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**2024 Carbon Emissions Report**

**Greenhouse Gas**

**Scope 1**

**Scope 2**

**Scope 3**

**The report (January 1, 2024 – November 30, 2024)**

## **Preface**

**Greenhouse Gas Inventory Report, ISO 14064-1 “Greenhouse Gases – Part 1: Greenhouse Gas Emissions and**

**This inventory was prepared in accordance with clause 7.3.1 of the “Narrow Guidelines and Specifications for the Calculation and Reporting of Dismissals at the Organizational Level” standard. The IPCC methodologies and national reference calculations valid during the inventory period were used as the basis for creating the inventory.**

**In this study, greenhouse gases generated within the scope of the organization's activities and environmental management were examined.**

**Within this scope, it has been taken into consideration as a new performance criterion.**

## PREPARATION OF GREENHOUSE GAS EMISSION REPORT

### What is a Carbon Footprint?

Carbon footprint is a term used to describe the amount of carbon that each person causes to be released into the atmosphere as a result of transportation, heating, energy consumption, or any product they purchase. Another

In short, the production of energy required for every product we buy or every activity we carry out.

It represents the total amount of carbon gas released into the atmosphere during a given period.

Climate change, which has been ongoing for millions of years under the influence of natural processes, is now caused by human activity.

Environmental pollution has further increased its impact and damage. The clean and healthy environment we inherited from the past...

Every individual and organization has a responsibility to ensure that the environment is passed on to future generations as it should be.

That is a fact. In this context, we aim to demonstrate our sensitivity towards the environment and climate, as well as the environment.

Calculating our carbon footprint in order to make a concrete contribution to the measures taken against pollution and

Working on reducing carbon footprints, especially fossil fuels, has become an important task.

Since it is a definition based on energy obtained from fuels, reducing the carbon footprint also

This means reducing or optimizing energy consumption. This is important for businesses.

Reducing energy costs can only be achieved with a package of measures that will initiate a cycle of change. Carbon footprint analysis essentially means developing a new energy usage culture for organizations.

It is coming.

In addition to each activity having a different carbon footprint, studies conducted on an individual or company basis show...

Various factors need to be taken into account. Internationally, carbon footprint calculations require different factors to be considered.

Various methods and standards have been developed. Among the standards addressing the six main greenhouse gases (CO<sub>2</sub>,

CH<sub>4</sub>, N<sub>2</sub>O, PFC, HFC, SF<sub>6</sub>) evaluated under the Kyoto Protocol, the Intergovernmental Climate Change Standard is prominent.

In addition to the methods published by the Intergovernmental Panel on Change (IPCC), the GHG Protocol, ISO 14064, and CDP are also used.

PAS 2050 is coming.

### Calculating Greenhouse Gas Emissions - Processes Followed - Defining the Objective

Carbon footprint calculation is about determining the goals to be achieved. For example, carbon footprint results...

It can be used in setting CO<sub>2</sub> reduction targets and identifying potential CO<sub>2</sub> reduction measures.

### Determining Borders

Once the objective is determined, the limits for carbon footprint (the limits specified in the applicable standards) are defined.

Various selections should be made to determine (while remaining within) the scope. The most common for corporate reporting...

The scope used is operational control scope. This refers to the organization's daily operational controls.

will calculate and account for the carbon footprint resulting from all activities under its purview.

This means that the company will receive certain emissions outside of its own activities.

will be taken into consideration.

The establishment of the organization's boundaries and limited control over property.

Due to its responsibility, the approach method used in calculating emissions has been chosen as the 'control approach'. Any changes made to the chosen method...

The change will be declared in the following year's greenhouse gas report, and calculations will be based on the base year.

It will be renewed.

### Data Collection and Application of Emission Factors

Once the limits and scope of the Carbon Footprint are agreed upon, specific data will be provided for the activities.

Data can be collected and used to calculate emission factors and global warming potentials. This method of collecting information is called an inventory. Emission factors can vary from country to country and over time.

It can change. There are many sources for emission factors, such as the IPCC guidelines and the WBCSD's GHG Protocol. It is available.

### Evaluation of Results and Reporting of Footprints

The report should be transparent, and the choices and assumptions made should be clearly stated.

### Selection of the Calculation Method

In greenhouse gas calculations, the IPCC, Level-1 Methodology, and Level-2 Methodology for activity data containing national information were used. Since production data from Turkish Electricity Generation Inc. (TEİAŞ) is used in electricity emission factor calculations, the Level-2 methodology is used for Scope 2 energy-related greenhouse gas emissions. Accordingly, the following formulas and variables are used in the calculations of Scope-1 and Scope-2 greenhouse gas sources. Emissions in Scope-3 are also calculated according to the following formula.

$$\text{Emissions}_{\text{fuel}} = \text{Emission}_{\text{CO}_2, \text{fuel}} + \text{Emission}_{\text{CH}_4, \text{fuel}} + \text{Emission}_{\text{N}_2\text{O}, \text{fuel}}$$
$$\text{fuel} = \text{Consumption Amount}_{\text{fuel}} \times \text{Emission Factor}_{\text{CO}_2, \text{fuel}}$$

Due to the lack of sufficient technological infrastructure for measuring all emission sources, a calculation methodology was chosen. A measurement methodology was not used. This calculation method addresses uncertainty.

This can be reflected in the results. Energy requirements are met solely by electricity. Large mass.

It does not use energy sources classified as biomass. For this reason, biomass utilization...

No relevant calculations have been made.

### Selection of Greenhouse Gas Emission Factors

Greenhouse gas emission values resulting from the consumption of imported electricity, calculated separately in CO2 equivalent tons, can be found for Turkey at [www.ea.org/CO2highlights](http://www.ea.org/CO2highlights).

Since the factor value was determined, the calculation was performed according to the TIER 2 approach. CO2 equivalent Calculated separately per ton. Greenhouse gas emission values resulting from diesel fuel consumption of company vehicles can be found at [www.ea.org/CO2highlights](http://www.ea.org/CO2highlights) for Turkey's emission factor.

Since the value was not specified, the calculation was performed using the TIER 1 approach.

This study shares greenhouse gas emissions (carbon footprint) for the organization in 2024.

The corporate carbon footprint was calculated separately, covering the period from January 1, 2024 to December 31, 2024, with 2024 as the 'base year', and then the total corporate carbon footprint was calculated.

GREENHOUSE GAS INVENTORY AND CORPORATE CARBON FOOTPRINT CALCULATION

Activity	Activity Categories	Activity Version	Scope	Greenhouse Gases
Heating System	Constant Burning	Natural gas (m³ )	Directly (Scope 1)	CO2 CH4 N2O
Air Conditioning Gases	Illicit Emissions	Air conditioning gas kg (Not calculated)	Directly (Scope 1)	R410a
Passenger Vehicles	Moving Combustion	Motorn (lt)	Directly (Scope 1)	CO2 CH4 N2O
Fire Extinguishers	Leakage Emissions	Fire Extinguisher (kg)	Indirect (Scope 2)	FM200 CO2
Electricity Consumption	Electricity	kWh	Indirect (Scope 2)	CO2
Transportation Activities	Moving Combustion	Motorn (lt)	Indirect (Scope 3)	CO2 CH4 N2O
Dangerless Waste Recovery	Open Loop	kg	Other Indirect Value (Scope 4)	CO2

Findings and Acceptances

Greenhouse Gas	Global warming Potential (GWP)
CO2	1
CH4	28
N2O	265

**In calculating greenhouse gas emissions from natural gas;**

Natural gas consumption is determined by reading the natural gas supplied from the main network via a natural gas meter.

**In calculating illicit emissions;**

The emission factor of R407C type refrigerant is determined under the "Kyoto Protocol". The data was obtained from the "EPA-Greenhouse Gas Emission Calculator" system.

For air conditioners, the annual loss/leakage amount is accepted as 4.5% of the gas filled. (Certainty= $\pm 10\%$ ) Source: "IPPC-Special Report on Safeguarding the Ozone and the Global Climate System-Chapter 5: Residential and Commercial Air

**In the calculation of fire extinguishing systems;**

Leakage rates for portable CO<sub>2</sub> fire extinguishers are 4% of the gas weight inside the cylinder. It is accepted as (Uncertainty= $\pm 2\%$ ). "Source: IPPC-Special Report on Safeguarding the Ozone and the Global Climate System- Chapter 9: Free Protection- Table 9.2

**In calculating CO<sub>2</sub> systems used for cooling purposes;**

Transportable primary CO<sub>2</sub> intakes have been included in the calculations as direct carbon emissions. Motorinn's emission factors included in the report are from the "EPA- Greenhouse Gas Emission Calculator". It was obtained from the tables.

Direct Greenhouse Gas Emissions (Scope 1)

Heating System

Heating system total amount of natural gas consumed.			8671	m3
Activity data		Emission factor	Emission amount	
8671	m3 EF CO2 =	2.040 kg/m³ 17688.840	kg CO2-equivalent	
8671	m3 EF CH4 =	0.003 kg/m³ 26.013	kg CO2-equivalent	
8671	m3 EF N2O =	0.001 kg/m³ 8.671	kg CO2-equivalent	
TOTAL EQUIVALENT DUE TO HEATING GREENHOUSE GAS EMISSION AMOUNT			17723,524	kg CO2-equivalent

Air Conditioning System

Since there is no data on greenhouse gas emissions leaks from air conditioning systems for the year 2024, this amount has not been included in the calculations.

Passenger Vehicles

Consumption of passenger vehicles in 2024; Consumption of generators in 2024.

Total amount of diesel fuel consumed from vehicles and generators.			1500	lt
Activity data		Emission factor	Emission amount	
750	lt	EF CO2 =	2.51 kg/lt 1882.500	kg CO2-equivalent
750	lt	EF CH4 =	0.00029 kg/lt 0.218	kg CO2-equivalent
750	lt	EF N2O =	0.033 kg/lt 24.750	kg CO2-equivalent
FROM VEHICLES AND GENERATORS TOTAL EQUIVALENT GREENHOUSE GAS EMISSIONS EMISSION AMOUNT			1907,468 kg CO2 equivalent	

Fire Extinguishers

The amount of CO2 leaking from fire extinguishers is projected for 2024 .

CO2 Cylinder					
			42 kg		
Tube type	changing tube quantity	tube kg	Total kg	Activity data	Emission amount
CO2 Cylinder	6	6	36 kg	1 kg/	36,000 kg CO2-equivalent
HFC-227ea (FM200)	1	6	6 kg	3,350 kg/	3350,000 kg CO2-eq
TOTAL EQUIVALENT GREENHOUSE GASES FROM FIRE EXTINGUISHERS EMISSION AMOUNT					3,386,000 kg CO2 equivalent

Indirect Greenhouse Gas Emissions - Electricity Consumption (Scope 2)

Electricity consumption is the total amount of electricity consumed.		81970 kWh
Activity data	Emission factor	Emission amount
81970	0.493 CO2-equivalent/kWh	40411 kg CO2-equivalent
CAUSED BY ELECTRICITY CONSUMPTION TOTAL EQUIVALENT GREENHOUSE GAS EMISSIONS AMOUNT		
		40411 kg CO2-equivalent



Transportation Activities (Scope 3)

Business trip total km			1500	km
Activity data		Emission factor	Emission amount	
1000	KM EF <sub>CO2</sub> =	0.080 kg/km	80	kg CO2-equivalent
TOTAL KILOMETERS FROM BUSINESS TRIPS EMISSION AMOUNT			80	kg CO2-equivalent

Recovery/Disposal of Non-Hazardous Waste (Scope 3)

Waste Type	Waste Amount (kg)	Emission Factor	Annual CO <sub>2</sub> Emissions (kg)
Organic Waste	544	0.446	242,624
Paper Waste	1674	0.022	36,828
Plastic Waste	1279	0.022	28,138
Mixed PACKAGING	650	0.022	14.3
Total			321.89

TOTAL EQUIVALENT GREENHOUSE GAS EMISSION AMOUNT

TOTAL EQUIVALENT GREENHOUSE GAS EMISSION AMOUNT		
TOTAL EQUIVALENT DUE TO HEATING GREENHOUSE GAS EMISSION AMOUNT	17723,524	CO <sub>2</sub> (kg)
CAUSED BY VEHICLES AND GENERATORS TOTAL EQUIVALENT GREENHOUSE GAS EMISSION AMOUNT	1907,468	CO <sub>2</sub> (kg)
TOTAL CAUSED BY FIRE EXTINGUISHERS EQUIVALENT GREENHOUSE GAS EMISSION AMOUNT	3,386,000	CO <sub>2</sub> (kg)
TOTAL AMOUNTS RESULTING FROM ELECTRICITY CONSUMPTION EQUIVALENT GREENHOUSE GAS EMISSION AMOUNT	40411,210	CO <sub>2</sub> (kg)
TOTAL KILOMETERS FROM BUSINESS TRIPS EMISSION AMOUNT	80	CO <sub>2</sub> (kg)
RECOVERY/DISPOSAL OF NON-HAZARDOUS WASTE 321.89		CO <sub>2</sub> (kg)