

iŞ GYO



GHG REPORT

2023



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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 2022. 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:

- CO₂ Carbon Dioxide
- CH₄ Methane
- N₂O Nitrousoxide
- HFCs Hydrofluorocarbons
- PFCs Perfluorocarbons
- SF₆ Sulfurhexafluoride
- NF₃ Nitro trifluoride

The scope of greenhouse gas emissions is classified as follows:

- Scope 1 – Direct greenhouse gas emissions: Direct GHG emissions occur from sources that are owned or controlled by the company. Company vehicles, natural gas consumption emissions etc. are within this scope.
- Scope 2 – Indirect energy greenhouse gas emissions: Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company.
- Scope 3 – Other indirect greenhouse gas emissions: Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. These emissions may result from upstream or downstream activities the company, employee commuting or sub-contractor activities. Business travel from Scope 3 emissions is included in the inventory as of 2019. Emissions from water supply is included in the inventory as of 2022.

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)

Of the 15 categories specified by the GHG Protocol for Scope 3, "waste generated in operations", "water supply" and "business travel" are included in the emission calculation.

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 2019-2022 have been updated with the emission factors announced in the 5th Assessment Report (2014). 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.

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

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

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 5th Assessment Report for diesel and gasoline consumptions for company vehicles Table 3.13 Used CO₂ Emission Factors, Table 3.2.1 Road Transport Lower and Upper CO₂ Emission Factors values,
- IPCC 5th Assessment Report for natural gas fuel consumptions Table 3.2.1 Used CO₂ Emission Factors and Table 2.3 Manufacturing Industries and Constant Combustion values for construction,
- IPCC 5th Assessment Report for generator - diesel consumptions Table 2.4 Default Emission Factors for Steady Combustion in Commercial / Institutional Category (default) CO₂ emission factor and (default) N₂O and CH₄ values are used.
- DEFRA 2019, 2020, 2021 and 2022 emission factors values were used for business travel 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 ₂	1
CH ₄	28
N ₂ O	265

Table 2: Emission factors, 2022

Emission Factors				
Emission Factor	Unit	CO ₂	CH ₄	N ₂ O
Natural gas (m ³)	kg CO ₂ e/m ³	1.938	0.001	0.001
Diesel (lt)	kg CO ₂ e/liter	2.627	0.004	0.037
Motor gasoline (lt)	kg CO ₂ e/liter	2.218	0.003	0.048
Refrigerant - R410	kg CO ₂ e/kg	1923.500	0.000	0.000
Generator (diesel)	kg CO ₂ e/liter	2.627	0.003	0.006
Business travel -domestic	kg CO ₂ e/km	0.129	0.000	0.001
Business travel - short haul (Europe)	kg CO ₂ e/km	0.080	0.000	0.001
Business travel -long haul (Intercontinental)	kg CO ₂ e/km	0.101	0.000	0.001
Electricity -2019 (Turkey)	kg CO ₂ e/kWh	0.512	0.000	0.002
Electricity -2020 (Turkey)	kg CO ₂ e/kWh	0.475	0.000	0.002
Electricity -2021 (Turkey)	kg CO ₂ e/kWh	0.455	0.000	0.001
Electricity- 2022 (Turkey)	kg CO ₂ e/kWh	0.471	0.000	0.001

2. GHG INVENTORY

2.1. Reference Year

The greenhouse gas reference year is 2022, reflecting current activities and access to complete and reliable data. 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

The total energy consumption of İŞ GYO between the years 2020-2022 is detailed in Table 3. According to the table, the highest energy consumption in 2022, the reference year, is due to building fuel and electricity consumption (960,2 MWh). Energy consumption of vehicle fuels are 720 MWh. In 2022, it is seen that the energy consumption arising from building fuel and electricity consumption is 1208.6 MWh, and the energy consumption arising from vehicle fuels is 431,3 MWh in total.

Table 3: Total energy consumption of İŞ GYO, MWh

Consumption of Electricity	2020 MWh	2021 MWh	2022 MWh
Buildings fuel & electricity	4,887.9	2,060.2	960.2
Electricity purchased from the grid	3,538.2	265.3	261.7
Natural gas	1,349.7	1,792.6	698.5
Generator (diesel)	0.0	2.2	0.0
Fuels of vehicles	322.6	395.7	431.3
Diesel	191.0	202.3	178.0
Gasoline	131.6	193.5	253.3
TOTAL	5,210.5	2,455.9	1,391.5

İş GYO's total energy consumption between the years 2020-2022 is detailed in GJ units in Table 4. According to the table, the most energy consumption in 2022, the reference year, is due to fuel use in the buildings (3,456.8 GJ). The energy consumption resulting from fuels of vehicles are calculated as 1.552.5 GJ.

Table 4: Total energy consumption of İş GYO, GJ

Consumption of Electricity	2020	2021	2022
	GJ	GJ	GJ
Buildings fuel & electricity	17,596.6	7,416.6	3,456.8
Purchased electricity	12,737.5	955.2	942.3
Natural gas	4,859,1	6,453.3	2,514.5
Generator (diesel)	0.0	8.1	0.0
Fuels of vehicles	1,161.2	1,424.7	1,552.5
Diesel	687.5	728.2	640.8
Gasoline	437.8	696.5	911.7
TOTAL	18,757.8	8,841.3	5,009.4

2.3. Results of GHG Inventory

In Figure 1, it can be seen the distribution of greenhouse gas emissions in 2022.

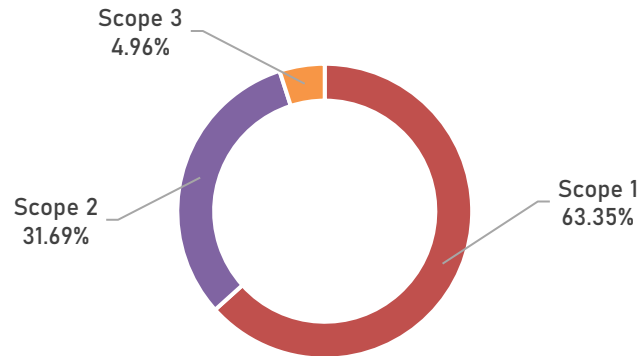


Figure 1: GHG emissions by scopes, 2022

According to the table, greenhouse gas emissions are highest in Scope 1 (63.3%) for the 2022 reference year. Scope 2 takes the second place (31.7%), while Scope 3 takes the third place (4.7%). In 2022, 52.7% of the total greenhouse gas emissions are Scope 1, 30.2% are Scope 2, and lastly, 17% are Scope 3 emissions.

Table 5: Emissions by scopes, tCO₂e

Greenhouse Gas Emissions (tCO ₂ e)	2020	2021	2022
Scope 1	358.2	467.2	254.8
Scope 2	1,770.3	233.3	127.5
Scope 3*	18.1	25.5	20.0
Grand Total	2,146.6	762.0	402.3

*Only waste generated in operations, water supply and business travel (flights) are calculated as scope 3 (GHG Protocol - Category 5 and 6).

As seen in Table 5, the annual total greenhouse gas emissions were calculated as 2,146.6 tons of CO₂e in 2020, 726 tons of CO₂e in 2021 and 402.3 tons of CO₂e in 2022.

Scope 2 Emissions calculations for İş GYO are calculated on a local and market basis. Local based emissions (2,036 tCO₂e) are calculated by multiplying all supplied electricity by the grid average emission factor, while market based emissions (127.5 tCO₂e) are calculated by considering supplier specific or renewable energy supply certificates such as I-REC. With the I-REC certificates received in 2022 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.

Table 6: Scope 2 Emissions Calculations, tCO₂e

Scope 2	2020	2021	2022
Location-based Emissions	1,771.1	2,682.1	2,036.0
Market-based Emissions	1,770.3	233.3	127.5

The total water consumption in 2022 is 16.397 cubic meters, which decreased by 44% compared to 2021, 20% increase compared to 2020. Water provided by local governments is used for water consumption. Wastewaters are dumped into infrastructures such as treatment plants directed by local governments.

Table 7: 2019-2022 Water Consumption Data, m³

	2020	2021	2022
Total Water Consumption	13,652	29,124	16,397

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 (CO₂, CH₄, N₂O) related to the calculated greenhouse gas emission sources, the uncertainty of greenhouse gas inventory of İş GYO was calculated as 3% in 2022. The greenhouse gas inventory for 2022 represents greenhouse gas sources with a ratio of over 99%.

3. RESULT

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. İŖ 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 2022, Scope 1 emissions, known as direct emissions, are calculated as 254.8 tCO₂e, Scope 2 emissions, which are emissions from electricity consumption, calculated as 127.5 tCO₂e, and Scope 3 emissions, also known as indirect emissions, calculated as 20.0 tCO₂e. Compared to 2021, there is a 45% decrease in total emissions. With the I-REC certificates it received for the reporting year, İŖ GYO documented that the Head Office, Kanyon A.Ŗ. and Kanyon Shopping Mall electricity consumption is from 100% renewable electricity sources.