Polisan HOLDİNG

2023 CORPORATE CARBON FOOTPRINT SUMMARY REPORT

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The greenhouse gas emissions of the four subsidiaries, which account for 95% of Polisan Holding's combined revenues, have been calculated using the financial control method in accordance with the ISO 14064-1 standard and the GHG Protocol and have been verified by an accredited body as per ISO 14064-3.

Polisan Holding has 100% financial control over its subsidiaries Polipot Kimya, Polisan Kimya, and Polisan Yapıkim, and 50% financial control over its subsidiary Polisan Kansai Boya.

The total carbon footprint of Polisan Holding is:

271,671

tCO2e

Assurance Level: Reasonable assurance

Carbon Footprint by Company (tCO2e)

Company	Scope 1	Scope 2	Scope 3	Total
Polisan HOLDİNG	248	92	464	**803**
Polisan KİMYA	6,408	1,952	96,662	**105,022**
Polisan YAPIKİM	240	56	54,255	**54,551**
Poliport	3,087	699	3,476	**7,262**
Polisan HOME COSMETICS	896	300	102,836	**104,032**

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GHG Emission Categories

Scopes and Categories	Emissions, tCO2e	Emission Percentage, %
Operational Emissions		
Scope 1: Direct emissions from owned or controlled operations	10,879	4.0
Emissions from Purchased Energy Sources		
Category 2: Indirect emissions from purchased energy activities (Market-Based)	3,099	1.1
Category 2: Indirect emissions from purchased energy activities (Location-Based)	10,330	3.7
Other Indirect Emissions		
Category 3.1: Purchased Goods and Services	229,378	84.4
Category 3.2: Capital Goods	3,808	1.4
Category 3.3: Fuel- and Energy-Related Activities (Not Included in Scope 1 and 2)	1,107	0.4
Category 3.4: Upstream Transportation and Distribution	7,912	2.9
Category 3.5: Waste Generated in Operations	181	0.1
Category 3.6: Business Travel	188	0.1
Category 3.7: Employee Commuting	1,212	0.4
Category 3.9: Downstream Transportation and Distribution	13,650	5
Category 3.12: End-of-Life Treatment of Sold Products	42	0
Other (Downstream)*	218	0.1

*Other (Downstream): Emissions from customer visits and postal deliveries.

Emission Intensity (kg CO2e / ton product handling)*

Polisan KİMYA	Polisan YAPIKİM	Poliport	Polisan HOME COSMETICS
61.58	**2.73**	**1.18**	**11.83**

*Emissions from operations and purchased energy are included.

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Excluded Activities and Reasons

Category 3.8: Pre-production leased assets are included in Scope 1 emissions due to emissions arising from leased vehicles.
Category 3.10: Transactions of sold products are excluded because the products are sold ready for direct use,
Category 3.11: Transactions of sold products are excluded because the products are sold ready for direct use,
Category 3.13: Post-production leased assets are excluded due to the absence of leasing after production,
Category 3.14: Dealers are excluded due to insufficient data collection infrastructure,
Category 3.15: Investments (Financial) have been excluded from calculations due to the absence of any investments included in this category as defined by the Greenhouse Gas Protocol,

Greenhouse Gas Emission Subcategories

CH4 32.49 tons
N2O 44.28 tons
HFCs 0.02 tons

There are no emissions of PFCs and SF6 within the categories.
*Environmentally friendly air-insulated switchgear is used in our facilities.

Methodologies Used in the Calculation and Measurement of Emissions

Consumption related to Scope 1 is recorded using invoices, system data, and meter readings. Emission calculations are performed using IPCC AR6 coefficients.

Consumption of externally sourced electricity related to Scope 2 is recorded using invoices, system data, and meter readings. Emission calculations are performed using IPCC AR6 coefficients. In the market-based electricity calculation, the amount of IREC-certified renewable energy usage is taken into account.

There are no losses or leaks in the electricity supplied to our facility from the Organized Industrial Zone. However, it is assumed that there is a loss of between 3% and 7% due to internal distribution through transformers within our facility. On average, an annual electricity loss of 5% is assumed.

Methodologies Used in the Calculation and Measurement of Emissions

Raw Material Transportation Data: This data is obtained through the purchasing department. The distance from the production site of the relevant raw material to the delivery point, along with transfer methods and weight data, is used to perform calculations using DEFRA 2023 emission factors.

Product Shipment: Data on the distance traveled and the quantity of products shipped for each trip made throughout the year is obtained from the logistics department. Calculations are conducted using DEFRA 2023 emission factors.

Energy Losses: This includes transmission and distribution losses incurred in delivering the supplied electricity from the power plant to our facilities. The total amount of electricity supplied (kWh) is used to calculate emissions resulting from electricity transmission and distribution losses, applying DEFRA 2023 emission factors.

Employee Transportation: Fuel consumption data from the service provider used by the Administrative Affairs department throughout the year is obtained. Emission calculations are performed using DEFRA 2023 emission factors.

Customer/Visitor Transportation: Data on transportation of customers/visitors to our facilities throughout the year is collected from the visitor registration book. Based on this data, the average distance between the facilities visited is calculated, and emissions are determined using DEFRA 2023 emission factors.

Business Travel: Greenhouse gas emissions calculations are performed using information extracted from the Polisan ERP system for all business trips undertaken throughout the year, applying DEFRA 2023 emission factors.

Hotel Accommodations: Greenhouse gas emissions calculations are conducted using information extracted from the Polisan ERP system for all hotel accommodations throughout the year, applying DEFRA 2023 emission factors.

Raw Material Data: This data is obtained through the purchasing department. Emission calculations are performed according to the databases available in SimaPro.

Waste: Data on waste generated from activities is obtained from the relevant departments of companies. Waste is categorized, and greenhouse gas calculations are performed using DEFRA 2023 emission factors.

Municipal Water Consumption: The amount of water taken from the municipal supply for domestic use (m^3) is calculated by multiplying it by DEFRA 2023 emission factors.

Risks and Opportunities Related to Climate Change

Cost Increase (Capital) / Impact Severity: High - Medium Term

In our processes, we use seawater for cooling. Depending on the temperature of the water drawn from the sea, it may be used directly or may require cooling. Due to global warming, average sea temperatures are increasing over time. If the seawater is above the required temperature for cooling, cooling the water necessitates additional energy consumption, which increases our carbon emissions.

When the seawater temperature increases by 0.2 °C, we will require an additional 850 kWh of chiller cooling for the cooling process. With a cooling requirement of 4 hours per day, this will result in an annual additional energy cost of 680,000 kWh. If the average electricity cost is 3.80 TL, this risk will impose a financial burden of approximately 2.6 million TL.

To mitigate the impact of potential changes in water temperature and to draw cooler water, we have lowered our existing seawater pumps, which are located near the surface, to deeper water levels, thereby reducing the temperature of our cooling water. The approximate cost of the project was 29 million TL.

Revenue Decrease (Downstream) / Impact Severity: Medium

In the chemical industry, the growing environmental awareness is leading to significant changes in customer behavior. Customers are increasingly seeking environmentally friendly alternatives, resulting in a rise in demand for bio-based and low-carbon products. If Polisan fails to respond to the demand for sustainable products and services, it may face a decline in market share and profitability. Additionally, regulatory regulations and changing environmental standards can pose legal and operational challenges. Changes in product types may lead to additional costs associated with the development of new processes.

In line with decreasing demand, there will be a reduction in revenues. Sales data indicates that 10-15% of our customers show interest in environmentally friendly products. In particular, legal regulations in the European market significantly restrict potential markets. Our potential risk ranges from a minimum of 560 million TL to a maximum of 840 million TL.

We are striving to produce products that meet changing customer demands through R&D efforts. In 2023, we invested 71.5 million TL in R&D. Over the last three years, the share of new products in total revenue at Polisan Kimya is 5%, while at Polisan Yapıkim, it is 18%.

This year, the share of our low-emission resin products, which are compliant with the volatile organic compound (VOC) content and formaldehyde emission limits developed by the California Air Resources Board (CARB), accounts for 2.5% of total production and 3% of revenue. The share of E1 Class and lower low-emission resins in total resin production is 22%, while their share in total resin sales revenue is 27%.

Risks and Opportunities Related to Climate Change

Cost Increase (Indirect Operations) / Impact Severity: Low - Medium Term
At COP21 in Paris, Turkey became a party to the Paris Agreement and submitted its Intended Nationally Determined Contributions (INDC) plan to the UN Secretariat, setting a target to reduce emissions by 21% by 2030. The method for greenhouse gas reduction has not yet been determined. While the method is in progress, it is anticipated that it will involve the Carbon Border Adjustment Mechanism (CBAM). In this context, it has been concluded that taxes will be imposed on Scope 1 and Scope 2 emissions of organizations.

The Scope 1 emissions for Polisan Kimya and Yapıkim amount to 6,648 tons of CO2e, with the current carbon price in the EU ETS being approximately €75. Polisan Kimya and Yapıkim have an export rate of 30%. In a scenario where all Scope 1 emissions are subject to taxation, our potential financial risk amounts to €149,580. It is estimated that the maximum carbon tax in the coming years will be €200. Our medium-term risk has been calculated to have a maximum financial liability of €398,880.

Cost Increase (Indirect Operations) / Impact Severity: Medium-High
As we operate in the chemical sector and store liquid chemical materials in tanks, there is a potential risk of leakage in the event of tank damage. Significant damages that could result from tank breaches are assessed as a high risk.

We continuously renew our tank measurement equipment as needed, thereby enhancing the measurement accuracy for each tank. This enables us to manage our inventory more effectively and ensures the reliability of our operations. To increase our passive operational safety, we actively maintain 25 flame detectors and 89 gas detectors on our site.

We manage our inventory in tank farms using a tank gauging system. Our tank gauging systems allow us to monitor real-time data such as tank level, temperature, pressure, density, and volume. All of our tanks (a total of 178) are equipped with tank gauging systems.

Additionally, we are preparing to implement an acoustic sensor application to monitor the movements of PV (Pressure/Vacuum) valves and ensure effective tank internal pressure control. This application is intended to provide emergency intervention capabilities in case the valve remains open and will be integrated into our automation system to increase nitrogen padding, thereby maintaining product quality and controlling emissions.

Risks and Opportunities Related to Climate Change

Cost Increase (Direct Operations) / Impact Severity: Medium-High

Any adverse environmental and/or social impact can pose reputational risks to Polisan Holding and may lead to a decrease in the market value of Polisan Holding. Adverse environmental and social impacts may include accidents, fires, and disruptions.

If a reputational risk materializes, it will result in a negative financial impact. Assuming that the adverse effect arises from a situation with minor and/or localized impact, it is anticipated that the negative financial effect could amount to 1% of equity. Conversely, if the adverse effect arises from a situation with significant and/or global impact, it is expected that the negative financial effect could reach 3% of equity.

Cost Increase (Indirect Operations) / Impact Severity: High - Medium Term

The effects of global warming have led to an increase in extreme weather events in Turkey, such as droughts, storms, and typhoons. Due to their geographical locations, the areas in which we operate are at high risk for heatwaves. Our factory, located near the Sea of Marmara, is vulnerable to extreme weather events. According to NASA data, rising sea levels due to climate change could significantly affect our region. We are investigating rising sea levels and coastal flood threats using the Coastal Risk Screening Tool. This situation may pose a flood risk to our port roads, highways, and facility. Flood events could negatively impact our raw material and product shipments, as well as our production, potentially leading to operational disruptions lasting between 2 to 4 weeks.

As a precaution against risk, fire management systems have been developed to both prevent fires and mitigate their effects. Additionally, the company's properties are insured against risks. The company's assets may be exposed to extreme weather events or fire incidents. In such events, it can be assumed that up to 20% of the company's properties may be damaged. In 2023, we made an additional investment of 5 million TL in fire safety, bringing our total fire safety investment over the last 9 years to 225 million TL.

We have taken precautionary measures and invested in security expenditures to manage water and reduce flood risks. By proactively addressing potential risks, we have made an operational expenditure and investment of 114 million TL to ensure the safety and continuity of our operations.

In the event of a potential flood, there is a risk of operational downtime. Our revenue for 2023 is 6,503 million TL, and the duration of downtime is proportional to our annual revenue. The potential risk from possible downtime is calculated based on a minimum closure period of 2 weeks and a maximum of 4 weeks, resulting in a potential risk ranging from 208 million TL to 415 million TL.