

NATUREL HOLDING

2023 CARBON FOOTPRINT REPORT

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**EKONORM ÇEVRE İŞ SAĞLIĞI VE GÜVENLİĞİ ÖLÇ. HİZ. MÜH. TAAH.
SAN. TİC. LTD. ŞTİ.**



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TERMS

Table 1. Table of Terms

TERMS	EXPLANATIONS
<i>CO₂ - equivalent</i>	The international unit derived by expressing the global warming potential (GWP) of six greenhouse gases in terms of the greenhouse gas potential of one unit of carbon dioxide. It is used to establish a common denominator for the assessment of emissions (or emission reductions) of different greenhouse gases.
<i>Direct Emissions</i>	Emissions from sources controlled or owned by the organisation.
<i>Indirect Emissions</i>	Emissions arising from the organisation's activities but from sources owned or controlled by another organisation. An organisation's indirect emissions include emissions associated with the production of the electricity it purchases, etc.
<i>Emission Factor</i>	A factor that allows GHG emissions to be calculated from a unit of activity data (e.g. fuel consumed in tonnes, product produced in tonnes) and final GHG emissions.
<i>Most Suitable Techniques</i>	In principle, it is defined as the most effective and advanced stage in the development of activities and their implementation methods that demonstrate the actual suitability of special techniques that provide emission limit values designed to prevent the effects of emissions on the environment in all aspects and, where this is not possible, to reduce emissions and their effects on the environment as much as possible.
<i>Global Warming Potential (GWP)</i>	Factor indicating the radiative forcing effect (degree of damage to the atmosphere) of one unit of a greenhouse gas compared to one unit of carbon dioxide.
<i>Scope</i>	The term "Scope" is used in the GHG Protocol to define the boundaries between different types of direct and indirect emissions: Scope I refers to direct GHG emissions from the reporting organisation, Scope II refers to indirect GHG emissions from the reporting organisation, Scope III refers to indirect GHG emissions from transport, Scope IV refers to indirect GHG emissions from products used by the reporting organisation, Scope V refers to indirect GHG emissions from the use of products originating from the reporting organisation, Scope VI refers to GHG emissions from other sources.
<i>Greenhouse Gas</i>	Gases that regulate the heat balance because they are permeable to solar radiation and much more permeable to long-wavelength ground radiation. These greenhouse gases are the six gases listed in the Kyoto Protocol: carbon dioxide (CO ₂), methane, nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF ₆).
<i>Greenhouse Gas Protocol</i>	It is a standard in corporate greenhouse gas emission calculation and reporting.

PART I

1. CARBON FOOTPRINT CALCULATION STANDARDS AND METHODOLOGY

1.1. Report Boundary and Approach

The report boundary defines the subsidiaries, businesses and operations that make up Naturel Holding for the purposes of calculating and reporting GHG emissions.

Naturel Holding's carbon footprint calculation includes emissions in relation to offices located in Istanbul and Ankara, the solar power plants, and emissions in relation with the EPC and O&M services.

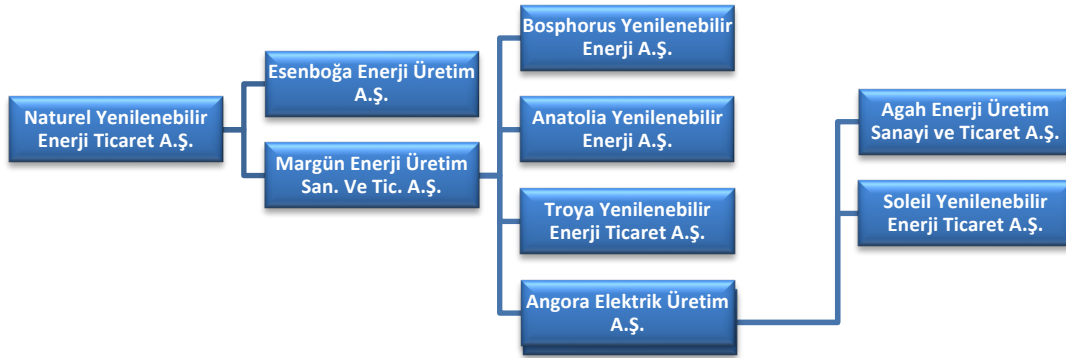
Naturel Holding A.S. operates solely in climate technologies sector, in solar energy generation, project development, EPC and O&M service provision for installation of land-type and roof-type solar power plants, via its three listed subsidiaries:

- **Naturel Yenilenebilir Enerji Ticaret A.Ş., (Naturel Enerji)**
- **Esenboğa Elektrik Üretim A.Ş., (Esenboga Elektrik) and,**
- **Margun Enerji Enerji Üretim Sanayi ve Ticaret A.S., (Margun Enerji)**

as well as, the non-listed subsidiaries.

This report calculates and states Naturel Holding's total carbon footprint under these three listed subsidiaries. The subsidiaries which are included in the emission calculations are given in the table below. The emissions of all solar power plants owned by the below subsidiaries are consolidated under Margun.

For more information on Naturel Holding and its listed and non-listed subsidiaries please visit www.naturelholding.com.tr.



1.2. Carbon Footprint Calculation Standards

GHG Protocol and ISO 14064:2018 Standard are the most widely used carbon footprint calculation methods in Turkey. Other standards used in corporate carbon footprint calculations are as follows:

- Carbon Disclosure Project
- Carbon Reduction Commitment & Energy Efficiency Scheme

- EPA Climate Leaders
- US Regional Greenhouse Gas InitiativeThe International Organisation for Standardisation (ISO) is one of the world's largest standards publishing non-governmental organisations. The ISO 14064:2018 Standards published by this organisation provide information on how to calculate and report greenhouse gas emissions. It consists of three parts;
- ISO 14064-1:2018 Greenhouse Gases - Part I: Standard for Guidelines and Specifications for the Calculation and Reporting of Greenhouse Gas Emissions and Removals at Organisation Level: Provides information on the calculation and reporting of greenhouse gas emissions at the organisation level.
- ISO 14064-2:2018 Greenhouse Gases - Part II: Establishes the baseline and details the principles and requirements for monitoring, accounting and reporting of project emissions. Focuses on GHG projects or project-based activities specifically designed to reduce GHG emissions and/or increase GHG removals. Provides the basis for verification and validation of GHG projects.
- ISO 14064-3:2018 Greenhouse Gases - Part III: Greenhouse Gas inventories details the requirements for the validation of Greenhouse Gas disclosures related to Greenhouse Gas projects and the carbon footprints of products. Describes the validation or verification process, including validation or verification planning, assessment procedures and determination of organisational, project and product GHG disclosures.

1.3. Operational Boundary

The GHG Protocol is designed to support all aspects of GHG emission accounting and reporting and aims to ensure accurate and fair reporting of GHG emissions by organisations.

The GHG protocol categorises emissions into operational scopes for effective GHG management. According to this principle, emissions are basically divided into direct and indirect. Direct emissions are emissions from sources owned or controlled by the organisation. Indirect emissions are emissions resulting from the activities of the organisation or activities controlled by the organisation.

Defining the operational boundary involves identifying the emissions associated with the subsidiaries' operations and categorising these emissions as direct and indirect emissions. Companies have to choose the scope of calculation and reporting for indirect emissions.

1.3.1. Direct greenhouse gas emissions

Scope I; Direct Emissions (These are greenhouse gas emissions generated by the subsidiaries and emitted directly to the atmosphere. These include stationary combustion emissions from natural gas, diesel fuel, mobile combustion emissions from company-owned vehicles, refrigerant gas leaks from coolers and air conditioners, raw material and final product production)

1.3.2. Indirect greenhouse gas emissions

Scope II; Indirect Emissions from Imported Energy (Includes emissions from electricity, heating and cooling purchased by the company and may vary from country to country.)

Scope III; Indirect Emissions from Transport (Emissions from transport. It covers emissions from road transport, maritime transport, personnel services, road raw material transport, personnel air travel, personnel accommodation).

Scope IV; Indirect Emissions from Products Used by the Organisation (raw material extraction, raw material/product transport between suppliers, raw material production/processing, waste storage/disposal, municipal water use, carbon footprint from supplier)

Accordingly, the operational boundaries and scope contents used in the carbon footprint report for **Naturel Holding** and its subsidiaries are summarised below:

Scope I: Fuelling of vehicles used by subsidiary employees, EPC services and O&M teams

Scope II: Electricity consumption of subsidiary offices for heating, cooling and general use. Electricity consumption power plants held by subsidiaries.

Scope III: Emissions from business travel of subsidiary employees. Emissions from business travel accommodation of subsidiaries employees,

Scope IV: The amount of waste and wastewater emissions from subsidiary offices are included in the calculations.

PART II

2. REPORTING AND EMISSION DATA

2.1. Reporting Period

The reporting period covers data from 1 January 2023 to 31 December 2023.

2.2. Data Collection and Calculation Methodology

The data obtained in the corporate carbon footprint calculation study for Naturel Holding and its subsidiaries were multiplied by the relevant emission factors and emission data by activities were obtained in terms of carbon dioxide equivalent (CO₂ e).

"Carbon Footprint Amount (tCO₂ e) = Consumption Amount X Emission Factor"

Carbon dioxide equivalent is obtained by multiplying the mass of a given greenhouse gas by its global warming potential. The global warming potentials of greenhouse gases determined by the Kyoto Protocol are given in Table 2.

For global warming potential and emission coefficients, "Intergovernmental Panel on Climate Change (IPCC, Intergovernmental Panel on Climate Change) Climate Change - 6th Assessment Report¹" and "DEFRA - 2023 Full Set²" data were used in the study.

Table - CO₂ equivalent values of Greenhouse Gases

Greenhouse Gas Type	Global Warming Potential (100 years, CO ₂ e)
Carbon dioxide (CO ₂)	1
Methane (CH ₄)	27,9
Diazot Monoxide (N ₂ O)	273
Sulphur Hexafluoride (SF ₆)	25200
R410A	1924
HFC-236fa	8690

Global Warming Potential (GWP) is expressed in terms of carbon dioxide equivalent and is the unit used to compare the radiative forcing of a greenhouse gas with carbon dioxide. The carbon dioxide equivalent of a gas with a greenhouse effect is obtained by multiplying the gas mass by the carbon dioxide equivalent.

¹https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf

²<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>

PART III

3. EMISSION SOURCES AND ACTIVITY DATA

3.1. Base Year

Carbon footprint calculations are based on consumption data between 1 January 2023 - 31 December 2023. The base year for CF calculations of Naturel Holding was determined as 2023 and a restatement of 2022 data was made as necessary to reach comparable CF data.

3.2. Activity Data

Activity data is a quantitative measure of activity resulting in greenhouse gas emissions. The table below shows the activity data provided by Naturel Holding and its subsidiaries for each emission source. These data used are primary data (e.g. amount of natural gas used for heating or distance travelled for air transport, etc.). Activity data is prepared using updated emission coefficients according to the AR6 report published by IPCC.

Table - Operating Data of Naturel Holding and its Subsidiaries

Scope	Emission Source	Unit	Activity Data
Scope I	Management and Personnel Tools	lt.	Fuel Slips
Scope II	Company Offices Electricity Consumption	kWh	Electricity Bills
	Company Offices Heating-Cooling Electricity Consumption	kWh	Electricity Bills
	Power Plants Electricity Consumption	kWh	Electricity Bills
Scope III	Business Travel Flights	km	Flight Tickets
	Business Travel Accommodation	person*night	Hotel Invoices
Scope IV	Company Offices Water Consumption	m ³	Water Bills
	Waste from Company Offices	kg	

3.3. Emission Factors

Emission factors are calculated ratios that relate GHG emissions to a measure of activity at an emission source. Emission factors are used to convert activity data into carbon emissions.

Carbon footprint is the measurement of greenhouse gases and expression of the environmental impacts caused by all kinds of activities of individuals, institutions and organisations in terms of carbon dioxide equivalent (CO₂ e). The definition of greenhouse gases determined by the Kyoto Protocol includes carbon dioxide (CO₂), methane (CH₄), diazot monoxide (N₂ O), hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulphur hexafluoride (SF₆) gases and a common unit, carbon dioxide equivalent (CO₂ e) is used to indicate their amounts.

Table - Emission Factors

Emission Source	Emission Subcategory	Emission Factor	NKD
Moving Combustion	Diesel	74.100 kg/TJ	43.00 TJ/kt
	Gasoline	69,300 kg/TJ	44.30 TJ/kt
Electricity	Electricity	0.479 tCO ₂ e/MWh	-
Business Travel	Domestic Flights	0.27258 kg.CO ₂ e	-
	Flight International	0.17580 kg.CO ₂ e	-
	Accommodation	Turkey: 32.10 kg.CO ₂ e	-
		USA: 16.10 kg.CO ₂ e	-
Italy: 14.30 kg.CO ₂ e		-	
Wastewater	Wastewater	0.20132 kg.CO ₂ e	-
Waste	Paper	21,281 kg.CO ₂ e	-
	Plastic		-
	Glass		-
	Metal		-
WTT	Diesel	0.61101 kg.CO ₂ e	-
	Gasoline	0.58094 kg.CO ₂ e	-
	Electricity	0.00397 kg.CO ₂ e	-

3.4. Emission Amounts by Activity Data

All data arising from the activities of Naturel Holding and its subsidiaries are given in the table below. According to the data, the emission values of the company were calculated in accordance with the "Calculation Methodology" mentioned above.

Table - Emission Amounts of Naturel Holding and its Subsidiaries according to Activity Data (2023)

Emission Source	Emission Subcategory	Consumption Amount	Emission Value (tCO ₂ e)	Emission Value (tCH ₄ e)	Emission Value (tN ₂ Oe)
Moving Combustion	Diesel	448,10 litres	1,19	0,001	0,001
	Gasoline	97.469,40 lt	223,52	0,107	0,010
Electricity	Naturel YE - ATM Offices Cooling	44.996,00 kWh	9,09	0,00	0,00
	Naturel YE - ATM Offices Heating (Natural Gas)	38,593.00 kWh	7,80	0,00	0,00
	Naturel YE - ATM Offices	69.685,79 kWh	3,40	0,00	0,00
	Agah Enerji- ATM Offices	32.622,03 kWh	16,52	0,00	0,00
	Troya YE - ATM Offices	30.353,76 kWh	15,38	0,00	0,00
	Naturel YE - Saha Apartment for Rent	6.447,50 kWh	3,24	0,00	0,00
	Margun Enerji YE - Zorlu Offices Heating - Cooling	45.007,00 kWh	22,93	0,00	0,00
	Margun Enerji YE - Zorlu Offices	8.636,71 kWh	4,40	0,00	0,00
	Bosphorus YE - Çamlıbel Power Plant	78.775,32 kWh	40,02	0,00	0,00
	Bosphorus YE - Osmangazi Santral	113.786,57 kWh	57,94	0,00	0,00

Emission Source	Emission Subcategory	Consumption Amount	Emission Value (tCO ₂ e)	Emission Value (tCH ₄ e)	Emission Value (tN ₂ Oe)
	Bosphorus YE - Meram Santral	332.606,91 kWh	169,15	0,00	0,00
	Bosphorus YE - Akdeniz Power Plant	58.352,09 kWh	29,91	0,00	0,00
	Anatolia YE - Baskent Santral	51.186,77 kWh	25,93	0,00	0,00
	Margun Enerji YE - Osmangazi Santral	128.911,77 kWh	65,65	0,00	0,00
	Agah Enerji - Başkent Power Plant	301.938,68 kWh	152,94	0,00	0,00
	Troy YE - Capital Switchboard	12.418,85 kWh	6,29	0,00	0,00
	Troya YE - Osmangazi Switchboard	86.667,73 kWh	44,13	0,00	0,00
	Troy YE - Toroslar Switchboard	165.144,29 kWh	87,50	0,00	0,00
	Soleil - Ozmen SPP ADM Power Plant	119.240,10 kWh	60,30	0,00	0,00
	Business Travel	Domestic Flights	146.075,00 km	39,82	0,033
Flight International		102,265.00 km	17,98	0,001	0,088
Accommodation		Turkey: 94 people.night	3,02	0,00	0,00
		USA 5 people.night	0,08	0,00	0,00
		Italy: 3 persons.night	0,04	0,00	0,00
Wastewater	Naturel YE - ATM Offices	692,00 m ³	0,14	0,00	0,00
	Margun Enerji YE - Zorlu Offices	90,83 m ³	0,02	0,00	0,00
Waste	Naturel YE - ATM Offices Paper	504.05 kg	10,73	0,00	0,00
	Naturel YE - ATM Offices Plastic	87.98 kg	1,87	0,00	0,00
	Naturel YE - ATM Offices Glass	701.25 kg	14,92	0,00	0,00
	Naturel YE - ATM Offices Metal	79.63 kg	1,69	0,00	0,00
	Margün YE - Zorlu Offices Paper	178,92 kg	3,81	0,00	0,00
	Margun Enerji YE - Zorlu Offices Plastic	33,73 kg	0,72	0,00	0,00
	Margun Enerji YE - Zorlu Offices Glass	205,45 kg	4,37	0,00	0,00
	Margun Enerji YE - Zorlu Offices Metal	7,12 kg	0,15	0,00	0,00
	WTT	Diesel	448,10 litres	0,27	0,00
Gasoline		97.469,40 lt	56,62	0,00	0,00
Electricity All Offices		226,512.90 kWh	0,90	0,00	0,00

Emission Source	Emission Subcategory	Consumption Amount	Emission Value (tCO ₂ e)	Emission Value (tCH ₄ e)	Emission Value (tN ₂ Oe)
	Electricity All Power Plants	1.537.741,60 kWh	6,10	0,00	0,00
	Domestic Flights	146.075,00 km	2,21	0,00	0,00
	Flight International	102,265.00 km	4,89	0,00	0,00
Total Emission			1.243,06	0,141	0,295

Table - Consumption Data and Emission Amounts by Subsidiary (2023)

Scope	Subsidiary	Emission Subcategory	Consumption Amount	Emission Amount tCO ₂ e
Scope I	Naturel Enerji	Diesel	448,10 litres	1,19
		Gasoline	88.690,95 lt	203,39
		Natural Gas	38,593 kWh	7,82
	Margun Enerji	Diesel	-	-
		Gasoline	5.288,63 lt	12,13
		Natural Gas	-	-
Esenboga Elektrik	Diesel	-	-	
	Gasoline	3.489,82 lt	8,00	
	Natural Gas	-	-	
Scope II	Naturel Enerji	Electricity Office and Other	121,129.30 kWh	80,88
		Electric Power Plant	-	739,77
	Margun Enerji	Electricity Office and Other	53.643,71 kWh	27,33
		Electric Power Plant	1.449.029,08 kWh	-
	Esenboga Elektrik	Electricity Office and Other	-	-
		Electric Power Plant	-	-
Scope III	Naturel Enerji	Business Travel Flights	207,119.00 km	46,56
		Business Travel Accommodation	102 people. Night.	3,14
		Business Travel Flights	41,221.00 km	11,24
	Esenboga Elektrik	Business Travel Accommodation	-	-
		Business Travel Flights	-	-
		Business Travel Accommodation	-	-
Scope IV	Naturel Enerji	Water Consumption	692,00 m ³	0,14
		Paper Waste	504.05 kg	10,73
		Plastic Waste	87.98 kg	1,87
		Metal Waste	79.63 kg	1,69
		Glass Waste	701.25 kg	14,92
		WTT	-	65,68
	Margun Enerji	Water Consumption	90,83 m ³	0,02
		Paper Waste	178.92 kg	3,81
		Plastic Waste	33.73 kg	0,72
		Metal Waste	7.12kg	0,15
		Glass Waste	205.45 kg	4,37
		WTT	-	3,30
	Esenboga Elektrik	Water Consumption	-	-
		Paper Waste	-	-
		Plastic Waste	-	-
		Metal Waste	-	-
		Glass Waste	-	-
		WTT	-	2,03

Table - Consumption Data and tN₂Oe Emissions by Subsidiary (2023)

Scope	Subsidiary	Emission Subcategory	Consumption Amount	Emission Amount tN ₂ Oe
Scope I	Naturel Enerji	Diesel	448,10 litres	0,00006
		Gasoline	88.690,95 lt	0,009
		Natural Gas	38,593 kwh	0,00014
	Margun Enerji	Diesel	-	-
		Gasoline	5.288,63 lt	0,001
		Natural Gas	-	-
	Esenboga Elektrik	Diesel	-	-
		Gasoline	3.489,82 lt	0,0004
		Natural Gas	-	-
Scope II	Naturel Enerji	Electricity Office and Other	121,129.30 kWh	0
		Electric Power Plant	-	-
	Margun Enerji	Electricity Office and Other	53,643.71 kWh	0
		Electric Power Plant	1.449.029,08 kWh	0
	Esenboga Elektrik	Electricity Office and Other	-	-
		Electric Power Plant	-	-
Scope III	Naturel Enerji	Business Travel Flights	207,119.00 km	0,229
		Business Travel Accommodation	102 people. Night.	0
		Business Travel Flights	41,221.00 km	0,055
	Esenboga Elektrik	Business Travel Accommodation	-	-
		Business Travel Flights	-	-
		Business Travel Accommodation	-	-
Scope IV	Naturel Enerji	Water Consumption	692,00 m3	0
		Paper Waste	504.05 kg	0
		Plastic Waste	87.98 kg	0
		Metal Waste	79.63 kg	0
		Glass Waste	701.25 kg	0
		WTT	-	-
	Margun Enerji	Water Consumption	90,83 m3	0
		Paper Waste	178.92 kg	0
		Plastic Waste	33.73 kg	0
		Metal Waste	7.12kg	0
		Glass Waste	205.45 kg	0
	Esenboga Elektrik	WTT	-	-
		Water Consumption	-	-
		Paper Waste	-	-
		Plastic Waste	-	-
Esenboga Elektrik	Metal Waste	-	-	
	Glass Waste	-	-	
	WTT	-	-	
	WTT	-	-	
Total				0,295

3.5. Other Emissions

The subsidiaries not emit VOC, SO_x, PBT, PVC, from its operations.

The only hazardous emissions emitted by subsidiaries are NO_x emissions which is created as a result of mobile combustion:

Table – NO_x Emissions

Subsidiary Name	Unit	2022	2023
Naturel Enerji	Ton	1.7	1,8
Esenboga Elektrik	Ton	0	0,07
Margun Enerji	Ton	0	0,1

3.6. Environmental Consumption Data by Subsidiary (2022 & 2023)

Table – Environmental Consumption Data by Subsidiary

Subsidiary Name	Consumption Data	Unit	2022	2023
Naturel Enerji	Total direct or indirect electricity consumption	kwh	81,272.89	121,129.30
Naturel Enerji	Total direct or indirect natural gas consumption	kwh	52,073.97	38,593.00
Naturel Enerji	Direct or indirect purchased energy	kwh	133,346.86	159,129.30
Naturel Enerji	Total water consumption	m3	606	692
Naturel Enerji	Total freshwater consumption	m3	0	0
Naturel Enerji	Amount of water recycled or reused	m3	0	0
Naturel Enerji	Total amount of waste generated	ton	0.026	0.1372
Naturel Enerji	Total amount of waste generated	ton	0.026	0.1372
Naturel Enerji	Total amount of waste recycled	ton	0.026	0.1372
Naturel Enerji	Total amount of hazardous waste generated	ton	0	0
Esenboğa Elektrik	Total direct or indirect energy consumption	kwh	74.12	0
Esenboğa Elektrik	Total direct or indirect natural gas consumption	kwh	0	0
Esenboğa Elektrik	Direct or indirect purchased energy	kwh	74.12	0
Esenboğa Elektrik	Total water consumption	m3	0	0
Esenboğa Elektrik	Total freshwater consumption	m3	0	0
Esenboğa Elektrik	Amount of water recycled or reused	m3	0	0
Esenboğa Elektrik	Total amount of waste generated	ton	0.0048	0
Esenboğa Elektrik	Total amount of non- hazardous waste generated	ton	0.0048	0
Esenboğa Elektrik	Total amount of waste recycled	ton	0.0048	0
Esenboğa Elektrik	Total amount of hazardous waste generated	ton	0	0
Margün Enerji	Total direct or indirect energy consumption	kwh	1,249,487.44	1,502,672.79
Margün Enerji	Total direct or indirect natural gas consumption	kwh	10.817.05	0
Margün Enerji	Direct or indirect purchased energy	kwh	1,260,304.44	1,502,672.79
Margün Enerji	Total water consumption	m3	53.19	90.83
Margün Enerji	Total freshwater consumption	m3	0	0
Margün Enerji	Amount of water recycled or reused	m3	0	0
Margün Enerji	Total amount of waste generated	ton	0.00216	0.42522
Margün Enerji	Total amount of waste recycled	ton	0.00216	0.42522
Margün Enerji	Total amount of non- hazardous waste generated	ton	0.00216	0.42522
Margün Enerji	Total amount of hazardous waste generated	ton	0	0

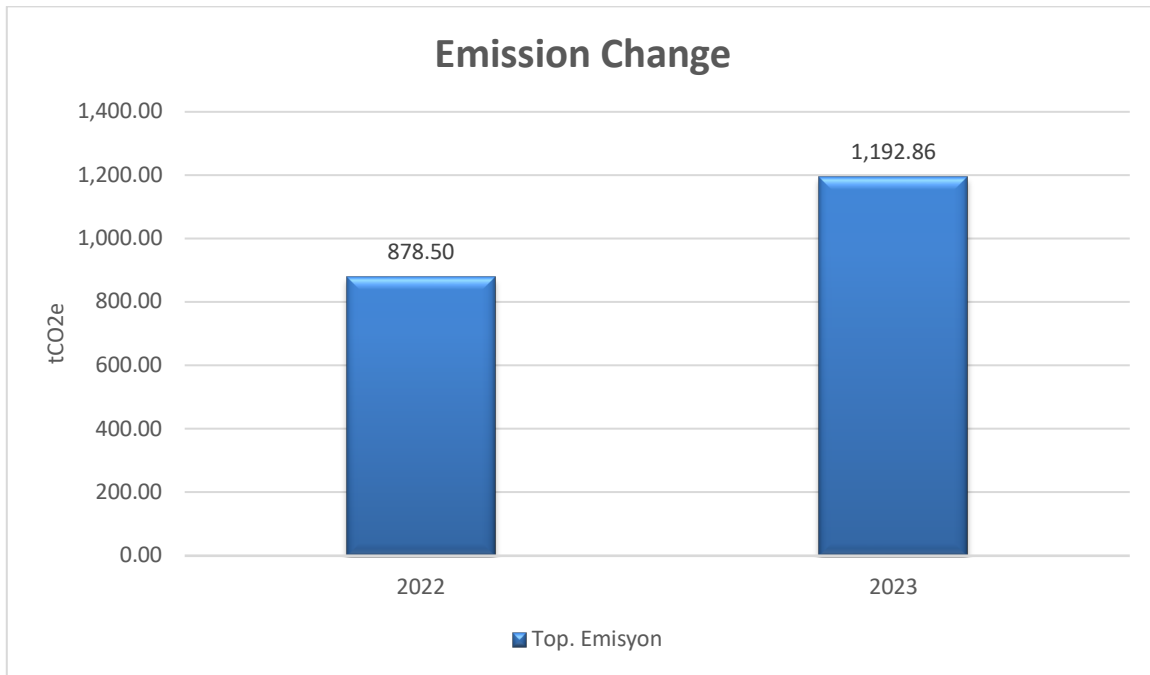
PART IV

4. NATUREL HOLDING CARBON FOOTPRINT RESULTS

4.1. Carbon Footprint Results (2022&2023)

Table - Comparison of Emission Data by Year

Year	Total Emission Amount
2022	878.50 tCO ₂ e
2023	1,192.86 tCO ₂ e

Table - Naturel Holding 2022 Total Scope Emissions (tCO₂e)

	Scope 1	Scope 2	Scope 3	Scope 4
Naturel	218,88	41,60	15,38	1,29
Esenboga	0,00	0,04	0,00	0,21
Margun Enerji	2,14	598,86	0,00	0,11

Table - Naturel Holding 2023 Total Scope Emissions (tCO₂e)

	Scope 1	Scope 2	Scope 3	Scope 4
Naturel	212,4	68,54	49,70	95,03
Esenboga	8,00	0,00	0,00	2,03
Margun Enerji	12,13	721,41	11,24	12,37

4.2. Naturel Enerji Carbon Footprint Results (2022&2023)

NATUREL ENERJİ

Table -Naturel Enerji Emission Values by Scopes in 2022 (tCO2e)

Naturel	Scope 1	Scope 2	Scope 3	Scope 4
Natural Gas	11,84			
Diesel	89,38			
Oil/Gasoline	117,66			
Electricity		41,60		
Electricity Power Plant		0		
Transport			15,38	
Waste Water				0,16
Waste				1,13
WTT				0,00
Total	218,88	41,6	15,38	1,29

Table - Naturel Enerji Emission Values by Scopes for 2023 (tCO2e)

Naturel	Scope 1	Scope 2	Scope 3	Scope 4
Natural Gas	7,82			
Diesel	1,19			
Oil/Gasoline	203,39			
Electricity		68,54		
Electricity Power Plant		0		
Transport			49,70	
Waste Water				0,14
Waste				29,22
WTT				65,68
Total	212,4	68,54	49,70	95,03

4.3. Esenboga Elektrik Carbon Footprint Results (2022&2023)

ESENBOGA ELEKTRİK

Table- Esenboğa Elektrik 2022 Emission Values by Scopes (tCO2e)

Esenboga	Scope 1	Scope 2	Scope 3	Scope 4
Oil/Gasoline	0,00			
Electricity		0,04		
Waste				0,21
WTT				0,00
Total		0,04		0,21

Table - Esenboğa Elektrik 2023 Emission Values by Scopes (tCO2e)

Esenboga	Scope 1	Scope 2	Scope 3	Scope 4
Oil/Gasoline	8,00			
Electricity		0,00		
Waste				0,00
WTT				2,03
Total	8,00			2,03

4.4. Margun Enerji Carbon Footprint Results (2022&2023)

MARGÜN ENERJİ

Table 2. Margün Enerji Emission Values by Scopes in 2022 (tCO2e)

Margun Enerji	Scope 1	Scope 2	Scope 3	Scope 4
Natural Gas	2,14			
Oil/Gasoline	0,00			
Electricity		598,86		
Transport			0,00	
Waste Water				0,01
Waste				0,09
WTT				0,00
Total	2,14	598,86		0,10

Table 3. Margün Enerji 2023 Emission Values by Scopes (tCO2e)

Margun Enerji	Scope 1	Scope 2	Scope 3	Scope 4
Natural Gas	0,00			
Oil/Gasoline	12,13			
Electricity		721,41		
Transport			11,24	
Waste Water				0,02
Waste				9,05
WTT				3,30
Total	12,13	721,41	11,24	12,37

PART V**5. EKONORM OPINION**

This carbon footprint study of Ekonorm provides a third party assessment of the quality and reliability of the carbon footprint data of Naturel Holding and its subsidiaries for the reporting period 1 January 2023 - 31 December 2023. This study does not represent an independent third party assurance.

Ekonorm has been commissioned to calculate the carbon footprint of Naturel Holding and its subsidiaries. Through this study, Ekonorm guarantees that the reported carbon footprint accurately represents the subsidiaries' emissions and that the data presented is reliable and in line with appropriate standards and industry practices. The data has been collected and calculated in line with the WRI GHG Protocol's principles of relevance, integrity, consistency, transparency and accuracy.

Ekonorm's work includes interviews with relevant subsidiary personnel, review of internal and external documents, and questioning of source data and data collection mechanisms, including comparison with other case studies.

Relevance: The greenhouse gas inventory appropriately reflects the greenhouse gas emissions arising from the activities of Naturel Holding and its subsidiaries. This inventory serves the decision-making processes of internal and external users.

Integrity Naturel Holding and its subsidiaries use an operational control approach to determine their corporate boundaries. The subsidiary has reported on all scopes, direct emissions and energy indirect emissions except Scope 5. The reported data covers all employees and all subsidiaries subject to the control of the reporting entity.

Consistency: The inventory allows meaningful comparison of GHG information. Harmonised methodologies have been used that allow comparisons of calculated emission values over time. Any revisions or improvements to the methodology used and the impact of such changes are clearly indicated in this report.

Accuracy: Greenhouse gas emission measurements are not systematically above or below the actual amounts; consistency and accuracy of the reported content allow users to make judgements without hesitation.

Transparency: All relevant assumptions are disclosed and references to appropriate calculation methods, examples and data sources used are included in the report.

Inventory Verification of reports, although not mandatory, by third parties is strongly recommended for the establishment of inventory principles.

Naturel Holding and its subsidiaries can continue to carry out various technical optimisations in existing buildings and power plants to minimise electricity consumption and energy waste.

These optimisations may include:

- Regulation and distribution of heating and cooling systems (adapting consumption to demand in real time),
- Carrying out studies for heat recovery,
- Ventilation systems management,
- Targeting 'carbon neutrality' for electricity used in companies and purchasing 100% renewable energy (hydroelectricity, biomass and wind) from the electricity supplier,
- Continuing emission measurement, recording and monitoring activities periodically.
- Naturel Holding can expand the data sets created for emission calculations. In this way, more verifiable emission values can be calculated in 2024 and beyond.
- The biggest emission source of Naturel Holding is the electricity consumed. Some measures can be taken for the heating and cooling consumption of Naturel ATM offices.
- Another source of electricity consumption is power plant-based consumption. Carbon neutrality can be targeted for these sources.
- Lastly, flight-related data on business travelling has a significant share in emission emissions. Conducting meetings online and travelling by road with hybrid or electric vehicles instead of aircraft will reduce the emission source.

PART VI

6. SOURCES

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2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 7 https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/3_Volume3/V3_7_Ch7_ODS_Substitutes.pdf

IPCC, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories

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TS EN ISO 14064-1: 2006 (Formerly: TS ISO 14064-1): Greenhouse gases - Part 1: Guidelines and specifications for the calculation and reporting of greenhouse gas emissions and removals at organisation level

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IPCC Climate Change-6th Assessment Report (2023), www.climatechange2013.org/images/report/WG1AR6_ALL_FINAL.pdf , page 731, Appendix 8.A / Table 8.A

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6.1 Emission Factor Data Sources

EF	EF Value (kgCO ₂ e)	NKD	Data Source
Natural Gas	56100	48000	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
Diesel Fuel	74100	43000	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
Motor Gasoline	96300	44300	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
CO ₂	1		https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf
CH ₄	27,9		https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf
N ₂ O	273		https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf
SF ₆	25200		https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf
CFC-12/R12	10200		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
R600A	3		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
HFC-236fa	8690		https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf
R410A	1924		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Electricity	0,484		https://enerji.gov.tr/evced-cevre-ve-iklim-elektrik-uretim-tuketim-emisyon-faktorleri
Electricity Leakage Rates			https://www.epdk.gov.tr/Detay/Icerik/3-0-24/elektrikyillik-sektor-raporu
Transport Domestic, to/from TR	0,27257		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
International, to/from non-TR	0,17850		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Rail	0,03546		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Passenger vehicles	0,20858		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Container ship	0,01612		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
RoRo-Ferry	0,05158		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
HGV (all diesel)	0,82313		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Freight train	0,02779		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Intermodal	0,27454		https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023

Freight flights	1,09903			https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Road/train	0,10299			https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Hotel Stay	-			https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023
Wastewater	0,068			https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5_Volume5/19R_V5_6_Ch06_Wastewater.pdf
Hazardous waste	N/A			https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/5_Volume5/V5_2_Ch2_Waste_Data.pdf
Paper, Plastic, Metal and Glass Waste	21,281			https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf

6.2 Unit Translation Table

1	m3	10,64	kwh
botas intensity3	m3	0,78	kg/m3
diesel density		833,00	kg/m3
petrol density		747,00	kg/m3

		Symbol	Number	Standard form
Abbreviation	Weight	k	1.000	10 ³
	Mega	M	1.000.000	10 ⁶
	Giga	G	1.000.000.000	10 ⁹
	Tera	T	1.000.000.000.000	10 ¹²
	Peta	P	1.000.000.000.000.000	10 ¹⁵

		GJ	kWh	therm	toe	kcal
Energy	Gigajoule, GJ		277,78	9,47817	0,02388	238.903
	Kilowatt-hour, kWh	0,0036		0,03412	0,00009	860,05
	Therm	0,10551	29,307		0,00252	25.206
	Tonne oil equivalent, toe	41,868	11.630	396,83		10.002.389
	Kilocalorie, kcal	0,000004186	0,0011627	0,000039674	0,000000100	

		L	m ³	cu ft	Imp. gallon	US gallon	Bbl (US,P)
Volume	Litres, L		0,001	0,03531	0,21997	0,26417	0,0062898
	Cubic metres, m ³	1000		35,315	219,97	264,17	6,2898
	Cubic feet, cu ft	28,317	0,02832		6,2288	7,48052	0,17811
	Imperial gallon	4,5461	0,00455	0,16054		1,20095	0,028594
	US gallon	3,7854	0,0037854	0,13368	0,83267		0,023810
	Barrel (US, petroleum), bbl	158,99	0,15899	5,6146	34,972	42	

		kg	tonne	tonnes (UK)	tonnes (US)	lb
Weight/mass	Kilogram, kg		0,001	0,00098	0,00110	2,20462
	tonne, t (metric tonnes)	1000		0,98421	1,10231	2204,62368
	tonne (UK, long tonne)	1016,04642	1,01605		1,12000	2240
	tonnes (US, short tonnes)	907,18	0,90718	0,89286		2000
	Pound, lb	0,45359	0,00045359	0,00044643	0,00050	

³ <https://www.botas.gov.tr/uploads/dosyaYoneticisi/12864-botas-sozluk-2-agustos.pdf>

		m	ft	mi	km	nmi
Length / distance	Metre, m		3,2808	0,00062137	0,001	0,00053996
	Feet, ft	0,30480		0,000	0,0003048	0,00016458
	Miles, mi	1609,34	5280		1,60934	0,86898
	Kilometres, km	1000	3280,8	0,62137		0,53996
	Nautical miles, nmi or NM	1852	6076,1	1,15078	1,852	

		m	ft	in	cm	yd
Length / distance	Metre, m		3,28084	39,37008	100	1,09361
	Feet, ft	0,30480		12	30,48000	0,33333
	Inch, in	0,02540	0,08333		2,54000	0,02778
	Centimetres, cm	0,01	0,03281	0,39370		0,01094
	Yard, yd	0,91440	3	36	91,44000	