

**iŖ GYO**



# **GREENHOUSE GAS EMISSIONS**

2024



# 1. INTRODUCTION

## 1.1. Organization that Prepared the Greenhouse Gas Report

İş Gayrimenkul Yatırım Ortaklığı A.Ş. (İş GYO) was established by İş Gayrimenkul Yatırım ve Proje Değerlendirme A.Ş.'s transformation into a real estate investment trust by taking over Merkez Gayrimenkul Yatırım ve Proje Değerlendirme A.Ş. on 6 August 1999. Investing in real estate and real estate projects, İş GYO continues its activities in accordance with the regulations of the Capital Markets Board.

## 1.2. The Purpose of Greenhouse Gas Report

The possible effects of climate change are wide-ranging, including the environment, all humanity and the global economy. İş GYO is aware of the effects of climate change on our daily lives and reports its greenhouse gas inventory by taking responsibility in this regard.

İş GYO presents this report in order to monitor its progress in greenhouse gas emissions. But more importantly, it aims to raise awareness within the company and encourage stakeholders to take action.

## 1.3. Greenhouse Gas Report Period

The greenhouse gas inventory report has been prepared for the year 2023. GHG inventory starts 1st January and ends 1st December of each year.

## 1.4. Organization Boundaries

The GHG standard allows two approaches to be used in determining scopes and boundaries: control and equity share approaches. The GHG standard does not choose one of the two methods, but leaves the choice to the user.

- Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation.
- Under the control approach, a company accounts for 100 percent of the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest but has no control. Control can be defined in either financial or operational terms.
  - If a company has financial control over its activities in a way that affects its commercial interests,
  - If the company can make all operational decisions on its own, it is deemed to have operational control.

Companies would like to reduce their greenhouse gas emissions generally prefer the operational control approach. İş GYO chooses an operational control approach in calculating greenhouse gases emissions.

İş GYO's locations are listed below within the scope:

- Head Office: İş Kuleleri Kule-2 Floor:10-11 Levent 34330 İstanbul

- Kanyon A.Ş.
- Kanyon Shopping Mall
- Office Lamartine

The control and ownership of the sources and carbon sinks considered in the greenhouse gas report belongs to İŞ GYO.

## 1.5. Greenhouse Gases Emissions

7 greenhouse gases defined under the Kyoto Protocol were evaluated in the inventory. These gases are listed below:

- CO<sub>2</sub>      Carbon Dioxide
- CH<sub>4</sub>      Methane
- N<sub>2</sub>O      Nitrousoxide
- HFCs      Hydrofluorocarbons
- PFCs      Perfluorocarbons
- SF<sub>6</sub>      Sulfurhexafluoride
- NF<sub>3</sub>      Nitro trifluoride

The scope of greenhouse gas emissions is classified as follows:

- Scope 1- Direct greenhouse gas emissions: This encompasses all significant emissions from stationary and mobile sources that are owned or directly controlled by İŞ GYO. All owned or leased assets are included in these sources. The scope boundary is defined as all emissions sources that can be 'controlled'. This includes also gases from cooling sources used for activities.
- Scope 2- Indirect energy-related greenhouse gas emissions: This refers to emissions sourced from energy purchased for activities. These sources can include grid electricity used or other energy for heating/cooling purposes.
- Scope 3- Other indirect greenhouse gas emissions: This includes greenhouse gas emissions under the company's control that result from activities other than those covered under indirect energy-related emissions. These emissions can originate from upstream or downstream activities related to the company's core operations, employee travel, or subcontractor activities. The key determinant in this scope is the level and quality of available data.

### Direct GHG Emissions of İŞ GYO (Scope 1)

- Emissions from all owned / leased vehicles
- Emissions from fuels used to heat owned/leased buildings
- Refrigerant gases
- Generator (diesel)

### Indirect GHG Emissions of İŞ GYO (Scope 2)

Purchased electricity of

- Head Office Building
- Kanyon A.Ş.

- Kanyon Shopping Mall
- Office Lamartine

#### Other Indirect GHG Emissions of İş GYO (Scope 3)

İş GYO's activities contribute to greenhouse gas emissions through various indirect sources associated with Scope 3 of the GHG Protocol. These include "fuel and energy-related activities," "waste generated from operations," "business travel flights," "employee commuting," and "tap water use."

### 1.6. Other Emissions Not Included in the Greenhouse Gas Inventory

İş GYO does not have emissions/removals from the following sources:

- Biomass burning processes are not carried out under the control of İş GYO.
- No other energy production or sales transactions are carried out under İş GYO control.

### 1.7. Greenhouse Gas Calculation Methodology

IPCC (Intergovernmental Panel on Climate Change) emission factors, which are the most common and reliable source in this regard, were used in the calculations. Turkey does not have country-specific emission factors. The greenhouse gas inventory calculations for 2023 have been updated with the emission factors announced in the 6th Assessment Report (2021). In accordance with the intended use of the greenhouse gas inventory, country-specific lower calorific values and density data of the fuels were used in the calculations.

IPCC, TIER-1 methodology was used for greenhouse gas calculations within the limits determined for İş GYO company, and TIER-2 methodology was used for activity data with national information. In electricity emission factor calculations, Türkiye Elektrik Üretim A.Ş. since production data is used, TIER-2 methodology is used for Scope 2 energy indirect greenhouse gas emissions. Accordingly, the following formulas and variables are used in calculations according to the types of Scope 1, Scope 2 and Scope 3 greenhouse gas sources.

$$\text{Emissions}_{\text{fuel}} = \text{Emission}_{\text{CO}_2, \text{fuel}} + \text{Emission}_{\text{CH}_4, \text{fuel}} + \text{Emission}_{\text{N}_2\text{O}, \text{fuel}} + \dots$$

$$\text{Emission}_{\text{CO}_2, \text{fuel}} = \text{Consumption Amount, fuel} \times \text{Emission Factor}_{\text{CO}_2, \text{fuel}}$$

Greenhouse gas emissions have been calculated in accordance with the indicators and methodologies in the EIE (General Directorate of Electrical Affairs), IPCC (Intergovernmental Panel on Climate Change) and the national greenhouse gas report. In the relevant calculations, lower thermal values are used compared to the energy source in the Annex-2 "Low Calorific Value of Energy Resources and Conversion Coefficients to Petroleum Equivalent" table specified in the "Regulation on Increasing Efficiency in the Use of Energy Resources". This regulation, which number 28097, was published by the Ministry of Energy and Natural Resources in 2011. The distribution of the sources that cause greenhouse gas emissions in the buildings under the control of İş GYO is as follows:

- Scope 1 - Greenhouse Gas Emission: At Head Office and Branches fuels used (natural gas, company vehicles and refrigerants)
- Scope 2 - Greenhouse Gas Emission: Electricity consumption
- Scope 3 - Greenhouse Gas Emission: Water supply and business travel (flights)

Details of the sources used for these consumptions are given below:

- IPCC 6th Assessment Report for diesel and gasoline consumptions for company vehicles Table 3.13 Used CO<sub>2</sub> Emission Factors, Table 3.2.1 Road Transport Lower and Upper CO<sub>2</sub> Emission Factors values,
- IPCC 6th Assessment Report for natural gas fuel consumptions Table 3.2.1 Used CO<sub>2</sub> Emission Factors and Table 2.3 Manufacturing Industries and Constant Combustion values for construction,
- IPCC 6th Assessment Report for generator - diesel consumptions Table 2.4 Default Emission Factors for Steady Combustion in Commercial / Institutional Category (default) CO<sub>2</sub> emission factor and (default) N<sub>2</sub>O and CH<sub>4</sub> values are used.
- DEFRA 2022 and 2023 emission factors values were used for business travel, fuel and energy-related activities, business travel flights, waste generated from operations and tap water use calculated in Scope 3.

The Global Warming Potentials used are shown in Table 1 and the emission factors in Table 2.

Table 1: Global Potential Warming

Greenhouse gases	GWP
CO <sub>2</sub>	1
CH <sub>4</sub>	27.9
N <sub>2</sub> O	273

Tablo 2: Emission factors, 2023

Emission Factors						
	Emission Factor	Unit	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs
Scope 1	Natural gas	kg CO <sub>2</sub> e/m <sup>3</sup>	1.938	0.001	0.001	-
	Diesel	kg CO <sub>2</sub> e/liter	2.627	0.004	0.038	-
	Motor gasoline	kg CO <sub>2</sub> e/liter	2.218	0.003	0.050	-
	Refrigerant - R410	kg CO <sub>2</sub> e/kg	-	-	-	2255.500
	Generator (diesel)	kg CO <sub>2</sub> e/liter	2.627	0.003	0.006	-
Scope 2	Electricity -2023 (Türkiye)	kg CO <sub>2</sub> e/kWh	467,968.49	160.283	1,492.019	-
Scope 3	Fuel and energy-related activities - Diesel fuel consumption for company vehicles	kg CO <sub>2</sub> e/liter	0.611	-	-	-
	Fuel and energy-related activities - Gasoline fuel consumption for company vehicles	kg CO <sub>2</sub> e/liter	0.581	-	-	-
	Fuel and energy-related activities - Natural gas consumption	kg CO <sub>2</sub> e/m <sup>3</sup>	0.337	-	-	-
	Fuel and energy-related activities - Diesel generator	kg CO <sub>2</sub> e/liter	0.611	-	-	-
	Fuel and energy-related activities - Electricity consumption	kg CO <sub>2</sub> e/ tCO <sub>2</sub> e	%13.9	-	-	-
	Waste generated from operations	kg CO <sub>2</sub> e/kg	0.021	-	-	-
	Business travel flights - Domestic flights	kg CO <sub>2</sub> e/km	0.159	0.000	0.001	-
	Business travel flights - Short-haul (Europe) flights	kg CO <sub>2</sub> e/km	0.109	0.000	0.001	-
	Business travel flights - Long-haul (Intercontinental) flights	kg CO <sub>2</sub> e/km	0.103	0.000	0.001	-
	Employee commuting	kg CO <sub>2</sub> e/person	406.000	-	-	-
	Tap water use	kg CO <sub>2</sub> e/m <sup>3</sup>	0.177	-	-	-

## 2. GHG INVENTORY

### 2.1. Reference Year

The GHG reference year was changed to 2023 to reflect current activities and access to complete and reliable data. The reference year was updated due to the pandemic effects (remote working, etc.) still continuing in 2022 and the increase in occupancy and transition to centralized systems in 2023. As a greenhouse gas calculation methodology, a calculation method based on “multiplication of greenhouse gas emissions or greenhouse gas activity data with removal factors” was applied.

### 2.2. Results of Energy Consumption

According to Table 3, in the reference year 2023, the highest energy consumption stems from building fuel and electricity consumption (5,542.70 MWh). It is observed that the total energy consumption from vehicle fuels is 299.85 MWh.

Tablo 3: Total energy consumption of İŞ GYO in 2022 and 2023, MWh

Consumption of Energy	2022 MWh	2023 MWh
Buildings fuel & electricity	5,008.23	5,542.70
Electricity purchased from the grid	261.75	264.70
Renewable Energy	4,048.00	3,765.51
Natural gas	698.48	1,423.54
Generator (diesel)	-	88.95
Fuels of vehicles	431.25	299.85
Diesel	177.99	93.41
Gasoline	253.26	206.44
TOTAL	5,439.48	5,842.55

İŞ GYO's total energy consumption in 2022 and 2023 is detailed in GJ units in Table 4. According to the table, the most energy consumption in 2023, is due to fuel use in the buildings (19,953.77 GJ). The energy consumption resulting from fuels of vehicles are calculated as 1,079.46 GJ.

Tablo 4: Total energy consumption of İŞ GYO in 2022 and 2023, GJ

Consumption of Energy	2022 GJ	2023 GJ
Buildings fuel & electricity	18.029,67	19,953.77
Electricity purchased from the grid	942.30	952.93
Renewable Energy	14,572.84	13,555.86
Natural gas	2,514.53	5,124.76
Generator (diesel)	-	320.22
Fuels of vehicles	1,552.52	1,079.46
Diesel	640.78	336.27
Gasoline	911.74	743.19
<b>TOTAL</b>	<b>19,582.19</b>	<b>21,033.24</b>

### 2.3. Results of GHG Inventory

In Figure 1, it can be seen the distribution of greenhouse gas emissions in 2023.

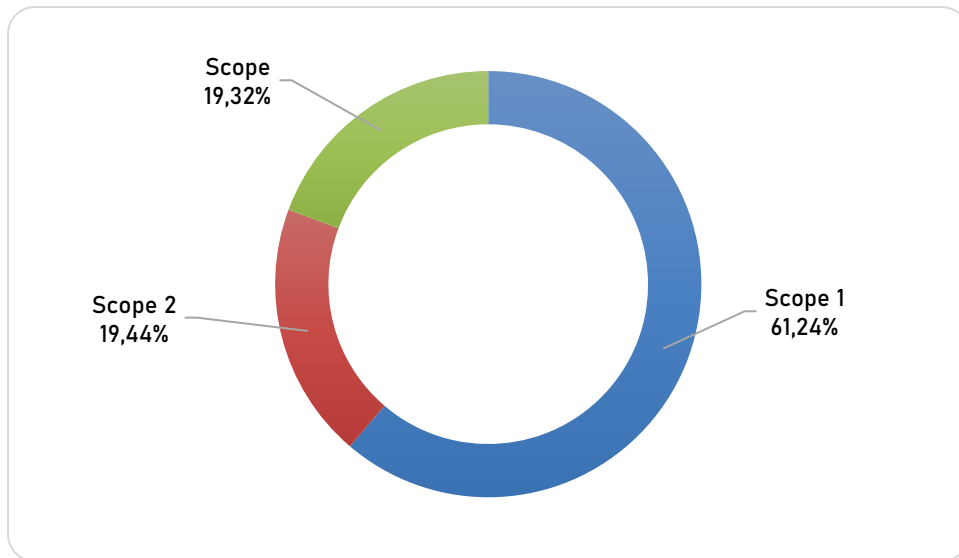


Figure 1: GHG emissions by scopes, 2023



According to the table, greenhouse gas emissions are highest in Scope 1 (61.24%) for the 2023. Scope 2 takes the second place (19.44%), while Scope 3 takes the third place (19.32%). In 2022, 56.36% of the total greenhouse gas emissions are Scope 1, 27.35% are Scope 2, and lastly, 16.29% are Scope 3 emissions.

Tablo 5: Emissions by scopes, tCO<sub>2</sub>e

Greenhouse Gas Emissions (tCO <sub>2</sub> e)	2022	%	2023	%	2022-2023 difference (%)
Scope 1	254.84	56.36%	391.67	61.24%	+53.69%
Scope 2	123.66	27.35%	124.31	19.44%	+0.53%
Scope 3*	73.67	16.29%	123.57	19.32%	+67.74%
<b>Total</b>	<b>452.17</b>	<b>100.00%</b>	<b>639.54</b>	<b>100.00%</b>	<b>+41.44%</b>

\* In 2022, only emissions from fuel and energy-related activities, waste generated from operations, business travel, and grid electricity use were included in Scope 3 emissions. However, in 2023, emissions from fuel and energy-related activities, waste generated from operations, business travel, employee commuting, and tap water use. (GHG Protocol- Category 3, 5, 6, and 7) were included.

In 2023, compared to 2022, Scope 1 emissions increased by 53.69%, Scope 2 emissions increased by 0.53%, and Scope 3 emissions increased by 67.74%. The reason for the increase in Scope 3 emissions is the inclusion of emissions related to Category 7 (employee commuting) in 2023.

As seen in Table 5, the annual total greenhouse gas emissions were calculated as 452.17 tons of CO<sub>2</sub>e in 2022 and 639.54 tons of CO<sub>2</sub>e in 2023.

Scope 2 Emissions calculations for İŞ GYO are calculated on a local and market basis. Local based emissions (1,892.70 tCO<sub>2</sub>e) are calculated by multiplying all supplied electricity by the grid average emission factor, while market-based emissions (124.31 tCO<sub>2</sub>e) are calculated by considering supplier specific or renewable energy supply certificates such as I-REC. With the I-REC certificates received in 2023 for Head Office, Kanyon A.Ş. and Kanyon Shopping Mall and locations, it has documented that electricity consumption is provided from 100% renewable electricity sources.

Tablo 6: Scope 2 Emissions Calculations, tCO<sub>2</sub>e

Scope 2	2022	2023
Location-based Emissions	2.032,20	1892,70
Market-based Emissions	123,66	124,31

In 2023, the total water consumption from tap water use amounted to 33,846.42 cubic meters, showing a 98.55% increase compared to 2022. Local government-provided municipal water is utilized for water consumption. Wastewater is directed to treatment facilities and other infrastructures managed by local authorities.

Tablo 7: 2022 and 2023 Water Consumption Data, m<sup>3</sup>

	2022	2023
Total Water Consumption	17.047,00	33.846,42

## 2.4. Uncertainty

İş GYO's greenhouse gas emissions are calculated by consolidating greenhouse gas activity data. The data can be specified as the amounts of consumption taken from the meters billed by the distributor companies. The main factors that can affect data quality are the accuracy of the meters, the calibration of the meters, and deviations in temperature and pressure for some of the fuels.

In the analysis made with the uncertainty levels determined for the activity data and emission factors (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) related to the calculated greenhouse gas emission sources, the uncertainty of greenhouse gas inventory of İş GYO was calculated as 3.5% in 2023. The greenhouse gas inventory for 2023 represents greenhouse gas sources with a ratio of over 99%.

### 3. RESULT

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The issue of climate change has been on the agenda of the international public for many years and concrete steps have been taken since this date to combat the negativities it has caused. The 2015 Paris Climate Agreement and the announcement of the European Green Agreement in December 2019 are the main steps in this process. The European Green Deal is the EU's new growth strategy, which includes key objectives such as net zero greenhouse gas emissions by 2050 and ending the dependence of economic growth on resource use. Turkey became a side of to the Kyoto Protocol in 2009 and ratified the Paris Agreement in 2021. It also announced its goal of becoming net zero by 2053.

Companies also carry out their work by taking into account the developments in this sense. İŞ GYO is aware of the effects of climate change and takes responsibility in this regard, calculating its greenhouse gas emissions and reporting its greenhouse gas inventory. In this context, for 2023, Scope 1 emissions, known as direct emissions, are calculated as 391.67 tCO<sub>2</sub>e, Scope 2 emissions, which are emissions from electricity consumption, calculated as 124.31 tCO<sub>2</sub>e, and Scope 3 emissions, also known as indirect emissions, calculated as 123.57 tCO<sub>2</sub>e. Compared to 2022, there is a 41.44% increase in total emissions. With the I-REC certificates it received for the reporting year, İŞ GYO documented that the Head Office, Kanyon A.Ş. and Kanyon Shopping Mall electricity consumption is from 100% renewable electricity sources.