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RTC KİMYA 2024 CORPORATE GREENHOUSE GAS EMISSION INVENTORY AND REPORT

In this report, RTC Kimya İth. Ihr. San. Ltd. Sti.
The Greenhouse Gas Emission Inventory and Corporate Carbon Footprint resulting from the activities carried out between January 1, 2024 and December 31, 2024 are presented.

Report Date: 20.10.2025

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LIST OF ABBREVIATIONS AND TERMS

Uncertainty	Parameter related to the result of the calculation that can be associated with the specified quantities and shows the distribution of values.
CFC	Chlorofluorocarbons
CH4	Methane
CO2	Carbon dioxide
Direct Greenhouse gas emissions	Greenhouse gas emissions from greenhouse gas sources owned or controlled by an organization
Other Indirect Greenhouse gas emissions	Greenhouse gas emissions from greenhouse gas sources owned or controlled by other organizations as a result of an organization's activities
DEFRA	UK Department for Environment, Food and Rural Affairs Environment, Food & Rural Affairs)
Verification	Systematic, independent and documented process for the evaluation of GHG declaration according to accepted verification criteria
Verifier	Authorized and independent person or persons responsible for performing and reporting the verification process
Emission factor	A unit of activity data of greenhouse gas emissions (e.g. fuel consumed in tons, product produced in tons) and a factor (EF) that enables the calculation of final greenhouse gas emissions
Energy Indirect Greenhouse gas emissions	Electricity, heat consumed by an organization by supplying it from outside or greenhouse gas emissions generated during the production of steam
EPA	United States Environmental Protection Agency (United States Environmental Protection Agency)
Trust level	Requested by the target user in the confirmation or verification Degree of trust
GWh	Gigawatt-hour
GWP	Global warming potential (GWP)
HCFC	Hydrochlorofluorocarbons
IPCC	Intergovernmental Panel on Climate Change Climate Change)
I-REC	International Renewable Energy Standard (International Renewable Energy Certification Standard)
ISO	International Organization for Standardization Standardization)
CO2e	Carbon dioxide equivalent
kWh	Kilowatt Seed (Kilowatt-hour)
N2O	Nitrous oxide

PFC	Perfluorocarbons
Greenhouse Gas	Both the natural and anthropogenic gas component of the atmosphere, absorbed and released by the earth, atmosphere, and clouds at specific wavelengths in the infrared radiation spectrum range
Greenhouse Gas Emission	The total amount of greenhouse gases released into the atmosphere in a certain period of time Mass
Greenhouse Gas Inventory	Information about an organization's greenhouse gas sources, greenhouse gas sinks, greenhouse gas emissions, and greenhouse gas removals
Greenhouse Gas Activity Data	Activity that results in the emission or removal of a greenhouse gas quantitative measure
Greenhouse Gas Source	A physical unit or process that releases greenhouse gases into the atmosphere
Greenhouse Gas Report	Independent document prepared to communicate an organization's or project's information on greenhouse gases to its intended users
Greenhouse Gas Removal	One of the greenhouse gases removed from the atmosphere in a certain period of time Total mass
Base year	A period in the past designated for future comparison of greenhouse gas emissions or removals or other information on greenhouse gases
SF6	Sulfur hexafluoride
TJ	Terajoule
TSE	Turkish Standards Institute
YSC	Fire Extinguishing Devices
WTT	Upstream emissions generated during the extraction, processing, etc. of fuels until they reach the tank (Well-to-Tank emissions)

ABSTRACT

This report was prepared by RTC Kimya İth. İhr. San. Ltd. Sti. (RTC Kimya) between January 1, 2024 and December 31, 2024, and accordingly presents the Corporate Carbon Footprint. The inventory and report have been prepared *to meet the reporting requirements of the* TS EN ISO 14064-1:2019 "Greenhouse Gases – Part 1: Guidelines and Conditions for the Calculation and Reporting of Greenhouse Gas Emissions and Removals at the Organization Level" standard.

Within the scope of this study, greenhouse gas emissions arising from RTC Kimya's activities at the relevant location in Çayırova/Kocaeli were evaluated together with their sources and classified according to the relevant categories. Within the scope of Category 1; natural gas consumption for production and heating purposes, fuel consumption of vehicles owned or controlled by the company, and leakage emissions of refrigerants and fire extinguishers are calculated as direct emissions. Within the scope of Category 2, indirect greenhouse gas emissions from the use of electrical energy were calculated. Within the scope of Category 3; transportation of raw materials and products by land and sea, personnel commuting, emissions from customer visits, and indirect greenhouse gas emissions from business trips and accommodation were taken into account. Within the scope of Category 4; Emissions from purchased raw materials, packaging materials and office supplies, water supply and waste disposal, and emissions from food, security, various professional, scientific and technical consultancy services were taken into account. However, embedded carbon emissions from the purchase of laboratory devices, laptops, forklifts and similar tools and equipment, and the installation of Solar Power Plants (SPP); in addition, transmission and distribution (T&D) and pre-production (WTT, Well-to-Tank) emissions related to electricity consumption were also evaluated under this category and included in the Corporate Greenhouse Gas Emission Inventory.

In inventory calculations, the 6th Amendment, which is the most up-to-date source available published by the IPCC (Intergovernmental Panel on Climate Change). Global warming potentials (GWP, GWP) in the Assessment Report (AR6) were used. For the ratios for refrigerant gas mixtures, IPCC Volume 3, Chapter 7 is taken as a source and included in the calculations. As a result of the calculations, RTC Kimya's total greenhouse gas emissions in 2024 were calculated as 28,396.97 tons of CO_2e (CO_2 equivalent). Category 3 emissions account for approximately 52% of the total amount of greenhouse gas emissions, while Category 4 emissions account for approximately 46% of the total amount of greenhouse gas emissions. Details about the calculation results are given in the Section. The total corporate carbon footprint is presented in Table 1 and Table 2 on the basis of main and sub-categories.

Table 1. RTC Kimya Corporate Carbon Footprint in 2024

Categories		Location-Based (tonsCO_2e)	Market-Based* (tonsCO_2e)
Category 1	Direct Greenhouse Gas Emissions	139,90	139,90
Category 2	Indirect Greenhouse Gas Emissions from Purchased Energy **	379,60	379,60
Category 3	Indirect Greenhouse Gas Emissions from Transportation	14.736,67	14.736,67
Category 4	Indirect Greenhouse Gas Emissions from Products and Services Used by the Organization	13.140,81	13.140,81
Category 5	Indirect greenhouse gas emissions from the post-production use of products produced by the organization	-	-
Category 6	Indirect greenhouse gas emissions from other sources	-	-
TOTAL		**28.396,97**	**28.396,97**

** Since renewable energy certificates (REC, I-REC, etc.) are not purchased in 2024, location-based and market-based greenhouse gas emissions are equal.*

*** In the reporting year, 187,530.62 kWh of renewable energy (SPP) was produced and used within the company.*

Table 2. RTC Kimya Total Greenhouse Gas Emissions in 2024 (Based on Subcategories)

Categories			Scope and Resources	Location-Based (tonnes CO2e)	Market-Based (tonnes CO2e)*
Category 1	Category 1.1	Direct emissions from stationary combustion	Use of natural gas for production and heating purposes	100,01	100,01
	Category 1.2	Moving without burning originating from Direct Emissions**	Fuel (diesel and gasoline) consumption of vehicles and forklifts owned or controlled by the company	35,17	35,17
	Category 1.3	Originating from industrial processes Direct process emissions	No process-related greenhouse gas emissions were detected.	-	-
	Category 1.4	Direct emissions from leakage/leakage of greenhouse gases in anthropogenic systems	Refrigerant gas leaks caused by cooling systems such as air conditioners, chillers and dispensers and losses/leaks caused by fire extinguishers	4,71	4,71
	Category 1.5	Direct emissions and removals from land use, land use change and forestry (LULUCF) activities	Not available in the relevant reporting period.	-	-
Category 2	Category 2.1	Indirect emissions from the consumption of electricity purchased by the organization***	Use of electrical energy	379,60	379,60
	Category 2.2	Indirect emissions from the consumption of other energy purchased by the organization	In the relevant reporting period; no use/purchase of steam, heat or cooling energy is available.	-	-
Category 3	Category 3.1	Emissions from the transportation or distribution of goods (to the organization)	Transportation of raw materials to the company by sea or road	1.437,79	1.437,79
	Category 3.2	Emissions from the transportation or distribution of goods (outbound)	Transportation of products to customers by sea or road	13.275,02	13.275,02
	Category 3.3	Emissions from staff commuting	Employee service usage	10,98	10,98
	Category 3.4	Customer and visitor emissions	Customers' visits to the company for business purposes	0,19	0,19
	Category 3.5	Emissions from business travel and accommodation	Business trips and domestic/international stays	12,69	12,69

Categories			Scope and Resources	Location-Based (tonnes CO2e)	Market-Based (tonnes CO2e)*
Category 4	Category 4.1	Emissions from purchased raw materials/finished products/semi-finished products, etc., emissions from water supply, and WTT and T&D emissions associated with the manufacture of the product	• Water supply with purchased raw materials, packaging materials, office supplies • Extraction, processing and transportation of fuels • Electricity generation and transmission distribution losses	8.766,23	8.766,23
	Category 4.2	Emissions from capital assets (movable & immovable)	Non-current assets (capital assets) purchased in the relevant reporting period	4.359,78	4.359,78
	Category 4.3	Emissions from the disposal of solid and liquid wastes	Wastewater treatment with mixed packaging and other hazardous waste disposal	0,48	0,48
	Category 4.4	Emissions from the use of equipment leased by the reporting organization	Not available in the relevant reporting period.	-	-
	Category 4.5	Emissions from service procurement of the reporting organization	Procurement of services such as catering, cleaning, security, various professional, scientific and technical consultancy, etc	14,32	14,32
Category 5	Category 5.1	Products Usage from the phase Emissions from	It is out of scope due to the type of products produced.	-	-
	Category 5.2	Emissions resulting from leasing the assets owned by the organization in the reporting year	Not available in the relevant reporting period.	-	-
	Category 5.3	Of the product Usage Emissions after end-of-life	It is out of scope due to the type of products produced.	-	-
	Category 5.4	Emissions associated with financing by financial institutions	It is out of scope.	-	-
Category 6		Indirect greenhouse gas emissions from other sources	Not available in the relevant reporting period.	-	-
TOTAL				**28.396,97**	**28.396,97**

** Since renewable energy certificates (REC, I-REC, etc.) were not purchased in 2024, location-based and market-based greenhouse gas emissions are equal*

*** Specific data on generator diesel usage could not be provided. Since diesel fuels for forklifts are also used in generators, all emissions from diesel consumption are calculated under Category 1.2.*

In the reporting year, the company produced and used 187,530.62 kWh of renewable energy (SPP).

1. INTRODUCTION

RTC Kimya was established in 2009 and produces chemical glue and resin for the food industry. The company, which attaches importance to R&D studies with the aim of reducing import dependency, added an ink production line to its product line in 2022. In addition, RTC Kimya, which also produces polyurethane-based resins and glues, offers lamination adhesives and packaging ink binders to food packaging manufacturers with its expertise (NACE Code: 20.52.05 - Glue manufacturing (casein-based, animal-based, starch-based, rubber-based, plastic-based, polymer-based, etc.)).

This report covers all activities carried out at RTC Kimya's facility located at Şekerpınar mah, Fevzi Çakmak cad. Menekşe sok. No 4, 41420 covers all the activities carried out at the Çayırova/Kocaeli location.

RTC Kimya, acting with the awareness of its responsibilities towards the environment, people and the business world, it prioritizes environmental management, energy efficiency and sustainability in all its activities. In order to reduce its impact on climate change, the Company carried out the Corporate Carbon Footprint calculation for the first time this year and started to follow the process by setting emission reduction targets. In addition, it evaluates the potential effects of climate change on its own operations, analyzes risks and develops action plans. In this context, RTC Kimya, which carries out studies to increase climate resilience, simultaneously prepares its first sustainability report and aims to report regularly every year.

2. PURPOSE AND SCOPE

2.1. Purpose of the Report

This study aims to evaluate the greenhouse gas emissions arising from RTC Kimya's activities and their effects on climate change, to calculate the Corporate Carbon Footprint to evaluate short-term and long-term carbon management targets, and to take a more active role in sustainability issues through internal awareness raising activities.

Greenhouse gas emissions have been *calculated in accordance with the TS EN ISO 14064-1:2019* standard. The company aims to progress by reporting in accordance with international standards and measuring its environmental impacts in production processes.

Aiming to strengthen its sustainability vision, RTC Kimya aims to provide both internal operational benefits and strengthen its corporate reputation by increasing transparency in relations with external stakeholders through its corporate carbon footprint study. Increasing transparency in resource and energy consumption, monitoring the greenhouse gas emission inventory by responsible teams, identifying emission reduction opportunities specific to production processes, developing internal awareness, and identifying the risks and opportunities that climate change may bring in advance and planning the necessary actions are among the important outputs of this process. With this first report, RTC Kimya aims to fulfill its environmental and social responsibilities more strongly by improving its corporate carbon management practice and continues its work.

2.2. Scope of the Report

This report, prepared within the framework of the TS EN ISO 14064-1:2019 *"Greenhouse Gases – Part 1: Guidelines and Specifications for the Calculation and Reporting of Greenhouse Gas Emissions and Removals at the Organization Level"* standard, includes the calculation methodology and results of direct greenhouse gas emissions, energy-related indirect greenhouse gas emissions and other indirect emissions resulting from the activities carried out by RTC Kimya between January 1, 2024 and December 31, 2024.

This study covers the activities of RTC Kimya in this reporting period and includes greenhouse gas sources collected under the headings of Category 1 (Direct Emissions), Category 2 (Purchased Energy Emissions), Category 3 (Indirect Emissions from Transportation) and Category 4 (Other Indirect Emissions Related to Products and Services Purchased by the Organization).

Within the scope of Category 1, the use of natural gas for production and heating purposes, emissions from fuel consumption of vehicles and forklifts owned or controlled by the company, refrigerant gas leaks caused by cooling systems such as air conditioners and chillers, and losses/leaks caused by fire extinguishers are taken into account as direct emissions.

Under Category 2, indirect emissions from electricity use were calculated.

Within the scope of Category 3, emissions from the transportation of raw materials and products by road and sea, which are an important part of the operation, emissions from personnel commutes, customers and visitors, and indirect emissions from business travel and accommodation were addressed.

Within the scope of Category 4; Emissions from the purchase of raw materials, packaging and office supplies, water consumption, waste disposal, food, cleaning, security, various professional, scientific and technical consultancy, etc. and embedded carbon emissions arising from the purchase of capital assets are included in the inventory. In addition, WTT (Well-to-Tank) emissions generated during the extraction, processing and transportation of fuels and emissions from electricity WTT and transmission and distribution (T&D) losses are also included in the inventory.

All greenhouse gas emissions have been calculated using the most up-to-date and reliable sources. These include the IPCC 2006 Greenhouse Gas Calculation Guidance Documents, IPCC 6. Assessment Report (AR6), DEFRA (Department for Environment, Food & Rural Affairs) emission factors dataset and 2022 EPA EEIO (Environmental Protection Agency - Environmentally Extended Input-Output Model) emission factors dataset, national electricity emission factor (EF) of the Ministry of Energy and Natural Resources of the Republic of Turkey, international EPD documents, scientific reports and articles.

With this inventory study, RTC Kimya aims to contribute to the fight against climate change and strengthen its sustainability roadmap with concrete data by transparently revealing its environmental impacts.

3. TS EN ISO 14064-1:2019 STANDARD COMPLIANCE

This Corporate Greenhouse Gas Inventory and Report has been prepared in accordance with Article 9.2 of the TS EN ISO 14064-1: 2019 standard and the content of the report is presented in accordance with Article 9.3 of TS EN ISO 14064-1: 2019. The report includes what is expected by the standard under Article 9.3.1 Required information and also takes into account the recommended items under Article 9.3.2 Recommended information.

4. DEFINITION OF ORGANIZATION

RTC Kimya was established in 2009 and operates for the chemical glue and resin needs of the food industry. The company, which aims to produce the chemical materials required for this industry, continues to grow in parallel with the developments in the food sector. RTC Kimya, which carries out important R&D activities in the sector, keeps continuous development activities at the center of its investments. In 2022, Crossink was added to the product line. In the same year, a solar energy system was installed and started to be used for sustainable living.

Serving in its facility established on an area of 7000 m2, RTC Kimya produces laminating glue for food packaging manufacturers and binding polyurethane resin and packaging ink for food packaging ink production with its knowledge in polyurethane polymer.

The company operates in Çayırova/Kocaeli and does not have any other operational location. As of 31.12.2024, the company employs 35 people (Art. 9.3.1 a).

4.1. TS EN ISO 14064-1: 2019 Greenhouse Gas Calculation and Reporting Principles

The greenhouse gas calculation and reporting principles adhered to within the scope of this Corporate Greenhouse Gas Emission Inventory and Report *are based on five basic principles defined in the* TS EN ISO 14064-1:2019 standard, and these principles are stated below:

1. **Relevance: GHG** sources, GHG sinks, GHG reservoirs, data, and methodologies are selected to suit the target user's needs.
2. **Integrity:** Includes all relevant greenhouse gas emissions and removals.
3. **Consistency: It** allows meaningful comparison of information about greenhouse gases.
4. **Accuracy:** Systematic errors and uncertainties are reduced as much as possible.
5. **Transparency:** Adequate and appropriate information on greenhouse gases is disclosed to allow target users to make decisions safely.

The emission inventory prepared in line with these principles makes a significant contribution to the systematic management of RTC Kimya's environmental responsibilities, the assessment of emission reduction potential and a transparent sustainability reporting process.

5. ESTABLISHMENT AND ACTIVITY LIMITS

5.1. Responsible Team

Within the scope of the preparation of RTC Kimya's annual Corporate Greenhouse Gas Inventory and Report; all data on each emission source were provided by the relevant unit personnel. The persons responsible for the provision of the data used in the report and their duties within the scope of reporting are given in Table 3 (Article 9.3.1 b).

Table 3. Responsible Persons for the Preparation and Reporting of the Greenhouse Gas Inventory

Responsible	Corporate Position	Contact Information	Mission
Gülşah Çamlıbel	Type and Sustainability Manager	gulsahc@rtcchem.com	• Coordinator of the SGE management system • Calculation of greenhouse gas emissions and support in the preparation of the report • Supply of wastes
Günnur Cengiz	Supply Chain Manager	gunnurc@rtcchem.com	• Raw material purchase quantities and provision of data on raw material transportation • Obtaining data on foreign sales amounts and product transportation • Obtaining data on fuel consumption of vehicles under the control of RTC Kimya • Provision of data on purchased packaging and office supplies • Compilation of personnel transportation data
İlker Bilgin	Production Manager	ilkerb@rtcchem.com	• Creating an inventory of air conditioners and refrigerant gases, providing relevant data • Creation of an inventory of Fire Extinguishing Devices (YSC), provision of relevant data
Vural Akarsu	Finance Manager	vurala@rtcchem.com	• Provision of data related to service procurement • Provision of data on diesel consumption of forklifts • Provision of data on capital assets
Neriman Öz Kılıç	Administrator Assistant	nerimanok@rtcchem.com	• Provision of data on business trips and accommodation • Provision of data on customer visits
Osman Yetişkin	Accounting Unit Supervisor	osmany@rtcchem.com	• Compilation of consumption data of natural gas, electricity, water, etc. resources from records/invoices • Compilation of domestic sales data

5.2. Organization Boundaries - Geographical Boundaries

Information about RTC Kimya's facility in Kocaeli, where it carries out its production activities, is presented in Table 4.

RTC Kimya produces a wide range of products in this facility (9.3.1 d).

Table 4. Information on the Establishment Limit

Company Name	Address Information	Activity Information
RTC Kimya İth. Ihr. San. Ltd. Sti.	Şekerpınar mah., Fevzi Çakmak cad. Menekse sok. No 4, 41420 Çayırova/Kocaeli	NACE Code: 20.52.05 - Manufacture of glue (casein based, animal based, starch based, rubber based, plastic based, polymer based, etc.

The company operates at Çayırova/Kocaeli address and does not have a branch or any other location that it uses operationally.

5.3. Operational Limits

In determining greenhouse gas emissions, the "operational control" approach, which is the data collection method for the year of monitoring and reporting and specified *in Article 5.1 an" of the TS EN ISO 14064-1: 2019* standard, was applied. The reason for this is; the company has full management authority over day-to-day operational activities; the traceability of emission data and the applicability of mitigation measures are high. In accordance with this approach, all greenhouse gas emission sources of 1 campus under RTC Kimya's own financial and administrative control were included in the inventory and all activities were taken into account.

There is no heat or steam generation produced by RTC Kimya for export, domestic sale or distribution. A Solar Power Plant (SPP) was established within RTC Kimya in 2022 and its capacity is 400 kW. In the reporting year, 187,530.62 kWh of renewable energy was produced, and no sales were made to the grid as the total electricity need was not met.

There is no activity related to the use of biomass within the operational boundaries of RTC Kimya.

5.4. Reporting Limits

While determining the activity limits of the organization, *the definitions made by the TS EN ISO 14064-1: 2019* standard were taken into account. In this context, *the greenhouse gas emission sources generated as a result of the activities of the organization within the geographical boundaries determined in Section 5.2 have been determined and the inventory scope has been determined by dividing them as direct (Category 1), energy indirect (Category 2) and other indirect (Category 3 and 4) greenhouse gas emissions (9.3.1 e).*

This reporting period covers the period from 1 January 2024 to 31 December 2024 (both days inclusive) (9.3.1 b).

The categories in the TS EN ISO 14064-1: 2019 standard are given in Annex 1 as a summary and the details are explained below.

5.4.1 Category 1: Direct Greenhouse Gas Emissions

Category 1 covers emissions from greenhouse gas sources owned or controlled by an organization. The Category 1 greenhouse gas emission sources owned and controlled by RTC Kimya are given below:

- ✓ Category 1.1. Fuels consumed in fixed combustion systems: Natural gas (production and building heating systems)
- ✓ Category 1.2. Fuels consumed in mobile combustion systems: Gasoline and diesel consumption in vehicles (Since diesel fuels purchased for forklifts are also used in generators, all emissions from diesel consumption are calculated under Category 1.2.)
- ✓ Category 1.4. Refrigerants and fire extinguishers: HFC and HCFC gases (R32, R134A and R410A) and CO2-based fire extinguishers used in refrigeration and air conditioning devices

5.4.2 Category 2: Energy Indirect Greenhouse Gas Emissions

Category 2 covers greenhouse gas emissions generated during the generation of electricity, heat, or steam consumed by an organization by outsourcing it. All of the electricity consumed within the scope of RTC Kimya's activities has been evaluated as a Category 2.1 greenhouse gas emission source. During the reporting year, no energy was purchased other than the sources specified by RTC Kimya.

5.4.3 Category 3: Indirect Greenhouse Gas Emissions from Transportation

Category 3 covers emissions from transportation such as transportation, shipping, business travel, which are not included in the organization's operating boundaries but are included in the supply chain, owned or controlled by other organizations. RTC Kimya's Category 3 greenhouse gas emission sources are given below:

- ✓ Category 3.1. Road and sea transportation of purchased raw materials
- ✓ Category 3.2. Road and sea transportation of products
- ✓ Category 3.3. Staff commutes
- ✓ Category 3.4. Customer visits
- ✓ Category 3.5. Business trips and accommodations

5.4.4 Category 4: Indirect Greenhouse Gas Emissions from Products or Raw Materials Used by the Organization

Category 4 covers emissions from products or raw materials used by the organization, fixed assets/capital assets. RTC Kimya's Category 4 greenhouse gas emission sources are given below:

- ✓ Category 4.1. Raw materials, packaging and office supplies, water supply, WTT emissions of fuels consumed by RTC Kimya, WTT emissions from electricity generation and electricity transmission and distribution losses
- ✓ Category 4.2. Capital assets purchased in the reporting year
- ✓ Category 4.3. Disposal of solid wastes (mixed packaging wastes and other hazardous wastes) generated in RTC Kimya's operations and wastewater treatment
- ✓ Category 4.5. Services purchased in the reporting year (procurement of services such as catering, cleaning, security, various professional, scientific and technical consultancy, etc.)

6. METHODOLOGY

6.1. Calculation Methodology

Greenhouse gas emissions resulting from the activities carried out by RTC Kimya at its Çayırova/Kocaeli location; It was calculated by multiplying the activity data and the appropriate emission factors using the "Calculation-Based Approach" and the "Standard Method". This method is determined in the most appropriate way for existing data sources, ensuring accuracy and consistency in calculations and minimizing uncertainties.

In this context, the Tier 1 approach defined in the IPCC 2006 Greenhouse Gas Calculation Guidance Documents, IPCC 2006 Good Practice Guidelines and Uncertainty Management in National Inventories *documents was applied* in the calculation of direct greenhouse gas emissions (Category *1).* This approach aligns with the current level of detail of the activity data, ensuring a reliable calculation.

Energy indirect greenhouse gas emissions (Category 2) were *calculated using the Turkey-wide Electricity Generation Emission Factor* published in the *Turkey Electricity Generation and Consumption Point Emission Factors Information Form*. A Tier 2 approach was adopted for this category, so that calculations were carried out with a country-specific and up-to-date data set.

In the calculation of other indirect greenhouse gas emissions (Categories 3 and 4), the 2025 *DEFRA (emission factors dataset* and *the 2022 EPA EEIO* emission factors dataset, EPD documents, international scientific reports and articles were used. These sources provide comprehensive and up-to-date emission factors for categories such as supply chain, service procurement and consumption items.

Emission factors were calculated separately for each greenhouse gas (CO2, CH4, N2O, HFC and other mixed gases) from the above-mentioned sources and expressed in CO_2 using the Global Warming Potential (GWP, GWP) values of the relevant gases (9.3.1 f). The greenhouse gases evaluated within the scope of this inventory and the global warming potentials used are given in Table 5, and the greenhouse gas amounts calculated within the scope of Category 1 are given in Table 6.

Table 5. Global Warming Potentials (GWP, GWP)

Greenhouse Gas	GWP-100	Source
Carbon dioxide (CO2)	1,0	IPCC 6. Evaluation Report, Table 7.SM.7
Methane (CH4)	27,9	IPCC 6. Evaluation Report, Table 7.SM.7
Nitrous oxide (N_2O)	273,0	IPCC 6. Evaluation Report, Table 7.SM.7
R32	771,0	IPCC 6. Evaluation Report, Table 7.SM.7
R134A	1.530,0	IPCC 6. Evaluation Report, Table 7.SM.7
R410A (HFC-32/HFC-125)	2.255,5	IPCC 6. Assessment Report, Table 7.SM.7 and IPCC 2006, Volume 3, Chapter 7, Table 7.9

Table 6. Greenhouse Gas Amounts Calculated Under Category 1

Category 1	your CO_2	your CH_4	ton N_2O	your HFC	your CO_{2nd}
Category 1.1 Steady Combustion	99,911	0,002	0,000	0,000	100,009
Category 1.2 Mobile Combustion	34,463	0,009	0,002	0,000	35,173
Category 1.4 Refrigerant Gases	0,000	0,000	0,000	2,111	4,711
Category 1.4 Fire Extinguisher Devices	0,001	0,000	0,000	0,000	0,001
Total	**134,376**	**0,011**	**0,002**	**2,111**	**139,894**

6.2. Emission Sources

Within the scope of this report, the current list of greenhouse gas emission sources for the reporting period for RTC Kimya is given in Annex 1 (9.3.1 f).

6.3. Data Characteristic/Type

All activity data used within the scope of the study are primary data (3.2.2).

6.4. Excluded Emissions

All *greenhouse gas emission sources that fall within the institutional limits specified in Section 0 of the report and are within the scope of the control approach principle are included in this inventory.*

6.5. Operating Data Sources and Acceptances in Calculations

6.5.1 Acceptances in Category 1 Calculations

Calculation of Natural Gas-Related Emissions (Category 1.1):

- Data on the amount of natural gas consumed by RTC Kimya at its campus in Çayırova/Kocaeli in 2024 was obtained monthly from the invoices issued by PALGAZ.
- The lower calorific value of natural gas was taken as 8,250 kCal/m^3.[1]
- While converting the consumption data from kCal to Joule (J), the equation 1 kCal = 4.184 kJ was used. Afterwards, the Joule value was converted to TeraJoule (TJ) and the equation 1 TJ=10^9 kJ was taken as a basis.
- In the calculation of natural gas boiler combustion, the oxidation coefficient was taken as 1 by assuming that all of the fuel was burned.

[1] Regulation on Increasing Efficiency in the Use of Energy Resources and Energy, Annex-2, Lower Calorific Values of Energy Resources and Conversion Coefficients to Oil Equivalent, https://www.resmigazete.gov.tr/eskiler/2011/10/20111027-5.htm

Calculation of emissions from vehicles whose fuel consumption is controlled by RTC Kimya (Category 1.2):

- The fuel consumption of all terrestrial vehicles used by RTC Kimya in its activities is included in the scope.
- Data on fuel consumption (gasoline and diesel) were obtained from Karlas Fuel invoice consumption reports on a monthly basis.
- Since the amount of fuel in the tanks of the vehicles could not be determined on the start and end days of the reporting period, it was accepted that the vehicles started the year with an empty fuel tank and that all of the fuel in the tank was burned at the end of the year.
- In 2024, data on the amount of diesel purchased for forklifts was pulled from the system. Diesel fuels purchased for forklifts were also used in generators. Since data on generator diesel consumption could not be provided, all emissions from diesel consumption were classified as Category
  Calculated under 1.2.
- Gasoline density is accepted as 0.735 kg/L.
- Diesel density is accepted as 0.83 kg/L.

Calculating Emissions from Refrigerant Gas Leaks (Category 1.4):

- While calculating the refrigerant gas leakage emissions of the cooling and air conditioning devices in the covered production area and offices, the leakage rates are 1% for each air conditioner, 1% for the chiller.
  It was accepted as 2%. While this acceptance was made, the relevant source *7. The* lowest leakage rate predicted for the relevant groups in Table 7.9 is taken into account[2].
- There was no filling in 2024.

Calculation of Emissions from Fire Suppression Systems (Category 1.4):

- Although there are also PPE (Dry Chemical Powder) based fire extinguishers belonging to the company, fire extinguishers that cause greenhouse gas emissions and contain CO2 gas were taken into account within the scope of the study.
- The gas leakage rate in CO2 fire extinguishers is accepted as 4%[3].
- There was no filling in 2024.

[2] 2006 IPCC Guidelines for National Greenhouse Gas Inventories Vol. 3, Industrial Processes and Product Use, Chapter 7. Emissions of Fluorinated Substitutes for Ozone Depleting Substances, Section 7, Table 7.9

[3] IPCC/TEAP Special Report: Safeguarding the Ozone Layer and the Global Climate System, Volume 4.6, What are the most important findings for fire protection, page 72

6.5.2 Acceptances in Category 2 Calculations

Calculation of Electricity-Related Emissions (Category 2.1):

- The electricity consumption amounts used in RTC Kimya's operations were obtained from VTC Enerji electricity bills in the reporting period.
- In addition, the amount of electrical energy consumed within the scope of active draft was obtained from the SPP data table.
- In the reporting year, 187,530.62 kWh of renewable energy was generated (SPP, active output). The greenhouse gas emission factor due to the use of electricity generated from renewable energy systems (e.g. solar, wind, hydroelectric) has been adopted as '0' based on the GHG Protocol Scope 2 Guidance (2015) and the IPCC 2006 Guidelines for National Greenhouse Gas Inventories.

6.5.3 Acceptances in Category 3 Calculations

Transportation of Purchased Raw Materials (Category 3.1):

- All data of the raw materials purchased by RTC Kimya are included in the system. In this context, all quantitative data were obtained by pulling directly from the system.
- It has been determined that the raw materials are transported both by sea and road. Information on the ports used during transportation was obtained from the Supply Chain Directorate.
- In the highway calculations, the exit locations of the imported/purchased raw materials were determined and RTC Kimya Depot was accepted as the destination location. Distances (km) are calculated using Google Maps (https://www.google.com/maps).
- In the maritime calculations, the exit locations of the imported/purchased raw materials were determined and RTC Kimya Depot was accepted as the destination location. The distances between ports used during maritime transportation were calculated using the EcoTransIT World (https://emissioncalculator.ecotransit.world/) web page. The distances (km) from the relevant ports to RTC Kimya Depot were calculated using Google Maps (https://www.google.com/maps).
- The activity data (ton*km) was determined by multiplying the quantity data (tons) with the distance traveled data (km).
- In maritime transportation calculations, the return voyage (ballast) of the ship was also taken into account, and since there was no fuel data, half of the total ton.km data was taken as activity data, as is widely practiced in international studies (distance-based estimation approach).
- In road transport calculations, all ton.km total activity data were used, and the Average Heavy Vehicles (All HGVs) – 50% occupancy value was selected as the emission factor (EF).

Transportation of Products (Category 3.2)

- RTC Kimya's production data (tons) for 2024 has been pulled directly from the system.
- It has been determined that the products are transported to customers mainly by road but also by sea. Floor until the products reach the customer institutions from the RTC Chemical Warehouse.

The distance data was calculated using EcoTransIT World (https://emissioncalculator.ecotransit.world/) and Google Maps (https://www.google.com/maps).

- The activity data (ton*km) was determined by multiplying the quantity data (tons) with the distance traveled data (km).
- In maritime transportation calculations, the return voyage (ballast) of the ship was also taken into account, and since there was no fuel data, half of the total ton.km data was taken as activity data, as is widely practiced in international studies (distance-based estimation approach).
- In road transport calculations, all ton.km total activity data were used, and the Average Heavy Vehicles (All HGVs) – 50% occupancy value was selected as the emission factor (EF).

Personnel Transportation (Category 3.3)

- The service brand model and distance traveled (km) data of the personnel service transportation were obtained from the Supply Chain Directorate. Total km information was obtained using Google Maps (https://www.google.com/maps) and calculated under Category 3.3.
- Emissions from fuel consumption of personnel commuting with dedicated vehicles were calculated in Category 1.2 as direct emissions, since the fuel control is in RTC Kimya.

Customer Visits (Category 3.4)

- Information on customer visits is recorded throughout the year. Distance traveled (km) data from customer visits for 2024 was compiled, calculated, and transmitted by RTC Kimya Executive Assistant using Google Maps (https://www.google.com/maps).

Business Travel - Transportation and Hotel Accommodation (Category 3.5)

- Information on business trips and accommodations is recorded by RTC Kimya Executive Assistant throughout the year . In 2024, business trips carried out by RTC Kimya were carried out by air and road.
- Distances traveled by air were calculated using the https://www.airportdistancecalculator.com/ page. The distances traveled by road (train) are obtained from the General Directorate of State Railways, 2020-2024 Statistical Yearbook (https://static.tcdd.gov.tr/webfiles/userfiles/files/istrapor/202024isyil.pdf).
- Data on hotel stays made by the personnel within the scope of business trips, obtained from accommodation bills.
- For international flights, flights shorter than 3700 km are considered short-haul flights, and flights longer than 3700 km are considered long-haul flights (DEFRA, 2025).

6.5.4 Acceptances in Category 4 Calculations

Purchased Raw Materials (Category 4.1)

- A total of 2,174.65 tons of raw materials were purchased by RTC Kimya in 2024. These raw materials are castor oil, isocyanate, ethoxy propanol and TiO_2, especially polyol. The data of the purchased raw materials were obtained by pulling from the system.

Purchased Packaging Products (Category 4.1)

- Data on packaging materials purchased by RTC Kimya throughout 2024 were obtained from the Supply Chain Directorate. Buckets, pallets, stretches, pet straps and IBCs were used as packaging materials. Unit weights by the authorities; 13 kg for barrel, 20 kg for pallet, 1.7 kg for bucket, 3.5 kg for stretch, 15 kg for pet strapping, 55 kg for IBC, and the total amount of packaging (kg) purchased was calculated by multiplying the quantity of pieces.

Purchased Office Supplies (Category 4.1)

- Data on office supplies purchased by RTC Kimya throughout 2024 were obtained from the relevant Advance invoices.
- A spend-based approach was applied in the calculations and the EPA 2022 data set was used.

Water Supply and Consumption (Category 4.1)

- The amount of mains water consumed by RTC Kimya throughout the year was obtained monthly (m3) from the invoices issued by ISU.

WTT Emissions (Category 4.1)

- While calculating greenhouse gas emissions from electricity transmission and distribution, the average loss and leakage rate data for Turkey was obtained from the World Bank website and 15% acceptance has been done (https://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?end=2014&locations=TR&most_recent_year_desc=false&start=2005).
- WTT emissions of natural gas, gasoline, and diesel consumed in 2024 have been calculated by RTC Kimya. Relevant emission factors *are obtained from* DEFRA 2025, WTT- fuels page.
- WTT-Electricity Generation and WTT- Electricity Transmission and Distribution emissions of electricity consumed in 2024 were calculated by RTC Kimya. Relevant emission factors *are obtained from DEFRA 2025, WTT- UK Electricity* page.

Capital Assets/Non-Current Fixed Assets/Fixtures (Category 4.2)

- Emissions of capital assets (forklifts, industrial machinery, laboratory devices, electronic devices, laptops, etc.) purchased by RTC Kimya in 2024 are calculated under this category. The relevant data is obtained from the 2024 Depreciation Table. 75% of the annual price is included in the calculation.
- While calculating emissions from capital assets, a spend-based approach was applied and the EPA 2022 data set was used.

Wastewater (Category 4.3)

- In the calculations of the amount of wastewater (m3); It has been accepted that 90% of the water consumed is discharged.

Packaging Waste and Hazardous Waste (Category 4.3)

- Data (kg) on mixed packaging waste and hazardous waste generated as a result of RTC Kimya's activities in 2024 were obtained from the Annual Waste Declaration Form.

Service Procurement (Category 4.5)

- The main services purchased by RTC Kimya in 2024 are; food, surveillance, financial consultancy service, process consultancy, environmental and sustainability consultancy, ink formulation consultancy, etc. Relevant activity data were obtained from the Financial Affairs Directorate.
- A spend-based approach was applied in the calculations and the EPA 2022 data set was used.

6.5.5 Emissions Not Included

Category 1.3 Process Emissions: There are no direct greenhouse gas emissions from chemical reactions in the organization's production processes. Therefore, this category is out of scope.

Category 1.5 Land Use, Land Use Change, and Forestry (LULUCF) Activities: The organization does not have land use, land changes, or forestry activities. Therefore, this category is out of scope.

Category 4.4 Emissions from the Use of Equipment Leased by the Reporting Organization: Since there was no leased equipment in this reporting period, it was not included in the inventory in the relevant reporting period.

Category 5 Greenhouse Gas Emissions Arising from the Use of Products Produced by the Organization and Also from the Use of Other Products: The products produced by RTC Kimya do not create greenhouse gas emissions during the direct use phase. Therefore, Category 5 is out of scope.

Category 6 Indirect Greenhouse Gas Emissions from Other Sources: Within the scope of the study, all emission sources were evaluated and greenhouse gas emissions were calculated under the relevant categories and subcategories. Apart from these, no additional emission sources have been identified.

6.6. Emission Factors

The emission factors used in the preparation of RTC Kimya's 2024 Greenhouse Gas Inventory *have been selected in accordance with the requirements specified in TS EN ISO 14064-1: 2019*s (9.3.1 m).

In the greenhouse gas emission calculations made within the scope of the preparation of this inventory; *IPCC 2006 Greenhouse Gas Calculation Guidance Documents, IPCC AR6, DEFRA 2025, EPA 2022* data sets, *emission factors published by* ICCT *(*International Council on Clean Transportation) and the *national* Turkey-wide Electricity Generation Emission Factor *given in the Turkish National Electricity Network Emission Factor Information Form of the Ministry of Energy and Natural Resources of the Republic* of Turkey for electricity emission factor. Used. Various international EPD documents and scientific articles were used to calculate the embedded emissions of raw materials. The list of emission factors used within the scope of this study and their references is given in Annex 2. In all calculations; The results found in kilograms and grams were converted to tons of CO2e.

6.6.1 Natural Gas Emission Factor

In the calculations of greenhouse gas emissions from consumed natural gas, the emission factors in IPCC 2006, Volume 2, Part 2 were used. The amount of natural gas was supplied monthly (m 3) from the invoices issued by PALGAZ. The lower calorific value of natural gas was taken as 8,250 kCal/m^3. While converting the consumption data from kCal to Joule (J), the equation 1 kCal = 4.184 kJ was used. Afterwards, the Joule value was converted to TeraJoule (TJ) and the equation 1 TJ=10^9 kJ was taken as a basis. Greenhouse gas emissions from natural gas were calculated using the relevant *emission factors (kgCO2*/TJ, kg CH_4/TJ, kg N_2O/TJ) in the IPCC 2006, Volume2, Chapter 2, Table 2.3 - Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction, Natural Gas table. IPCC 6 for switching to CO_2 equivalent. *GWP values* specified in the Evaluation Report were used. [4]

6.6.2 Diesel Fuel Emission Factor

While calculating the emissions from vehicles consuming diesel fuel, the emission factor values published by the IPCC for greenhouse gas inventory calculations were used. Fuel consumption is recorded by RTC Kimya in liters. While calculating the emissions resulting from the fuel consumption of the vehicles, the emission factors predicted for the mobile combustion process were used. The net calorific value for diesel fuel is calculated in TJ units by taking the net calorific value as 43 TJ/Gg *from IPCC 2006, Volume2, Chapter 1, Table 1.2 - Default Net Calorific Values (NCVs) and Lower and Upper Limits of the 95% Confidence Intervals*. *IPCC 2006, Volume2, Chapter 3, Table 3.2.1 - Road Transport Default CO_2 Emission Factors and Uncertainty Ranges, Gas/ Diesel Oil and Table 3.2.2 Road Transport N_{2O} and CH_4 Default Emission Factors and Uncertainty Ranges, Gas/ Diesel Oil* tables (kg CO_2/TJ, kg CH_4/TJ, kg N_2O/TJ) specified in diesel greenhouse gas emissions from fuel consumption were calculated. IPCC 6 for switching to CO2 equivalent. *GWP values specified* in the Evaluation Report were used.

6.6.3 Gasoline Fuel Emission Factor

Emission factors predicted for moving combustion were used to calculate the greenhouse gas emissions resulting from the fuel consumption of vehicles owned or controlled by RTC Kimya. The net calorific value of gasoline is 44.3 TJ/Gg taken from *IPCC 2006, Volume2, Chapter 1, Table 1.2 - Default Net Calorific Values (NCVs) and Lower and Upper Limits of the 95% Confidence Intervals*. The amount of use is calculated in TJ units. *IPCC 2006, Volume2, Chapter 3, Table 3.2.1 - Road Transport Default CO_2 Emission Factors and Uncertainty Ranges, Motor Gasoline and Table 3.2.2 Road Transport N_{2O} and CH_4 Default Emission Factors and Uncertainty Ranges, Motor Gasoline - Emission factors specified in Uncontrolled (b)* (kg CO_2/TJ, kg CH_4/TJ, kg N_2O/TJ) greenhouse gas emissions from gasoline consumption were calculated. IPCC 6 for switching to CO2 equivalent. *GWP* values specified in the Evaluation Report were used.

6.6.4 Global Warming Potentials of Refrigerant Gases

By examining the Refrigerant Gases and Fire Extinguishers Inventory prepared by RTC Kimya Production Directorate, it was determined that R32 and R410A gas were used in the air conditioners and chillers used in RTC Kimya's Çayırova/Kocaeli location, and R134A gas was used in the dispenser.

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[4] IPCC Sixth Assessment Report (AR6),
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07_SM.pdf

Data on refrigerant gases were obtained from the *2024 Refrigerant Gases and YSCs Tracking Form*. No gas was filled into the devices in 2024. In the calculations; the refrigerant gas capacities of the devices were calculated by multiplying them with the loss/leakage rates given in Section 6.5 regarding refrigerant gases.

When calculating greenhouse gas emissions caused by the leakage of these gases, *IPCC 6. Relevant GWPs in the Assessment Report* were used.

6.6.5 Global Warming Potentials of Fire Extinguishing Gases

Fire extinguishers containing CO2 gas, which affects climate change, have been identified as a source of greenhouse gas emissions. In 2024, no gas was refilled into the devices. When calculating the greenhouse gas emissions caused by gas leakage of fire extinguishers, *IPCC 6. The* relevant GWP value in the Assessment Report was used. While determining the activity data, the Department 6.5 loss/leakage ratios were taken into account.

6.6.6 Electricity Emission Factor

The electricity consumption amounts used in RTC Kimya's activities were obtained from the electricity bills in the reporting period and recorded as kWh. Emissions from purchased electricity consumption were determined using *the Turkey-wide Electricity Generation Emission Factor*[5] published by the Ministry of Energy and Natural Resources of the Republic of Turkey, and the values found were converted into tons. In addition, active electricity draws and active electricity supply amounts were also obtained from the SPP system data. For active draw, the *Turkey-wide Electricity Generation Emission Factor was* also used, and the greenhouse gas emission factor of electricity produced from renewable energy systems for active output (SPP generation) was accepted as '0' based on the GHG Protocol Scope 2 Guidance (2015) and IPCC 2006 guidelines.

6.6.7 Emission Factors of Transportation of Input Materials

Input materials purchased by RTC Kimya are brought to Turkey by sea and road transportation. The assumptions made in the calculations are given in Section 6.5.3. EFs related to road and sea transport were obtained from *the DEFRA 2025, Frightening goods* page and calculations were made.

6.6.8 Emission Factors of Transportation of Output Materials

The products produced by RTC Kimya are sold domestically and internationally by maritime and road transportation. The assumptions made in the calculations are given in Section 6.5.3. EFs related to road and sea transport were obtained from *the DEFRA 2025, Frightening goods* page and calculations were made.

6.6.9 Emission Factor of Personnel Transportation

In the report shared by *ICCT (The International Council on Clean Transportation)* in 2024, the 0.16 kg CO2/km (Volkswagens) value in Table 2 was used as the emission factor in the calculation of emissions for service and personnel transportation.

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[5]https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/EmisyonFaktorleri/2022_Uretim_Tuketim_EF.pdf

6.6.10 Emission Factor of Customer Travels

The emission factor DEFRA 2025 for calculating emissions for customer visits recorded in 2024 *is available from the Passenger vehicles* page. Since there is no detailed information about the vehicles used for the visit, it is accepted that the vehicles are average gasoline vehicles (medium car, petrol).

6.6.11 Emission Factors of Business Travel

In 2024, RTC Kimya officials traveled domestically (Gaziantep, Konya) and internationally (Iraq, Serbia, Bulgaria, Russia, Germany, etc.). For the calculation of airline emissions from business travel, *the relevant emission factors* (kg CO_2e/passenger.km) were obtained from the DEFRA 2025, Business travel-air page. The emission factor *DEFRA 2025,* used to calculate trips by train, is obtained from the Business travel-land page. Since other business trips by road are made with vehicles fueled by RTC Kimya, the relevant emissions are calculated under Category 1.2 as direct emissions.

6.6.12 Emission Factor of Hotel Accommodation

Hotel stays made by RTC Kimya personnel on business trips were recorded as domestic and international. EF (kg CO_2e/night), *DEFRA 2025, Hotel stay* page and *https://www.hotelfootprints.org* page for the relevant country, and greenhouse gas emissions from accommodation were calculated.

6.6.13 Emission Factors of Raw Materials

For the calculation of emissions from raw materials purchased by RTC Kimya during the reporting period, the relevant emission factors were obtained from EPD documents and scientific articles. The relevant emission factors are *given in the Annex 2 RTC KİMYA 2024 Emission Factors and Reference List* table.

6.6.14 Emission Factors of Packaging Materials

For RTC Kimya, the activity data of the packaging materials (buckets, pallets, stretches, pet straps and IBCs) purchased throughout the year were obtained from the Supply Chain Department. Emission factors (kgCO_2e/ton) were obtained from *the DEFRA 2025, Material use* table as belonging to the relevant source, and greenhouse gas emissions from purchased packaging materials were calculated.

6.6.15 Emission Factors of Office Supplies

EFs (kg CO 2e/USD) of all office supplies purchased by RTC Kimya during the reporting period were obtained from the EPA EEIO 2022, Supply Chain Greenhouse Gas Emission Factors v1.3 by NAICS-6 6 dataset (Office Supplies and Stationery Stores) for the relevant source.

[6EPA.] EEIO, 2022, https://catalog.data.gov/dataset/supply-chain-greenhouse-gas-emission-factors-v1-3-by-naics-6

6.6.16 Emission Factor of Water Supply

The amount of mains water consumed by RTC Kimya throughout the year was obtained from the bills and their water consumption was recorded as m3. Greenhouse gas emissions from water supply were calculated using the EF (kg CO2e/m3), *DEFRA 2025, Water supply* table related to water supply.

6.6.17 Source Emission Factor of Capital Assets

EFs (kg CO 2e/USD) of capital assets acquired by RTC Kimya in 2024 are obtained from *the EPA EEIO 2022 Supply Chain Greenhouse Gas Emission Factors v1.3 by NAICS-6* dataset, on a relevant source basis.

6.6.18 Emission Factor of Wastewater Treatment

In the calculations of the amount of wastewater (m3), it was accepted that 90% of the consumed water was discharged. The relevant EF (kg CO_2e/m^3) was obtained from *the DEFRA 2025, Water treatment* page and the amount of greenhouse gas emissions from wastewater treatment was calculated.

6.6.19 Emission Factor of Waste

Mixed packaging wastes and hazardous wastes generated as a result of RTC Kimya's activities in the reporting period were recorded in kg and converted into tons. The emission factor (kg CO_2e/ton) was obtained from the DEFRA 2025, Waste disposal page and the relevant greenhouse gas emissions were calculated.

6.6.20 Emission Factors of Service Procurement

EFs (kg CO 2e/USD) of RTC Kimya's service procurement in the reporting period are obtained from the EPA EEIO 2022 Supply Chain Greenhouse Gas Emission Factors v1.3 by NAICS-6 dataset on the basis of the relevant source.

6.7. Base Year Selection

RTC Kimya carried out its corporate greenhouse gas emission inventory preparation study for the first time in this reporting year and calculated its corporate carbon footprint for 2024. In this context, it has been decided to take 2024 as the base year (6.4.1). The inventory for 2024 is also the base year inventory.

6.8. Emission Reduction and Removal

RTC Kimya recognizes the critical role played by the private sector in combating global climate change. Accordingly, the company completed its first Corporate Carbon Footprint study in this reporting year. Based on the short-term target criteria of the Science Based Targets Initiative (SBTi), RTC Kimya aims to reduce Scope 1 and Scope 2 emissions by 42% over the next 10 years and strengthen its sustainability strategies. This target has been set to contribute to the goal of limiting the global temperature increase to 1.5°C.

In the 2024 reporting period, RTC Kimya's total Scope 1 and Scope 2 greenhouse gas emissions were calculated as 519.5 tons of CO_2e. Considering RTC Kimya's type of activity, it is estimated that Scope 3 emissions (especially raw material embedded emissions, emissions from raw material and product transportation and service provision processes) have the highest share (98%) in total emissions. Therefore, monitoring Scope 3 emissions and developing mitigation strategies in related areas are critical in the company's sustainability roadmap.

6.8.1 Emission Reduction Strategies

Climate change has become a fundamental area of transformation for the business world with both its environmental and economic impacts. RTC Kimya considers this transformation not only as a risk factor, but also as an opportunity area that will increase its competitiveness.

Since RTC Kimya manufactures polyurethane-based resins, lamination glues and packaging inks, direct emissions and indirect emissions due to electricity consumption occur in fixed and mobile combustion sources in production processes. In order to mitigate these effects, the company invested in a SPP with an installed capacity of 400 kW in 2022. Thus, it started to meet a significant part of its electricity consumption (18% in 2024) with renewable energy. In addition, logistics activities such as chemical raw material transportation and use and product distribution throughout the supply chain also led to indirect emissions.

In this context, RTC Kimya anticipates that carbon-intensive raw materials and transportation activities may create additional costs within the scope of carbon tax applications in the future. Therefore, the potential of carbon taxation and related regulations to increase operating expenses, affect supply chain costs and reduce competitiveness is considered a significant climate transition risk by RTC Kimya.

RTC Kimya structures its greenhouse gas reduction strategies in accordance with the 1.5 °C scenario in line with the Paris Agreement targets and adopts the net-zero emission target in the long term. In this context, energy efficiency studies, increasing the use of renewable energy, preferring low-carbon raw materials, circular packaging designs and low-carbon logistics solutions are among the strategic priorities.

Climate-Related Transition Risks

Changes in climate policies and regulatory frameworks highlight two primary transition risks in manufacturing and supply chain processes:

1. ***Upstream Risks:*** Increases in costs due to carbon taxes and other regulations in raw material supply, price fluctuations, supply shortages and the necessity of turning to alternative raw material suppliers

2. ***Downstream Risks: Due*** to regulations and taxes, customers may turn to low-carbon product preferences and accordingly experience market loss in traditional products.

RTC Kimya regularly monitors these risks and develops compliance strategies in line with regulations such as the Turkish Emissions Trading System (ETS), Climate Law and Carbon Border Adjustment Mechanism (CBAM).

6.8.2 Actions Planned within the Scope of Decarbonization

RTC Kimya is working on a series of strategic goals to reduce greenhouse gas emissions. Some of these goals are given below:

1. ***Energy Management:*** RTC Kimya aims to increase the use of energy efficiency and renewable energy in its production facility (expanding the capacity of the already installed solar energy system, etc.).

2. ***Purchasing Low-Carbon Raw Materials:*** It aims to turn to the supply of bio-based or recycled, low-carbon chemical raw materials.

3. ***Production of Low-Carbon Products:*** It aims to transform its product portfolio to meet customers' demand for products with a low carbon footprint.

4. ***Eco-Design:*** It is aimed to develop product formats with lower emissions and to use recycled and low-carbon packaging materials.

5. ***Logistics:*** It is aimed to ensure the transition to low-carbon transportation models in the long term.

6. ***Supplier Collaboration:*** It is aimed to carry out joint reduction projects with suppliers for raw materials with a high carbon footprint. In this context, RTC Kimya conducts prioritization analyses when deciding which suppliers to cooperate with, taking into account the emission impacts and strategic importance of the suppliers.

In order to achieve its climate goals, RTC Kimya comprehensively examines emission reduction opportunities across the entire value chain. In this context, RTC Kimya plans to focus on raw material supply chain (upstream) and product distribution (downstream) with its own operations. RTC Kimya aims to determine strategic actions to reduce greenhouse gas emissions, and it is planned to define measurable KPIs for each action in the future. These KPIs aim to monitor the annual emission reduction potential (tonnes of CO_2e) and regularly report strategic progress.

Energy Usage

Energy use also plays a critical role in reducing emissions. RTC Kimya plans to reduce its carbon footprint through the use of renewable energy (solar energy) in its production processes, low-energy production methods and process optimization.

Sustainable Product Development

RTC Kimya integrates low-carbon product development and eco-design principles into its production processes, aiming to reduce the environmental impact of its chemical products throughout their lifecycle. In this context, both the raw materials used in the formulation phase and the packaging designs of the products are evaluated with a focus on sustainability.

- ***Development of New Formulations:*** RTC Kimya aims to substitute raw materials used in chemical products with alternatives with lower carbon footprints. In this direction, it is aimed to reduce greenhouse gas emissions in the production and use stages of products by choosing bio-based, recycled or low-energy intensity raw materials. In addition, the development of formulations with low VOC content, which will reduce volatile organic compound (VOC) emissions in solvent-based products, is one of the priority areas in the company's R&D studies.

- ***Supplier Collaboration and Raw Material Management***: RTC Kimya sees supply chain cooperation as a critical element in reducing the carbon impact of raw materials used in chemical production. Key objectives include working closely with strategic suppliers to procure chemicals with low emission profiles, adopt sustainability criteria in raw material selection, and reduce dependence on fossil-based inputs.

- ***Packaging and Circularity: The*** packaging used to bring products to market is also an important part of a low-carbon strategy. In this direction, RTC Kimya aims to increase the use of recycled packaging materials and develop refillable and recyclable packaging systems. Thus, it is aimed to reduce both raw material consumption and indirect (Scope 3) emissions from packaging.

Carbon Efficient Logistics

RTC Kimya's logistics-related emissions; It originates from raw material transportation and product distribution. The company's logistics-related emissions are aimed to be reduced by reducing transportation distances, increasing freight efficiency and transitioning to lower-carbon transportation methods.

Sustainability Goals and Strategic Priorities

RTC Kimya plans to reduce Scope 1 and 2 emissions in line with SBTi near-term targets in the short term, to activate Scope 3 reduction levers in the medium term, and to achieve its net-zero emission target in the long term. This strategy offers a transformation roadmap that will minimize climate risks while also increasing competitiveness.

RTC Kimya strategically places supplier management, product innovation and energy transformation in line with emission reduction and long-term net-zero targets across the entire value chain. In this way:

- Taking rapid actions in areas with high carbon reduction potential in the short term
- Accelerating supply chain transformation in the medium term
- In the long term, it is aimed to create a competitive advantage in line with the net-zero target.

6.9. Recommendations for Data Quality Improvement

In order to increase the data quality for the calculation of Scope 3 emissions, which has the highest emission rate for RTC Kimya:

1. Calibration of meters and measuring devices should be done regularly. It is especially important to have separate meters for electricity, natural gas, steam, water and process inputs.
2. It is necessary to provide specific data for generator diesel use.
3. Reactive/active energy data should be monitored regularly.
4. Within the scope of calculating leakage emissions, air conditioner filling and maintenance forms should be recorded in the inventory up-to-date, and evidence documents should be kept in the relevant folders.
5. For Scope 3 (supply chain) emissions, product-based emission factors should be requested from suppliers. EPD (Environmental Product Declaration) and LCA reports should be requested from the manufacturers for all raw materials purchased, and the product carbon footprint information of each raw material should be tried to be accessed. Available product carbon footprint information must be added as a proof file to the file containing the purchase data.
6. If possible, suppliers with EPD and LCA reports should be preferred.
7. All purchased raw material and product information should be included in the system in detail. For each of the raw materials and products, data on total quantities, departure and destination locations, transportation route (road, sea, etc.), port or customs information used, vehicle types (trucks, lorries, etc.), number of voyages are required. This data should be recorded regularly in the system on a monthly and annual basis and data should be easily retrieved from the system when necessary.
8. All business trips must be recorded. Departure and destination airports and ticket classes should be kept for air travels, and vehicle type, fuel type, and how many km traveled should be kept for road travels. Information about all stays must be recorded.
9. It is important to record the data on the type of vehicles entering and exiting the institution for visiting purposes, the type of fuel and how many kilometers they have traveled.

6.10. Uncertainty Assessment

All calculations are supported by data obtained from existing invoices or company records and, where necessary, calculations are made by making the assumptions specified in Section 6.5 under the heading of Acceptances (9.3.1 q).

The uncertainty values of the data acquisition method and emission factor procurement method used in the calculation of the uncertainty level are given in Table 7.

Table 7. Method-Based Uncertainty Values

Data Acquisition Method	Emission Factor Procurement Method	Uncertainty Value (%)
Measuring Device Subject to Legal Metrological Control	IPCC, DEFRA	1,5
Measuring Device with Valid Calibration Date	Internationally Accepted Data (Ecoinvent, SimaPro, GABI etc.)	1,5
Calibration History Valid Not / No Calibration	Countries Belonging National Inventories/Reports	2,5
Labeled Supplier Data (Gas Filling Capacity, etc.)	Labeled Supplier Data (MSDS, etc.)	3,5
Supplier Data / Invoice / Declaration to the Ministry	Supplier Data	5
Distance Measurement Programs (Google Maps, hotelfootprints.org, etc.)	Assumption / Acceptance	7

Table 8. RTC Kimya 2024 Greenhouse Gas Emission Calculations Uncertainty Table

Greenhouse Gas Source	Activity Data (PV)	PV Unit	Activity Data Acquisition Method	PV Uncertainty	EF Procurement Method	EF Uncertainty	Tons of CO2e	Calculated Emissions Uncertainty	External Variable 1	External Variable 2
Category 1										
Constant Combustion - Natural Gas	51.594,76	m^3	Measuring Device Based on Legal Metrological Control	1,50%	IPCC	1,50%	100,01	2,12%	2,12	4,50
Moving Combustion - Diesel	6.866,28	L	Supplier Data/Invoices	5,00%	IPCC	1,50%	18,446	5,22%	0,96	0,93
Moving Combustion - Gasoline	7.225,85	L	Supplier Data/Invoices	5,00%	IPCC	1,50%	16,727	5,22%	0,87	0,76
Leakage Emissions - Refrigerant Devices	2,11	kg	Supplier Data/Invoices/Maintenance Forms	5,00%	IPCC	1,50%	4,711	5,22%	0,25	0,06
Leakage Emissions - YSC	1,20	kg	Supplier Data/Invoices/Maintenance Forms	5,00%	IPCC	1,50%	0,001	5,22%	0,00	0,00
Category 2										
Electricity	858.817,23	kWh	Measuring Device Based on Legal Metrological Control	1,50%	Ministry of Energy and Natural Resources	2,50%	379,597	2,92%	11,07	122,48
GES Electricity	187.530,62	kWh	Measuring Device Based on Legal Metrological Control	1,50%	GHG Protocol	1,50%	0	2,12%	0,00	0,00
Category 3										
Input Materials Transportation - Land and Sea	67.449.643,02	ton*km	Data Received from the System, Distance Measurement Programs (Google Maps, etc.)	7,00%	DEFRA	1,50%	1.437,793	7,16%	102,93	10594,65
Transportation of Output Materials - Land and Sea	108.918.147,98	ton*km	Data Received from the System, Distance Measurement Programs (Google Maps, etc.)	7,00%	DEFRA	1,50%	13.275,019	7,16%	950,35	903158,93
Personnel Transportation	68.640,00	km	Distance Measurement Programs (Google Maps, etc.)	7,00%	ICCT, International Report	2,50%	10,982	7,43%	0,82	0,67
Customer Visits	1.091,20	km	Distance Measurement Programs (Google Maps, etc.)	7,00%	DEFRA	1,50%	0,191	7,16%	0,01	0,00
Business Trips	67.355,20	passenger*km	Distance Measurement Programs (Google Maps, etc.)	7,00%	DEFRA	1,50%	10,380	7,16%	0,74	0,55
Business Trips - Accommodation	87,00	night	Supplier Data/Invoices	5,00%	DEFRA	1,50%	2,305	5,22%	0,12	0,01
Category 4										
Purchased Raw Materials	2.174,65	ton	Supplier Data/Invoices	5,00%	EPD Documents, Scientific Publications	2,50%	7.727,1	5,59%	431,96	186588,51
Purchased Packaging	276,80	ton	Supplier Data/Invoices	5,00%	DEFRA	1,50%	964,240	5,22%	50,33	2533,60
Purchased Office Supplies	3.643,33	USD	Supplier Data/Invoices	5,00%	EPA	2,50%	0,404	5,59%	0,02	0,00

Purchased Water	988,00	m^3	Measuring Device Based on Legal Metrological Control	1,50%	DEFRA	1,50%	0,189	2,12%	0,00	0,00
Non-Current Assets	841.308,14	USD	Supplier Data/Invoices	5,00%	EPA	2,50%	4.359,8	5,59%	243,72	59398,88
Wastes	70,21	ton	Supplier Data/Invoices	5,00%	DEFRA	1,50%	0,329	5,22%	0,02	0,00
Wastewater	889,20	m3	Supplier Data/Invoices	5,00%	DEFRA	1,50%	0,152	5,22%	0,01	0,00
Service Procurement	170.716,08	USD	Supplier Data/Invoices	5,00%	EPA	2,50%	14,317	5,59%	0,80	0,64
WTT-Natural Gas	51.594,76	m^3	Measuring Device Based on Legal Metrological Control	1,50%	DEFRA	1,50%	17,367	2,12%	0,37	0,14
WTT-Motorin	6.866,28	L	Supplier Data/Invoices	5,00%	DEFRA	1,50%	4,195	5,22%	0,22	0,05
WTT gasoline	7.225,85	L	Supplier Data/Invoices	5,00%	DEFRA	1,50%	4,198	5,22%	0,22	0,05
T&D with Electric WTT	858.817,23	kWh	Measuring Device Based on Legal Metrological Control	1,50%	DEFRA	1,50%	48,523	2,12%	1,03	1,06
TOTAL							**28.396,97**			

UNCERTAINTY SUMMARY TABLE

Category 1, Total Emissions, tonnes CO2e	**139,90**
K1, Total Uncertainty	**1,79%**
Category 2, Total Emissions, tonnes CO2e	**379,60**
K2, Total Uncertainty	**2,92%**
Category 3, Total Emissions, tonnes CO2e	**14.736,67**
K3, Total Uncertainty	**6,49%**
Category 4, Total Emissions, tonnes CO2e	**13.140,81**
K4, Total Uncertainty	**3,79%**
Category 1-2-3-4 Total Emissions, tons CO2e	**28.396,97**
Category 1-2-3-4 Total Uncertainty	**3,80%**

7. CALCULATED GREENHOUSE GAS EMISSIONS

7.1. Greenhouse Gas Emissions in 2024 (ISO 14064-1)

Within the scope of TS EN ISO 14064-1: 2019 standard, Corporate Greenhouse Gas Emissions are calculated in a total of 6 categories:

1. Category 1: Direct Greenhouse Gas Emissions
2. Category 2: Energy Indirect Greenhouse Gas Emissions
3. Category 3: Indirect Greenhouse Gas Emissions from Transportation
4. Category 4: Indirect Greenhouse Gas Emissions from Products or Raw Materials Used by the Organization
5. Category 5: Indirect Greenhouse Gas Emissions from the Use of Products
6. Category 6: Other Indirect Greenhouse Gas Emissions

There are 4 Categories within the scope of RTC Kimya's activities. Greenhouse gas emissions released in the relevant emission sources have been calculated according to the methodology described in Section 6 and are given separately in Table 9 for each category and each location. RTC Kimya's greenhouse gas emission sources calculated within the scope of *TS EN ISO 14064-1: 2019* standard in this reporting period are given in detail in Annex 1.

Table 9. RTC Kimya 2024 Greenhouse Gas Emissions (TS EN ISO 14064-1)

TS EN ISO 14064-1	%	RTC KİMYA TOTAL ($tons_{CO2e}$)
Category 1	0,49%	139,90
Category 2*	1,34%	379,60
Category 3	51,90%	14.736,67
Category 4	46,28%	13.140,81
Category 5	-	-
Category 6	-	-
Total- Corporate Carbon Footprint	100%	**28.396,97**

** Total emission calculations are based on the location-based emission value for Category 2.*

As a result of the calculation made according to ISO 14064-1, RTC Kimya's total greenhouse gas emissions in 2024 were calculated as 28,396.97 tons of CO_2e. Looking at the breakdown of emissions, Category 3 emissions account for about 52% of the total. Under this category, Category *3.2 - Emissions from the transport or distribution of goods (outbound)* (13,275.02 tonnes of CO_2e) stand out. This high amount of emissions is due to the fact that RTC Kimya sends its products abroad largely by road transportation, and it is common for the chemical industry to have high emissions from the supply chain and distribution.

Category 4 emissions account for approximately 46% of the total amount of greenhouse gas emissions. In this category, *Category 4.1 - Emissions from the use of purchased raw materials, finished products and semi-finished products associated* with the product (8,691.95 tons of CO_2e) stand out. It is expected that the raw materials used in the chemical industry will be high because they generally go through energy and carbon-intensive production processes and are supplied through international supply chains. In this context,

It would be beneficial to implement measures such as choosing low-carbon or recycled materials in raw material selection, monitoring the carbon management performance of suppliers and increasing material efficiency. *Category 4.2 - The high emissions from capital assets* (4,359.78 tons of CO_2e) were driven by the roof construction and building reinforcement works carried out in 2024.

In this context, it is important to focus primarily on Category 3 and Category 4 in emission reduction strategies, especially in terms of supply chain management, transportation optimization and sustainability of raw material use, in order to effectively manage the company's total carbon footprint.

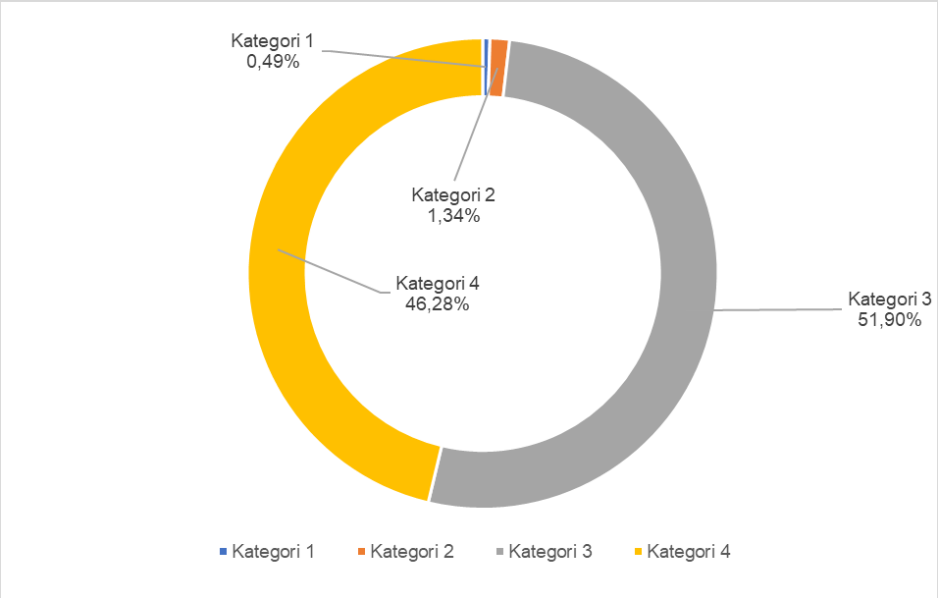


Figure 1. RTC Kimya 2024 Greenhouse Gas Emissions (by ISO 14064-1 Categories)

7.2. Greenhouse Gas Emissions in 2024 (GHG Protocol)

The Greenhouse Gas Protocol (GHG Protocol) Initiative is a multi-stakeholder partnership of businesses, non-governmental organizations (NGOs), governments and other stakeholders gathered by the World Business Council for Sustainable Development (WBCSD), a Geneva-based coalition of 170 international companies around the world, and the World Resources Institute (WRI), a US-based environment-focused non-governmental organization. Launched in 1998, the Initiative's mission is to develop internationally recognized greenhouse gas (GHG) calculation and reporting standards for business and to promote their widespread use:

Within the scope of the GHG Protocol, greenhouse gas emissions are evaluated under 3 different scopes:

1. Scope 1: Direct Greenhouse Gas Emissions
2. Scope 2: Energy Indirect Greenhouse Gas Emissions
3. Scope 3: Other Indirect Greenhouse Gas Emissions

There are 15 different subcategories under Scope 3 (Table 10).

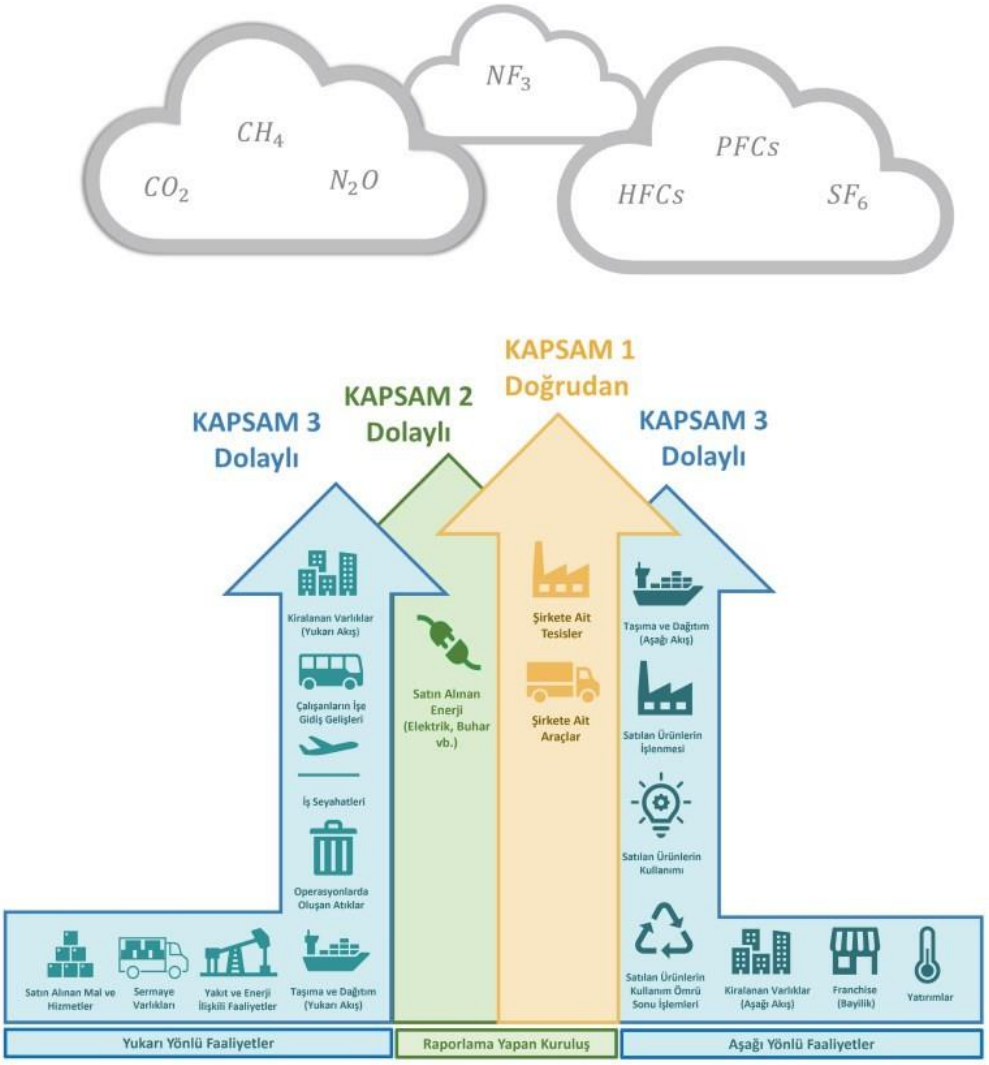


Figure 2. Activities Causing Direct and Indirect Emissions (Scope 1, 2 and 3)

Table 10. RTC KİMYA 2024 Greenhouse Gas Emissions (GHG Protocol)

GHG Protocol	%*	RTC KİMYA Location-Based ($tons_{CO2e}$)
Scope 1	**0,5%**	**139,90**
Scope 2	**1,3%**	**379,60**
Scope 3	**98,2%**	**27.877,48**
Category 1 Purchased Goods and Services	31,23%	8.706,27
Category 2 Non-Current Assets/Capital Goods	15,64%	4.359,78
Category 3 Fuel and Energy Related Emissions (Not Included in Scopes 1 and 2)	0,27%	74,28
Category 4 Upstream Transportation and Distribution	5,16%	1.437,79
Category 5 Wastes Generated in Operations	0,002%	0,48
Category 6 Business Trips and Accommodations	0,05%	12,88
Category 7 Personnel Transportation/Employee Commuting	0,04%	10,98
Category 8 Upstream Leased Assets	-	-
Category 9 Downstream Transportation and Distribution	47,62%	13.275,02
Category 10 Processing of Sold Products/Semi-Finished Products	-	-
Use of Category 11 Sold Products	-	-
Category 12 End-of-Life Transactions of Products Sold	-	-
Category 13 Downstream Leased Assets	-	-
Category 14 Franchises/Franchises	-	-
Category 15 Investments	-	-
Total- Corporate Carbon Footprint	**100%**	**28.396,97**

*The ratios of Scope 3 subcategories to total Scope 3 emissions are given.

According to the GHG Protocol, RTC Kimya's total greenhouse gas emissions in 2024 were calculated as 28,396.97 tons of CO_2e. While six different emission categories are defined in the ISO 14064-1 standard, the GHG Protocol groups these emissions under three scopes: Scope 1 (direct emissions), Scope 2 (indirect energy emissions) and Scope 3 (other indirect emissions).

The results of the analysis show that 98.2% of emissions originate from Scope 3. This reveals that emissions from RTC Kimya's indirect activities throughout the value chain have a decisive impact on its total carbon footprint (Figure 3). When the Scope 3 subcategories are examined, it is seen that the highest share *is Category 9 - Downstream Transport and Distribution* with 47.6% (Figure 4). This category covers the process of delivering products to customers and distribution points, and the number of emissions is high due to the fact that RTC Kimya sends its products abroad largely by road transportation. On the other hand, *Category 1 - Purchased Goods and Services* ranks second, accounting for 31.2% of total Scope 3 emissions. *Category 2 - Non-Current Assets/Capital Goods* account for 15.6% of total Scope 3 emissions. Roof construction and building reinforcement works carried out within the scope of Solar Energy System (SPP) installation in 2024 played an important role in the high emissions in this category. These activities to support the SPP infrastructure increased the embodied carbon emissions in the relevant reporting period. In this context; In terms of emission reduction studies, it is important to focus on Category 4, which is the source of greenhouse gas emissions for raw material transportation, along with Categories 9, 1 and 2.

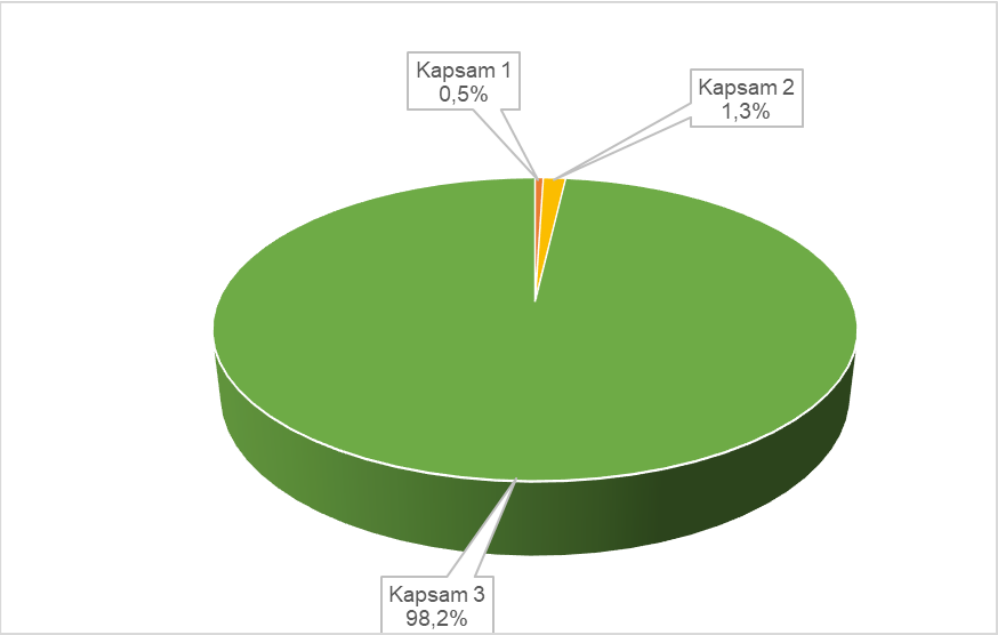
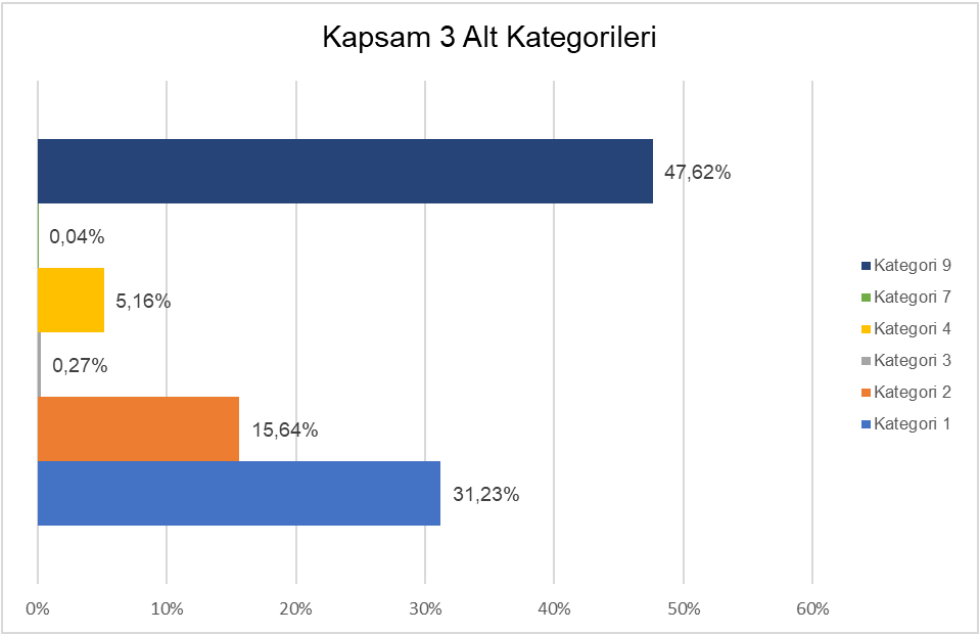


Figure 3. RTC Kimya 2024 Greenhouse Gas Emissions (by GHG Protocol Scopes)



*The ratios of Scope 3 sub-categories to total Scope 3 emissions are given.

Figure 4. RTC Kimya 2024 Greenhouse Gas Emissions (by Scope 3 Subcategories)

7.3. Greenhouse Gas Inventory Quality Management

RTC Kimya adopts ISO 9001 Quality Management System, ISO 14001 Environmental Management System and ISO 45001 Occupational Health and Safety Management System approaches and implements them in its internal communication system.

RTC Kimya Corporate Greenhouse Gas Emission Inventory and Report *has been prepared to meet the reporting requirements of the "TS EN ISO 14064-1: 2019* Greenhouse Gases – Part 1: Guidelines and Specifications for the Calculation and Reporting of Greenhouse Gas Emissions and Removals at the Organization Level (EN ISO 14064-1:2019)" standard. The data taken into account within the scope of the study are based on fully documented information. The data were collected by the relevant units and calculations were made after checking.

APPENDICES

APPENDIX 1. RTC KIMYA GREENHOUSE GAS EMISSION SOURCES ENVATER LIST AND CORPORATE CARBON FOOTPRINT FOR 2024

APPENDIX 2. RTC KIMYA EMISSION FACTORS AND REFERENCE LIST FOR 2024

APPENDIX 1. RTC CHEMICAL YEAR GREENHOUSE GAS EMISSION SOURCES ENVATER LIST AND CORPORATE CARBON FOOTPRINT

RTC KIMYA 2024 GREENHOUSE GAS EMISSION INVENTORY	
ESTABLISHMENT:	RTC KİMYA
PERIOD:	January 1, 2024-December 31, 2024

DIRECT GREENHOUSE GAS EMISSIONS		Source	TOTAL (tonnes CO2e)	EF REFERENCE
1	**Category 1: Direct greenhouse gas emissions and removals**		**139,90**	
1.1	Direct emissions from stationary combustion	Use of natural gas for production and heating purposes	100,01	IPCC 2006, Volume2, Chapter 2, Table 2.3 - Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction, Natural Gas
1.2	Direct emissions from moving incineration	Vehicles belonging to or under the control of the company and fuel (diesel and gasoline) consumption of forklifts	35,17	IPCC 2006, Volume2, Chapter 3, Table 3.2.1 - Road Transport Default CO2 Emission Factors and Uncertainty Ranges, Gas/ Diesel Oil - Motor Gasoline and TABLE 3.2.2 Road Transport N2O and CH4 Default Emission Factors and Uncertainty Ranges, Gas/Diesel Oil - Motor Gasoline
1.3	Direct process emissions and removals from industrial processes	No process-related greenhouse gas emissions were detected.	-	-
1.4	Direct emissions from leakage/leakage of greenhouse gases in anthropogenic systems	Refrigerant gas leaks caused by cooling systems such as air conditioners, chillers and dispensers and fire extinguishers Losses/leaks	4,71	IPCC 6th Assessment Report, Table 7.SM.7 and IPCC Vol.3 Chapter 7 Table 7.8
1.5	Direct emissions and removals from land use, land use change, and forestry (LULUCF) activities	Not available in the relevant reporting period.	-	-

ENERGY INDIRECT EMISSIONS		Source	TOTAL (tonnes CO2e)	
2	**Category 2: Purchased energy indirect greenhouse gas emissions from**		**379,60**	
2.1	Indirect emissions from consumption of purchased electricity*	Use of electrical energy	379,60	Republic of Turkey Ministry of Energy and Natural Resources, Türkiye-wide Electricity Generation Emission Factor, 2024; https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/EmissionFactors/2022_Uretim_Tuketim_EF.pdf"
2.2	Indirect emissions from consumption of other purchased energy (superheated steam, etc.)	In the relevant reporting period; Use/purchase of steam, heat or cooling energy is not available.	-	-

OTHER INDIRECT EMISSIONS		Source	TOTAL (tonnes CO2e)	
3	**Category 3: Indirect greenhouse gas emissions from transportation**		**14.736,67**	
3.1	Emissions from the transportation or distribution of goods (to the organization)	Transportation of raw materials to the company by sea or road	1.437,79	DEFRA 2025, Freighting goods page
3.2	Emissions from the transportation or distribution of goods (outbound)	Transportation of products to customers by sea or road	13.275,02	DEFRA 2025, Freighting goods page
3.3	Emissions from staff commuting .	Employee service usage	10,98	ICCT, International Council on Clean Transportation, 2019, https://theicct.org/sites/default/files/publications/EU-LCV-CO2-2030_ICCTupdate_20190123.pdf, Page 3, Table 2 (VW)
3.4	Emissions from the transport of customers and visitors	Customers' visits to the company for business purposes	0,19	DEFRA 2025, Passenger vehicles page
3.5	Emissions from business travel	Business trips and domestic/international stays	12,69	DEFRA 2025, Business travel-air, DEFRA 2025, Business travel-land and DEFRA 2025, Hotel stay pages with https://www.hotelfootprints.org

4	**Category 4: Products and services used by the organization indirect greenhouse gas emissions from**		**13.140,81**	
4.1	Emissions from purchased raw materials/finished products/semi-finished products/water, etc. associated with the product	Raw materials, packaging materials, office purchase of materials, water supply	8.691,95	International scientific publications and EPDs for raw materials, DEFRA 2025 Material use sheet for packaging materials, EPA EEIO 2022 Dataset for office supplies, DEFRA 2025 for water supply, Water supply sheet
4.1	All Fuels-WTT emissions	Extraction, processing and transportation of fuel	25,76	DEFRA 2025 WTT-fuels page
4.1	Emissions from Electricity Consumption, Transmission and Distribution (T&E)	In the period from the point where electricity is produced until it reaches the end user (transmission and distribution losses incurred during	5,69	https://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?end=2014&locations=TR&most_recent_year_desc=false&start=2005
4.1	Electricity Consumption, WTT-Emissions from production	extraction, transportation and Processing	39,42	DEFRA 2025 WTT- UK electricity page
4.1	Electricity Consumption, WTT-Transmission and Distribution (T&D) emissions	In transmission and distribution processes that enable electricity to reach the end user, Production of energy resources used	3,41	DEFRA 2025 WTT- UK electricity page
4.2	Emissions from capital assets (movable & immovable)	Non-current assets (capital assets) purchased in the relevant reporting period	4.359,78	EPA EEIO 2022 Dataset
4.3	Emissions from the disposal of solid and liquid wastes	Wastewater treatment with mixed packaging and other hazardous waste disposal	0,48	DEFRA 2025 Wastewater treatment sheet for wastewater, DEFRA 2025 Waste disposal sheet for solid waste
4.4	The fact that the leased equipment (establishment by) emissions from the use of	Not available in the relevant reporting period.	-	-
4.5	Emissions from service procurement	Catering, cleaning, security, various professional, scientific and technical consulting, etc. service Purchases	14,32	EPA EEIO 2022 Dataset

5	**Category 5: Post-production use of products Indirect greenhouse gas emissions**		**0,00**	
5.1	Emissions and removals from the use of the product sold	Coverage due to the type of products produced is excluded.	-	-
5.2	Caused by the use of leased equipment (belonging to the organization) emissions from emissions	Not available in the relevant reporting period.	-	-
5.3	Emissions after the end of the product's useful life (treatment, disposal, recycling gain, etc.)	It is out of scope due to the type of products produced.	-	-
5.4	Emissions from investments	It is out of scope.	-	-
6	**Category 6: From other sources Resulting indirect greenhouse gas emissions**		**0,00**	
	All greenhouse gas sources have been calculated under the relevant categories.	Not available in the relevant reporting period.	-	-
TOTAL			**28.396,97**	

APPENDIX 2. RTC KIMYA EMISSION FACTORS AND REFERENCE LIST FOR 2024

REFERENCES & ADMISSIONS			
Parameters	**Value**	**Unit**	**Accept or Reference**
GWP - CO_2	1,000	-	IPCC 6th Assessment Report (AR6), https://www.ipcc.ch/assessment-report/ar6/
GWP - CH_4	27,900	-	IPCC 6th Assessment Report (AR6), https://www.ipcc.ch/assessment-report/ar6/
GWP - N_2O	273,000	-	IPCC 6th Assessment Report (AR6), https://www.ipcc.ch/assessment-report/ar6/
Category 1			
Category 1.1			
Natural Gas Lower Calorific Value	8.250,000	kcal/Sm^3	ON INCREASING EFFICIENCY IN THE USE OF ENERGY RESOURCES AND ENERGY REGULATION, Annex-2, Lower Calorific Values of Energy Resources and Conversion Coefficients to Petroleum Equivalent, https://www.resmigazete.gov.tr/eskiler/2011/10/20111027-5.htm
EF CO_2 - Stationary Combustion Natural Gas	56,100	tons of CO2/TJ	IPCC 2006, Volume2, Chapter 2, Table 2.3 - Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction, Natural Gas
EF CH_4 - Stationary Combustion Natural Gas	0,0010	your CH_4/TJ	IPCC 2006, Volume2, Chapter 2, Table 2.3 - Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction, Natural Gas
EF N2O - Stationary Combustion Natural Gas	0,0001	ton $N_{2O/TJ}$	IPCC 2006, Volume2, Chapter 2, Table 2.3 - Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction, Natural Gas
Category 1.2			
Density-Diesel	0,830	kg/L	ON INCREASING EFFICIENCY IN THE USE OF ENERGY RESOURCES AND ENERGY REGULATION, Annex-2, Lower Calorific Values of Energy Resources and Conversion Coefficients to Petroleum Equivalent, https://www.resmigazete.gov.tr/eskiler/2011/10/20111027-5.htm
Density-Gasoline	0,735	kg/L	ON INCREASING EFFICIENCY IN THE USE OF ENERGY RESOURCES AND ENERGY REGULATION, Annex-2, Lower Calorific Values of Energy Resources and Conversion Coefficients to Petroleum Equivalent, https://www.resmigazete.gov.tr/eskiler/2011/10/20111027-5.htm
NKD Diesel	43,000	TJ/Gg	IPCC 2006, Volume2, Chapter 1, Table 1.2 - Default Net Calorific Values, Diesel oil
NKD gasoline	44,300	TJ/Gg	IPCC 2006, Volume2, Chapter 1, Table 1.2 - Default Net Calorific Values, Gasoline
EF CO_2 - Benzin On Road	69,300	tons of CO2/TJ	IPCC 2006, Volume2, Chapter 3, Table 3.2.1 - ROAD TRANSPORT DEFAULT CO2 EMISSION FACTORS AND UNCERTAINTY RANGES, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_3_Ch3_Mobile_Combustion.pdf

EF CH_4 - Benzin On Road	0,033	your CH_4/TJ	IPCC 2006, Volume2, Chapter 3, Table 3.2.2 - ROAD TRANSPORT N2O AND CH4 DEFAULT EMISSION FACTORS AND UNCERTAINTY RANGES, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_3_Ch3_Mobile_Combustion.pdf
EF N2O - Benzin On Road	0,0032	ton $N_{2O/TJ}$	IPCC 2006, Volume2, Chapter 3, Table 3.2.2 - ROAD TRANSPORT N2O AND CH4 DEFAULT EMISSION FACTORS AND UNCERTAINTY RANGES, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_3_Ch3_Mobile_Combustion.pdf
EF CO_2 - Diesel On Road	74,100	tons of CO2/TJ	IPCC 2006, Volume2, Chapter 3, Table 3.2.1 - ROAD TRANSPORT DEFAULT CO2 EMISSION FACTORS AND UNCERTAINTY RANGES
EF CH_4 - Diesel On Road	0,0039	your CH_4/TJ	IPCC 2006, Volume2, Chapter 3, Table 3.2.2 - ROAD TRANSPORT N2O AND CH4 DEFAULT EMISSION FACTORS AND UNCERTAINTY RANGES
EF N2O - Diesel On Road	0,0039	ton $N_{2O/TJ}$	IPCC 2006, Volume2, Chapter 3, Table 3.2.2 - ROAD TRANSPORT N2O AND CH4 DEFAULT EMISSION FACTORS AND UNCERTAINTY RANGES
Category 1.4			
EF R32	771,000	kg $CO_{2e/kg}$ gas	IPCC 6th Assessment Report, Table 7.SM.7
EF R134A	1.530,000	kg $CO_{2e/kg}$ gas	IPCC 6th Assessment Report, Table 7.SM.7
EF R410A	2.255,500	kg $CO_{2e/kg}$ gas	IPCC 6th Assessment Report, Table 7.SM.7 and IPCC Vol.3 Chapter 7 Table 7.8
Leakage rate (Residential and Commercial A/C)	1%	-	IPCC 2006, Volume 3, Chapter 7, Table 7.9 - ESTIMATES FOR CHARGE, LIFETIME AND EMISSION FACTORS FOR REFRIGERATION AND AIR-CONDITIONING SYSTEMS - Residential and Commercial A/C, including Heat Pumps, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/3_Volume3/V3_7_Ch7_ODS_Substitutes.pdf
Leakage rate (Chillers)	2%	-	IPCC 2006, Volume 3, Chapter 7, Table 7.9 - ESTIMATES FOR CHARGE, LIFETIME AND EMISSION FACTORS FOR REFRIGERATION AND AIR-CONDITIONING SYSTEMS - Residential and Commercial A/C, including Heat Pumps, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/3_Volume3/V3_7_Ch7_ODS_Substitutes.pdf
Leakage rate, YSC, CO2	4%	-	IPCC/TEAP Special Report: Safeguarding the Ozone Layer and the Global Climate System, Volume 4.6 What are the most important findings for fire protection, Page 72
Category 2			
EF- Electric	0,442	kg $CO_{2e/kWh}$	Turkey-wide Electricity Generation Emission Factor, 2024, published by the Ministry of Energy and Natural Resources of the Republic of Turkey; https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/EmissionFactors/2022_Uretim_Tuketim_EF.pdf
Category 3			
Category 3.1 and 3.2			
EF- Container Ship, Average	0,01612	kg CO2e/ton*km	DEFRA 2025, Freighting goods, Container Ship, Average

EF- Average Heavy Vehicles (All HGVs) 50% full	0,12226	kg CO2e/ton*km	DEFRA 2025, Freighting goods, All HGV, %50
Category 3.3			
EF- Service Transportation	0,160	kg $CO_{2e/km}$	ICCT, INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION, 2019, https://theicct.org/sites/default/files/publications/EU-LCV-CO2-2030_ICCTupdate_20190123.pdf, Page 3, Table 2 (VW)
Category 3.4			
EF- Customer Visits	0,17474	kg $CO_{2e/km}$	DEFRA 2025, Passenger vehicles, Cars (by size), Medium car, Petrol
Category 3.5			
EF- Domestic flight	0,22928	kg CO2e/passenger*km	DEFRA 2025, Business travel- air, Domestic, Average passenger
EF- Short-haul flight	0,12786	kg CO2e/passenger*km	DEFRA 2025, Business travel- air, Short-haul, Average passenger
EF- Long-haul flight	0,15282	kg CO2e/passenger*km	DEFRA 2025, Business travel- air, Long-haul, Average passenger
EF- Railway	0,03546	kg CO2e/passenger*km	DEFRA 2025, Business travel-land, Rail, National rail
EF- Turkey	32,100	kg $CO_{2e/night}$	DEFRA 2025, Hotel Stay, Turkey
EF- Iraq	36,900	kg $CO_{2e/night}$	https://www.hotelfootprints.org
EF- United Kingdom	10,400	kg $CO_{2e/night}$	DEFRA 2025, Hotel Stay, UK
EF - Bulgaria	30,100	kg $CO_{2e/night}$	https://www.hotelfootprints.org
EF- Serbia	49,200	kg $CO_{2e/night}$	https://www.hotelfootprints.org
EF- Russia	24,200	kg $CO_{2e/night}$	DEFRA 2025, Hotel Stay, Russian Federation
EF- South Africa	51,400	kg $CO_{2e/night}$	DEFRA 2025, Hotel Stay, South Africa
EF- Germany	13,200	kg $CO_{2e/night}$	DEFRA 2025, Hotel Stay, Germany
Category 4			
Category 4.1			
EF- POLYOL	3,220	tons of $CO_{2e/ton}$ of product	Cavalaglio, G.; Mecca, I.; Iodice, P.; Giannoni, T.; Gelosia, M.; Nicolini, A.; Barros Lovate Temporim, R. Life Cycle Assessment of Polyol Production from Lignin via Organosolv and Liquefaction Treatments. Sustainability 2023, 15, 15905. https://doi.org/10.3390/su152215905 (Polyester polyol)

EF- CASTOR OIL	8,030	tons of $CO_{2e/ton}$ of product	Hydrogenated Castor Oil (Castor Oil) – Environmental Product Declaration - (Castor International), 2024, https://www.mrpi.nl/epd-files/epd/1.1.00745.2025%20EPD%20HCO%20Castor_signed.pdf (A1+A2+A3)
EF-ISOCYANATE	2,131	tons of $CO_{2e/ton}$ of product	CRADLE-TO-GATE LIFE CYCLE ANALYSIS OF METHYLENE DIPHENYL DIISOCYANATE (MDI), Franklin Associates, A Division of ERG July, 2022, Cradle-to-Gate-Life-Cycle-Analysis-of-Methylene-Diphenyl-Diisocyanate-Resin-Precursor.pdf
EF- ETHOXY PROPANOL	3,100	tons of $CO_{2e/ton}$ of product	Environmental Performance Assessment of a Novel Process Concept for Propanol Production from Widely Available and Wasted Methane Sources, Ind. Eng. Chem. Res. 2022, 61, 11071−11079, https://doi.org/10.1021/acs.iecr.2c00808
EF- TITANIUM DIOXIDE	11,000	tons of $CO_{2e/ton}$ of product	Sovereign's natural rutile to significantly reduce pigment industry carbon footprint, SOVEREIGN METALS LIMITED, 22 March 2022, https://api.investi.com.au/api/announcements/svm/b69c07e7-2ff.pdf (Scope 1,2 and 3, synthetic route)
EF- Varil - Metal	3.824,0934	kg $CO_{2nd/ton}$	DEFRA 2025, Material use, Construction, Metals: Primary material production
EF- Pallet - Wood	269,5042	kg $CO_{2nd/ton}$	DEFRA 2025, Material use, Construction, Wood: Primary material production
EF- Kova -Metal	3.824,0934	kg $CO_{2nd/ton}$	DEFRA 2025, Material use, Construction, Metals: Primary material production
EF- Stretch - Plastic Film	2.965,0779	kg $CO_{2nd/ton}$	DEFRA 2025, Material use, Plastics: LDPE and LLDPE (incl. forming), Primary material production
EF- PET Strap - Unbreakable Plastic Strip	3.863,9013	kg $CO_{2nd/ton}$	DEFRA 2025, Material use, Plastics: Plastics: PET (incl. forming), Primary material production
EF- IBC - Cube Material in the form of	3.354,2806	kg $CO_{2nd/ton}$	DEFRA 2025, Material use, Plastics: Average plastic rigid, Primary material production
EF- Office Supplies	0,111	kg $CO_{2e/USD}$	EPA2022, Office Supplies and Stationery Stores
EF- Su	0,19130	kg $CO_{2e/m3}$	DEFRA 2025, Water supply
EF - WTT-Natural gas	0,33660	kg $CO_{2e/m3}$	DEFRA 2025, WTT- fuels, Natural Gas
EF - WTT- Diesel	0,61101	kg $CO_{2e/L}$	DEFRA 2024, WTT- fuels, Diesel (average biofuel blend)
EF - WTT-Petrol	0,58094	kg $CO_{2e/L}$	DEFRA 2024, WTT- fuels, Petrol (average biofuel blend)
EF - WTT-Electricity Generation	0,04590	kg CO_{2e} /kWh	DEFRA 2025, WTT- UK Electricity (generation)
EF - WTT-Electricity Transmission and Distribution	0,00397	kg CO_{2e} /kWh	DEFRA 2025, WTT- UK Electricity (T&D)

EF - Electricity Transmission Distribution Loss Rate	15%	-	https://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?end=2014&locations=TR&most_recent_year_desc=false&start=2005

Category 4.2			
EF - Laboratory Instrument	0,102	kg $CO_{2e/USD}$	EPA EEIO 2022, Analytical Laboratory Instrument Manufacturing
EF - Electronic Device	0,143	kg $CO_{2e/USD}$	EPA EEIO 2022, Computer Terminal and Other Computer Peripheral Equipment Manufacturing
EF - Furniture	0,246	kg $CO_{2e/USD}$	EPA EEIO 2022, Institutional Furniture Manufacturing
EF - Software License	0,080	kg $CO_{2e/USD}$	EPA EEIO 2022, Software Publishers
EF - Server	0,058	kg $CO_{2e/USD}$	EPA EEIO 2022, Electronic Computer Manufacturing
EF - Industrial Machinery	0,185	kg $CO_{2e/USD}$	EPA EEIO 2022, Other Industrial Machinery Manufacturing
EF - Solar Energy System	0,215	kg $CO_{2e/USD}$	EPA EEIO 2022, Semiconductor and Related Device Manufacturing
EF - Laptop	0,058	kg $CO_{2e/USD}$	EPA EEIO 2022, Electronic Computer Manufacturing
EF - Metal Material	0,721	kg $CO_{2e/USD}$	EPA EEIO 2022, Aluminum Sheet, Plate, and Foil Manufacturing
EF - Phone	0,096	kg $CO_{2e/USD}$	EPA EEIO 2022, Telephone Apparatus Manufacturing
EF - Construction / Retrofitting	0,239	kg $CO_{2e/USD}$	EPA EEIO 2022, Industrial Building Construction
EF - Forklift	0,253	kg $CO_{2e/USD}$	EPA EEIO 2022, Motor Vehicle Body Manufacturing
EF - Electric Vehicle	0,240	kg $CO_{2e/USD}$	EPA EEIO 2022, Automobile Manufacturing
EF - Household Electric Appliance	0,172	kg $CO_{2e/USD}$	EPA EEIO 2022, Major Household Appliance Manufacturing
Category 4.3			
EF - Wastewater	0,171	kg $CO_{2e/m3}$	DEFRA 2025, Water treatment
EF - Wastes	4,686	kg $CO_{2nd/ton}$	DEFRA 2025, Waste Disposal, Commercial and industrial waste and DEFRA 2025, Waste Disposal, Plastics: average plastics
Category 4.5			
EF - Occupational Safety and Occupational Physician Service	0,080	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Professional, Scientific, and Technical Services
EF - Food Service	0,132	kg $CO_{2e/USD}$	EPA EEIO 2022, Food Service Contractors
EF - Surveillance Service	0,074	kg $CO_{2e/USD}$	EPA EEIO 2022, Security Guards and Patrol Services
EF - Communications and Internet	0,096	kg $CO_{2e/USD}$	EPA EEIO 2022, Wireless Telecommunications Carriers (except Satellite)

EF - Full Certification and Consultancy Service	0,041	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Legal Services
EF - High Voltage Operation Responsibility	0,078	kg $CO_{2e/USD}$	EPA EEIO 2022, Administrative Management and General Management Consulting Services
EF - Investment Incentive Certificate Consultancy Service	0,041	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Legal Services
EF - Power BI Reporting Consultancy	0,080	kg $CO_{2e/USD}$	EPA EEIO 2022, Other Computer Related Services
EF - Environmental Consulting Service	0,090	kg $CO_{2e/USD}$	EPA EEIO 2022, Environmental Consulting Services
EF - Process Consulting	0,078	kg $CO_{2e/USD}$	EPA EEIO 2022, Other Management Consulting Services
EF - Computing	0,089	kg $CO_{2e/USD}$	EPA EEIO 2022, Computer Systems Design Services
EF - Mobile Healthcare	0,180	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Miscellaneous Ambulatory Health Care Services
EF - Quality Management	0,078	kg $CO_{2e/USD}$	EPA EEIO 2022, Other Management Consulting Services
EF - Customs Brokerage Service Fee	0,041	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Legal Services
EF - Legal Consultancy	0,041	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Legal Services
EF - KAI and Sustainability Consultancy Service	0,090	kg $CO_{2e/USD}$	EPA EEIO 2022, Environmental Consulting Services
EF - Ink Formulation Consultancy	0,080	kg $CO_{2e/USD}$	EPA EEIO 2022, All Other Professional, Scientific, and Technical Services