consist of electricity consumption. It has been observed that Scope 2 emissions have a share of approximately 10% in the total corporate carbon footprint.



Table 8. Distribution of Scope 2 Emissions

Scope2 Activities	ton CO <sub>2</sub> eq.	%
Purchased Electricity	15 373	100%

Scope 3 emissions refer to the sum of indirect emissions in the entire value chain before and after production. The distribution of Hitit Seramik's Scope 3 emissions by activities is as follows.

Table 9. Distribution of Scope 3 Emissions (GHG Protocol)

Activities	ton CO <sub>2</sub> eq.	%
Purchased Goods and Services	12 877	16.3%
Capital Goods	372	<1%
Energy-Related Activities	10 154	12.9%
Upstream Transport	30 476	38,7%
Wastes	18	<1%
Business Travel	7 912	10.0%
Employee Commuting	0	<1%
Downstream Transportation	10 799	13.7%
Processing of Sold Products	6 105	7.75%
Use of Sold Products	0	<1%
End-of-Life Treatment of Sold Products	56	<1%
<b>TOTAL</b>	<b>78 769</b>	<b>100%</b>

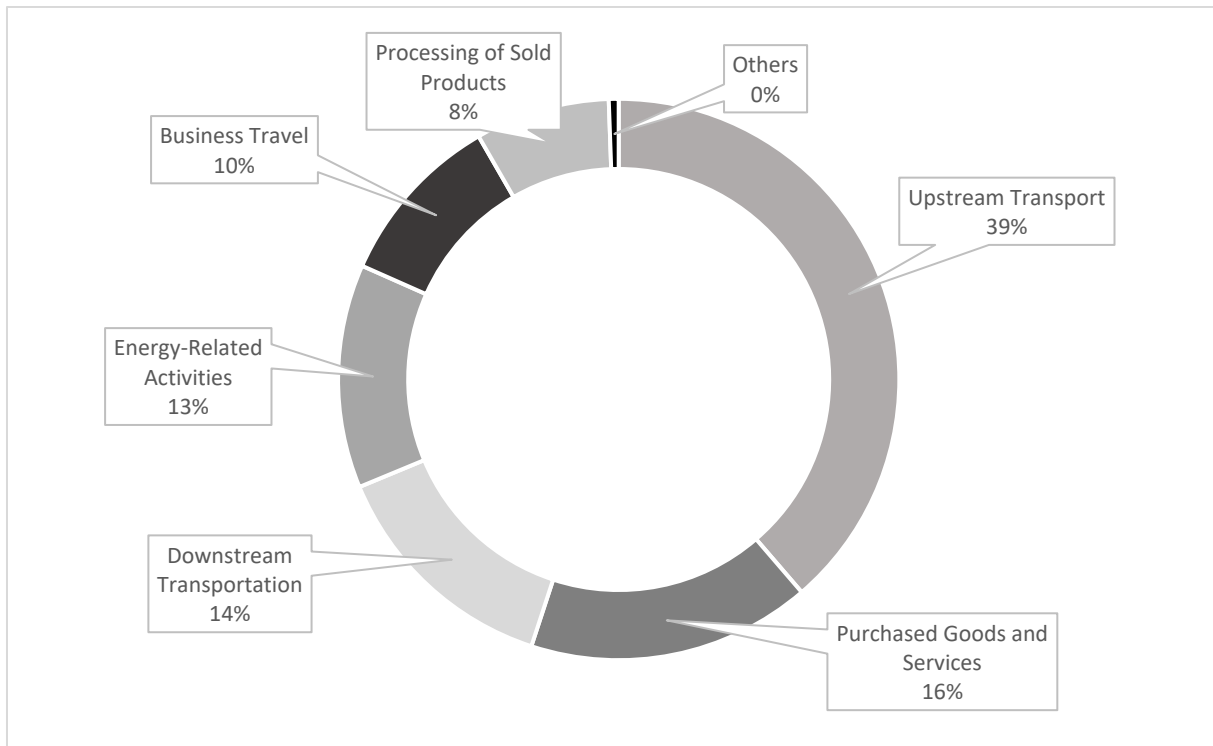


Figure 5. Distribution of Scope 3 Emissions

## 5.2 Uncertainty Analysis

The uncertainty analysis aims to make a technical contribution to decision making by quantifying the uncertainties in the relevant variables within the calculation. Within the scope of the corporate carbon footprint study of Hitit Seramik, an uncertainty calculation was made for the year 2022; Scope 1 and Scope 2 total uncertainty: +- 1.2%; Data acuity is classified as "High". Scope 1, Scope 2 and Scope 3 cumulative uncertainty values were calculated as +- 1.8%. In this context, it has been observed that it works within reasonable confidence level values.

In the uncertainty level calculation study, the uncertainty matrix was used, and the matrix and evaluation criteria are shown in the table below. In the calculation of the uncertainty level, firstly, the data acquisition method and the uncertainty value (%) of this method and the emission factor supply method and the uncertainty value of this method (%) were chosen in order to determine the uncertainty value at the percentage rate. The uncertainty value (%) is determined by choosing the method that is higher than the uncertainty values and belonging to this value.

Table 10. Uncertainty Evaluation Matrix

Data Supply Method	Emission Factor Supply Method	Uncertainty Value (%)
Measuring Device Subject to Legal Metrological Control	IPCC	1.5
Calibration Date Current Meter	Internationally Accepted Data (Ecoinvent 3.8)	1.5
Calibration Date Not Valid / No Calibration	National inventories of countries	2.5
Labeled Supplier Data (Gas Filling Capacity etc.)	Labeled Supplier Data (MSDS etc.)	3.5
Supplier Data / Statement to the Ministry	Supplier Data	5
Distance Measurement Programs (Google maps etc.)	Assumptions	7

## 5.3 Base Year Selection

The base year for the Calculation and Verification of the Greenhouse Gas Emissions of Hitit Seramik has been accepted as 2023. The base year covers the day range from 01.01.2023 to 31.12.2023.

The greenhouse gas inventory determined by this report will constitute an input to Hitit Seramik's annual activity reports.

## 6. HOT SPOT ANALYSIS and FINAL EVALUATION

As a result of the corporate carbon footprint study, the carbon footprint stemming from all activities of Hitit Seramik was calculated and hot spots were determined.

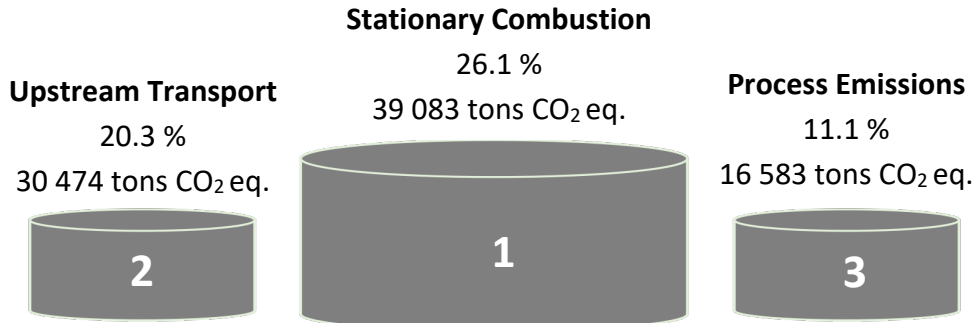


Figure 6. Hot Spot Analysis

When the emission source values are listed from largest to smallest, the top three titles are shown in Figure 6. Emissions from stationary combustion, which correspond to approximately 26.1% of the total emissions, are related to the fossil fuels used within the facility. At this point, it is recommended to reduce consumption by investing in energy efficiency activities and using waste heat. In addition, if technically alternative processes are electrified and electricity needs are met from renewable sources, there will be a significant decrease in emissions from stationary combustion. In addition to such serious changes, it will be advantageous to reduce consumption and indirectly emissions through energy efficiency projects in processes.

Raw material transportation constitutes the second hot spot. It has a share of 20.3% in total emissions. In the transportation process, where road transportation is used at a high rate, it can be aimed to reduce transportation-related impacts by using options such as route optimization and local purchasing.

Process emissions stood out as the 3rd hot spot. It has a share of approximately 11.1% in total emissions. Following sustainable purchasing policies in raw material supply selection, using low thermal mass materials instead of conventional raw materials and choosing low-emission clays, using supplier-specific data and turning to low-emission raw materials as purchasing criteria can be considered as emission opportunities in terms of raw material supply.

As a result of these calculations and evaluations, Hitit Seramik will consider the results of climate change and carbon footprint in its future management and investment plans.

**HİTİT SERAMİK**