PÖPPELMANN

Information on the Corporate Carbon Footprint 2024

ZUKUNFT. MACHEN. WIR.

Information on the Corporate Carbon Footprint 2024

(contains data for 2023)

In accordance with DIN EN ISO 14064-1:2018 and Greenhouse Gas Protocol for the sites of the Pöppelmann Company Group:

Plant 1

Pöppelmann GmbH & Co. KG Kunststoffwerk-Werkzeugbau
Bakumer Straße 73, 49393 Lohne
Germany

Plant 2

Pöppelmann Kunststoff-Technik GmbH & Co. KG
Hermann-Staudinger-Straße 1, 49393 Lohne
Germany

Plant 3

Pöppelmann GmbH & Co. KG Kunststoffwerk-Werkzeugbau
Pöppelmannstraße 5, 49393 Lohne
Germany

Plant CP

Pöppelmann GmbH & Co. KG Kunststoffwerk-Werkzeugbau
Feldkamp 3 + Industriestraße 25, 49451 Holdorf
Germany

Plant France

Plastiques Pöppelmann France S.A.S
3 Rue Robert Schuman, 68170 Rixheim
France

Plant USA

Pöppelmann Plastics USA LLC
2180 Heart Drive, Claremont, NC 28610
United States of America

Other subsidiaries and sales offices

The GHG emission of the offices in China, Spain, Scandinavia, the Czech Republic and the UK are not included in this information as they are below the materiality level for accounting.

Preface

This report provides an overview of Pöppelmann's Greenhouse Gas emissions of our sites in Germany, France and the USA in the period from January 1 to December 31, 2023. Besides the verified greenhouse gas report for the sites in Germany, this report serves as additional information that provides an insight into the company's climate impact.

As a family business - founded in Lohne in 1949 - Pöppelmann creates added value for customers in over 90 countries. There are expert teams for innovative plastics concepts in the global markets of the automotive, medical technology, food, cosmetics and pharmaceutical industries as well as horticulture.

The wishes and requirements of our customers are at the center of everything we do. In order to fulfill our requirements and those of our customers, our management system is certified extensively, and our corporate strategy has been consistently geared towards sustainability for years.

In addition to our established environmental and energy management system, the company wide PÖPPELMANN blue® initiative has bundled all activities relating to resource conservation and climate protection since 2018. As part of this, the Greenhouse Gas balance (the Corporate Carbon Footprint) was calculated for the first time for the 2021 reporting year.

In 2022, the company was accepted into the association Klimaschutz-Unternehmen e.V. and developed climate targets that have been validated by SBTi since October 2023. The climate targets for the entire Pöppelmann Group are as follows

- We are committed to reducing our absolute Scope 1 and 2 emissions by 50 % by 2030 compared to 2021.
- We are committed to reducing our absolute Scope 3 emissions by 25 % by 2030 compared to 2021.

With this information, in addition to our annual environmental statement and in accordance with the guidelines of the Science Based Targets Initiative (SBTi), we want to report openly every year on our Greenhouse Gas emissions and our climate protection activities. The information is aimed at customers, suppliers, employees, neighbors and the public.

Content

Imprint

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Lohne, November 20, 2024

Information about the company and the Greenhouse Gas report

Pöppelmann has grown steadily since it was founded in 1949: from 50 m² when it was founded, to 9145 m² in 1974 - to its current size with customers from over 90 countries. We now produce at seven locations worldwide. Our success is guaranteed by our qualified Pöppelmann employees. With 2500 employees worldwide, Pöppelmann is today one of the leading companies in the plastics processing industry in Europe.

In the four divisions KAPSTO, TEKU, K-TECH and FAMAC, we develop and produce plastic protective elements, planting and cultivation systems for commercial horticulture, technical injection molded parts for the automotive and electrical industries as well as for mechanical and equipment engineering and technical functional parts and packaging for the food, pharmaceutical and cosmetics industries as well as for medical technology.

In addition, we develop, digitally design, and manufacture high-quality molds for the injection molding and thermoforming process in our mold-technology center. It also carries out the maintenance and repair of the molds.

Information on the report

reporting company, organizational boundaries	Pöppelmann company group with the sites in Lohne, Holdorf, Rixheim and Claremont	
Company description	NACE-Code: Scope of application:	22.2 Manufacture of plastic products Engineering, manufacture, and distribution of plastic products
Site data	Plant 1	Plant site size: 240688 m² Employees: 978 Persons Production halls and warehouses: 17
	Plant 2	Plant site size: 179986 m² Employees: 832 Persons Production halls and warehouses: 9
	Plant 3	Plant site size: 84949 m² Employees: 398 Persons Production halls and warehouses: 3
	Plant CP	Plant site size: 45188 m² Employees: 12 Persons Production halls and warehouses: 3
	Plant France	Plant site size: 14750 m² Employees: 111 Persons Production halls and warehouses: 3
	Plant USA	Plant site size: 32515 m² Employees: 152 Persons Production halls and warehouses: 3
Selected consolidation approach	The GHG emissions over which Pöppelmann has operational control are reported.	
Declaration of conformity with the balancing standard	The GHG emissions are calculated in accordance with the DIN EN ISO 14064-1:2018	
Base year	2021	
Reporting year	01.01.2023 – 31.12.2023	

Reporting boundaries and criteria for determining significant emissions

The report covers the main greenhouse gas emissions of the Pöppelmann organization for the sites in Germany, France, and the USA. The main categories for greenhouse gas emissions were determined using the following criteria:

Significance, relevance for the company, legal requirements/binding obligations, relevance to the public/view of interested parties, effort involved in data collection, data quality, possibility of influence by the company.

Significant categories

ISO 14064-1	GHG-Protocol	category/ scope
1	**1**	**Scope 1: direct GHG emissions**
1.1	1	Direct emissions from stationary combustion
1.2	1	Direct emissions from mobile combustion
1.4	1	Direct fugitive emissions arise from the release of Greenhouse Gases in anthropogenic systems
2	**2**	**Scope 2: Indirect GHG emissions from imported energy**
2.1	2	Indirect emissions from imported electricity
	3	**Scope 3: Indirect GHG emissions from transport, products used by the organization, in connection with the use of the organization's products, from other sources**
4 (4.1+4.5)	3.1	Purchased Goods and Services
4.2	3.2	Capital Goods
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2
3.1	3.4	Upstream Transport and Distribution
4.3	3.5	Waste generated in operations
3.5	3.6	Business Travel
3.3	3.7	Employee Commuting
3.2	3.9	Downstream Transportation and Distribution
5.3	3.12	End-of-Life Treatment of Sold Products

Excluded and non-significant categories

ISO 14064-1	GHG-Protocol	category/ Scope	Reasons for exclusion
1.3	1	Direct emissions from processes arising from industrial processes	Not applicable
1.5	1	Direct emissions and removals from Land Use, Land Use Change and Forestry	Not applicable
2.2	2	Indirect emissions from imported energy	Not applicable
4.4	3.8	Upstream Leased Assets	Not applicable
	3.10	Processing of Sold Products	Not relevant; no provision of semi-finished products.
5.1	3.11	Use of sold products	KAPSTO, TEKU, FAMAC – emissions are allocated to the product to be protected K-TECH – only indirect influence on resulting emissions
5.2	3.13	Downstream Leased Assets	Not applicable
	3.14	Franchises	Not applicable
5.4	3.15	Investments	Not relevant; first evaluation in base year: < 1 % of Scope 3 emissions

Greenhouse Gas Balance

Greenhouse Gas Balance of the sites covered

The Greenhouse Gas emissions are accounted for in accordance with the categorization of ISO 14064-1:2018 or within the scopes defined by the Greenhouse Gas Protocol.

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**321135**	**283103**	**234063**	**-17%**
1	**1**	**Scope 1: Direct GHG emissions**	**3035**	**2308**	**2243**	**-3%**
1.1	1	Direct emissions from stationary combustion	2013	1485	1472	-1%
1.2	1	Direct emissions from mobile combustion	866	767	706	-8%
1.4	1	Direct fugitive emissions arise from the release of Greenhouse Gases in anthropogenic systems	155	56	65	15%
2	**2**	**Scope 2: Indirect GHG emissions**	**23694**	**26108**	**18581**	**-29%**
2.1	2	Indirect emissions from imported electricity	23694	26108	18581	-29%
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**294406**	**254687**	**213239**	**-16%**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	145152	134582	106773	-21%
4.2	3.2	Capital Goods	1665	14908	20537	38%
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	7745	7972	4411	-45%
3.1	3.4	Upstream Transportation and Distribution	11457	10392	7857	-24%
4.3	3.5	Waste Generated in Operations	3444	1333	3091	132%
3.5	3.6	Business Travel	156	232	664	187%
3.3	3.7	Employee Commuting	5337	1882	1941	3%
3.2	3.9	Downstream Transportation and Distribution	5014	5987	5198	-13%
5.3	3.12	End-of-Life Treatment of Sold Products	114436	77399	62767	-19%

*Change in the reporting year compared to the previous year

Balance sheets of the sites Plant 1, Plant 2, Plant 3, Plant CP, Plant France and Plant USA in appendix

GHG emissions in Scope 1 und Scope 2

Breakdown of emissions into greenhouse gases in accordance with the Kyoto Protocol

GHG	GWP100	Scope 1	Scope 2	Sum
CO_2	1	2052 t	18018 t	20069 t
CH_4	27	0,094 t	16,48 t	16,57 t
N_2O	273	0,036 t	0,385 t	0,421 t
HFC	div.	0,036 t	0 t	0,036 t
PFC	≤ 17340	0 t	0 t	0 t
SF_6	25184	0 t	0 t	0 t
CO_2e		**2128 t**	**18581 t**	**20709 t**

CH_4, N_2O and HFC emissions were converted in CO_2-equivalents, using the Global Warming Potential for the 100-year time horizon (GWP100). The GWP100 emission factors are taken from the IPCC's Sixth Assessment Report. This overview only includes direct emissions from energy generation that occur on our premises (Scope 1 incl. refrigerant losses) or those of energy suppliers (Scope 2). The GHG emissions resulting from this are determined using publications that allow the emissions to be broken down into the relevant greenhouse gases.

Local-based Scope 2 emissions

In principle, Scope 2 emissions are calculated using the market-based approach. In comparison with the local-based approach, electricity consumption at Pöppelmann would cause 34468 tCO_2e globally, based on the local electricity mixes of the countries/grids concerned.

Reasons for changes and deviations

ISO 14064-1	GHG-Protocol	Category/ Scope	relative change *	
		Total emissions	**-17 %**	
1	**1**	**Scope 1: Direct GHG emissions**	**-3 %**	
1.1	1	Direct emissions from stationary combustion	-1 %	No significant change
1.2	1	Direct emissions from mobile combustion	-8 %	Reduced fuel consumption
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	15 %	Maintenance of several refrigeration systems resulted in increased refrigerant refill quantities
2	**2**	**Scope 2: Indirect GHG emissions**	**-29 %**	
2.1	2	Indirect emissions from imported electricity	-29 %	Procurement of electricity from regional wind farms for PP Germany, procurement of 100% green electricity for PP France; reduced energy consumption in general
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**-16 %**	
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	-21 %	Reduced consumption of the main raw material (plastic granulate), due to the general economic development
4.2	3.2	Capital Goods	38 %	Increased investment volume because of the construction of new buildings
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	-45 %	Procurement of electricity from regional wind farms, reduced energy consumption
3.1	3.4	Upstream Transportation and Distribution	-24 %	Reduced procurement volume, reduced transportation capacity
4.3	3.5	Waste Generated in Operations	132 %	Better availability of emission factors, small increase in waste volumes
3.5	3.6	Business Travel	187 %	Increased travel activity, including intercontinental air travel
3.3	3.7	Employee Commuting	3 %	No significant change
3.2	3.9	Downstream Transportation and Distribution	-13 %	reduced transportation capacity due to reduced output
5.3	3.12	End-of-Life Treatment of Sold Products	-19 %	Decreased output due to general economic development

*Change in the reporting year compared to the previous year

Methodology

Accounting and Calculations

Category acc. to ISO 14064-1/ GHG Protocol		Assessment of the life cycle inventory and calculation methodology
1.1 **Direct emissions from stationary combustion**	1	Balancing of consumption quantities of natural gas, and procurement quantities of propane gas and diesel. Site-related quantity recording by means of measurements by gas meters or based on purchase receipts. The calculation of GHG emissions is energy quantity and volume based.
1.2 **Direct emissions from mobile combustion**	1	Balancing the refueling volumes for the fuels: diesel and gasoline The calculation of GHG emissions is volume based.
1.4 **Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems**	1	Weight based balancing of losses in refrigeration systems based on refill quantities according to the air conditioning service providers. The emission factors for refrigerants are selected in accordance with the IPCC Sixth Assessment Report, which specifies the refrigerant-specific effects.
2.1 **Indirect emissions from imported electricity**	2	Balancing of the energy purchased based on metered billing by energy suppliers and on the basis of devaluation certificates. The calculation of GHG emissions is based on energy quantities.
4.1 & 4.5 **Purchased Goods and Services**	3.1	To determine the data, purchase quantities of goods in the subcategories of raw materials, masterbatches/additives, purchased production parts, packaging, metals, operating fluids, office supplies, IT hardware and fresh water are evaluated. The quantity of services procured is determined by evaluating the order volume in the reporting year. GHG emissions are calculated separately within the subcategories. Primary data on the physically procured quantity is available for all purchased goods. Emission factors from the sources listed below are used to calculate GHG emissions if no primary data is available from the manufacturers. For procured services, the expenditure-based calculation of the resulting GHG emissions is carried out.
4.2 **Capital Goods**	3.2	For the capital goods procured in the reporting year, the procurement volume within the investment categories of *general*, *machinery*, *equipment*, *buildings*, *vehicle fleet* and *molds* is evaluated to determine the data. If no primary data is available, the expenditure-based approach is used for GHG accounting. Emission factors for different types of capital goods are taken from the sources and publications listed below, which enable comparisons and substantiated assumptions.
6 **Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2**	3.3	The quantity of energy procured to be assessed is identical to the quantities considered in Scope 1 & 2. The indirect shares (including auxiliary energy) of the energy source-specific emission factors are used to calculate GHG emissions.
3.1 **Upstream Transportation and Distribution**	3.4	Consideration of transport performance from incoming goods transports and outgoing goods transports for which Pöppelmann is responsible. In line with the flow of goods in the product portfolio, emissions from the distribution of goods do not contribute to the GHG emissions within the category. The analysis of purchase order positions is used to determine the data for incoming goods transportation. Point estimates are sometimes used to determine transport data for non-inventory-managed material; transports of inventory-managed material can be calculated. The transportation performance of outgoing goods transports is calculated by evaluating the freight data. The delimitation of cost responsibility is carried out using Incoterms. The calculation of GHG emissions is based on the assumption of representative means of transport for procured goods categories and transport service providers. For the calculation based on transport performance (well-to-wheel), the type of means of transport and its capacity utilization are taken into account.

4.3 **Waste Generated in Operations**	3.5	The data from the waste report for the balancing year are used to determine waste quantities and are the same as the quantities stated in the environmental report. The data originates from the waste management officer's evaluation of the information provided by the waste disposal service providers. This information is based on weight measurements from waste management companies. The GHG emissions are calculated using emission factors with weight-related reference to the waste quantities and volume-related reference to the wastewater quantity.
3.5 **Business Travel**	3.6	Recording of data on business trips (air, rail, local transport, rental car trips, hotel stays) via travel service providers and internal expense reports. If distance data for trips is missing, these are calculated from the costs using conversion factors. The GHG emissions are calculated according to the determined functional units using emission factors specific to the means of transport and, if possible, country-specific emission factors.
3.3 **Employee Commuting**	3.7	Information on the number of kilometers driven and the vehicle used is collected with the help of an employee survey. The evaluated data is extrapolated according to the total number of employees. The survey also records the working days spent in remote working during the reporting period. Assuming that the vehicle classes used are of average build, the GHG emissions are calculated using emission factors that relate to the distance traveled by the respective means of transport. The GHG emissions caused by employees' remote working are calculated using a time-based emission factor.
3.2 **Downstream Transportation and Distribution**	3.9	Consideration of the transport performance from outgoing goods transports where the costs are not the responsibility of Pöppelmann. The calculated freight distance and the gross weight are used to calculate the transportation performance. The information on the transport service provider defines a representative transportation vehicle. The cost responsibility is defined using Incoterms. The calculation of GHG emissions is based on the assumption of representative transport vehicles for the transport service providers. For the calculation based on transportation performance (well-to-wheel), the vehicle type and its capacity utilization are taken into account.
5.3 **End-of-Life Treatment of Sold Products**	3.12	The total weight of the item quantity sold is determined from the ERP system data using an evaluation tool. As this recording relates to the pure weight of plastic, the quantity of purchased production parts procured is also included (see 3.1). Based on the quantities of raw material purchased (see 3.1), the proportion of different types of plastic sold as a processed product by the divisions is indicated. By analyzing the material flows within the outgoing goods (see 3.4, 3.9), the proportion of recipient nations for products sold is determined for each division. Based on various sources on the recycling rate of plastics (PlasticsEurope), the nations are assigned a corresponding disposal profile. GHG emissions are calculated for each division according to the proportion of plastic types to be disposed of, the nations supplied and the recycling and disposal methods used by the nations supplied. Accordingly, emission factors are used that consider the regional type of disposal and recycling as well as the type of plastic to be recycled/ disposed.

Data Quality Assessment

To quantitatively determine the data quality of the GHG balance, a Data Quality Assessment (DQA) is carried out at the level of the calculation categories or within the individual balance categories in accordance with ISO 14064-1:2018 or the GHG Protocol. The DQA includes separate consideration of the life cycle inventory and emission factors used to calculate GHG emissions. These are measured separately with a Data Quality Rating (DQR) and are combined in the product to form the total DQR for the category or the entire scope. A weighting is used to calculate the DQR of higher-level categories. The DQR does not allow any direct statement to be made about the margin of error or statistical accuracy.

Data Quality Aspect	DQR (inventory)*	DQR (emission factor)*	DQR total*
total	**89 %**	**86 %**	**76 %**
Scope 1 total	**96 %**	**93 %**	**89 %**
1.1 Direct emissions from stationary combustion	96 %	93 %	89 %
1.2 Direct emissions from mobile combustion	96 %	93 %	89 %
1.4 Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	86 %	96 %	82 %
Scope 2 total	**96 %**	**88 %**	**85 %**
2.1 Indirect emissions from imported electricity	96 %	88 %	85 %
Scope 3 total	**89 %**	**86 %**	**76 %**
3.1 Purchased Goods and Services	93 %	84 %	78 %
3.2 Capital Goods	89 %	76 %	68 %
3.3 Fuel- and Energy-Related Activities not Included in Scope 1 or Scope 2	97 %	91 %	88 %
3.4 Upstream Transportation and Distribution	93 %	85 %	79 %
3.5 Waste Generated in Operations	93 %	92 %	86 %
3.6 Business Travel	94 %	87 %	82 %
3.7 Employee Commuting	87 %	89 %	78 %
3.9 Downstream Transportation and Distribution	95 %	85 %	81 %
3.12 End-of-Life Treatment of Sold Products	80 %	90 %	72 %

*Errors may occur within the table due to rounding errors

Sources used for GHG calculation

Emission factors are used to consider the GWP100, calculated in accordance with the Sixth Assessment Report of the IPCC. Databases used to calculate GHG emissions are:

- Informationsblatt CO_2-Faktoren, Bundesamt für Wirtschaft und Ausfuhrkontrolle, 01.11.2023
- ProBas (Prozessorientierte Basisdaten für Umweltmanagementsysteme)
- Ecoinvent 3.10
- GHG Conversion Factors for Company Reporting (UK Government, 2023)
- Mobitool v3.0
- Exiobase 3 (Zenondo, access via Climatiq Technologies GmbH)
- Plastics Europe Eco-Profiles Set
- Emission Factors for Greenhouse Gas Inventories (EPA, 2024)
- Supply Chain Greenhouse Gas Emission Facotors v1.3 by NAICS-6 (EPA, 2024)

In addition, dissertations and scientific articles on GHG emissions, publications by government, public and economic institutions, as well as data sheets and information from suppliers on products and services were used.

Climate Program

Climate Goals according to SBTi

- We are committed to reducing our absolute Scope 1 and 2 emissions by 50 % by 2030 compared to 2021.
- We are committed to reducing our absolute Scope 3 emissions by 25 % by 2030 compared to 2021.

Objectives and Initiatives

Objective	Measures and Potential	Plant/ Business Unit Due date, department
Reduction of Scope 2 emissions through the procurement of electricity from renewable energy sources	By 2030, 100 % of the electrical energy procured is to be covered by electricity from renewable energy sources. Reduction potential: ca. 16000 tCO_2e (Scope 2) (+ ca. 1450 tCO_2e in Scope 3 (indirect emissions))	PPDE 31.12.2030 GF, SE, EB
Reduction of Scope 2 emissions through the procurement of electricity from wind farms	Procurement of electricity from regional wind farms. Share of the electricity mix > 40 % in 2024. Reduction potential: ca. 1000 tCO_2e (in addition to savings achieved to date through PPA) In 2023, the Pöppelmann electricity mix contained 36 % PPA wind onshore (regional)	PPDE 31.12.2024 GF, SE, EB
Only electricity from renewable energy sources is procured	In 2023, 100 % of the electrical energy procured is to be covered by electricity from renewable energy sources Status: completed, reduction of 133 tCO_2e compared to 2021	PPF 31.12.2023 GF (PPF)
Own power generation through photovoltaics: Increase PV output from 65 to 4,600 MWh/a by 12/2025	Expansion of photovoltaic systems on the company premises, analyze areas, check the statics of hall roofs, include planning in new construction projects. Reduction potential: ca. 1000 tCO_2e per year PV systems with a total output of 1500 kWp were commissioned in 2023.	PPDE 31.12.2025 GF, EB, SE
By 12/2024, the potential and feasibility of installing rooftop PV systems to generate their own electricity had been examined	Examination of existing roof constructions and availability of compatible PV systems, ROI calculation for various scenarios Reduction potential: 0 tCO_2e (the French site already uses 100 % green electricity)	PPF 31.12.2024 GF (PPF)
50 % reduction in the amount of waste during melt filtration	Collect filter discharge separately, analyze material, determine quantities, carry out tests, prepare material, compound, feed into production process Reduction potential: ca. 96 tCO_2e per year	Plant 1, TE 31.12.2024 TE, TEM, AB
Avoiding the use of virgin material + increasement of recyclability by switching from black material to PCR/PIR mixture	Conversion of a standard material mixture from virgin material with a proportion of black masterbatches to PCR/PIR mixture with at least 35 % PCR content, ensuring recyclability by using gray masterbatches Reduction potential: ca. 330 tCO_2e per year	Werk 1, TE 31.12.2024 TE

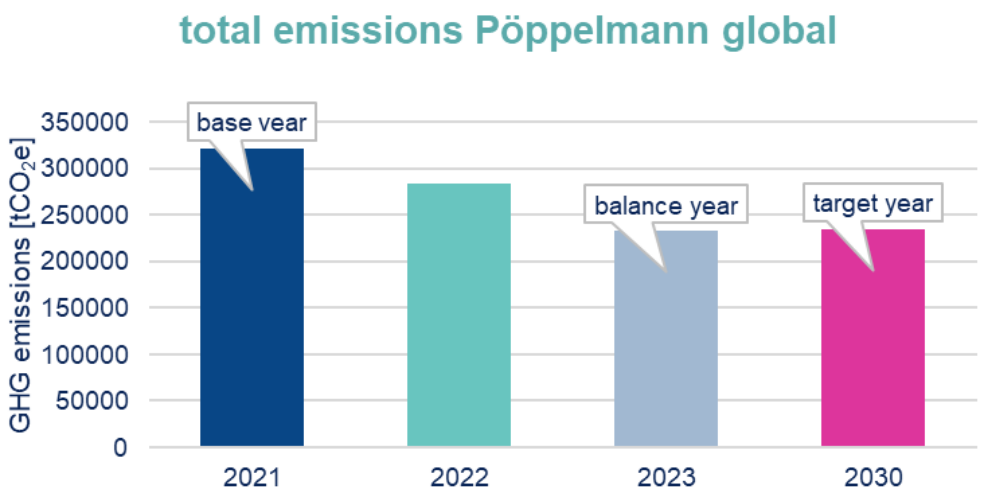
Reduction and avoidance of process water disposal volumes during compounding. Reduction of COD and microplastics from process wastewater	Feasibility study with external support, profitability analysis and process implementation Reduction potential: ca. 25 tCO_2e per year	Werk CP, CP 31.12.2024 TEM
By 2025, we will cover more than 60 % of our plastics consumption with recyclates (50 % PCR and 10 % PIR)	Developing new sources of recyclates, providing customers with information on the use of recyclates Reduction potential: ca. 4000 tCO_2e per year Status: Recycled material quota 2023: 49 %	PPDE 31.12.2025 SE, all divisions
Reduction of material consumption for technical plastic parts through the development of lightweight components for the automotive industry.	Weight reduction of existing assembly group for vehicles by new construction mechanism, developing a lightweight product concept based on the overmolding of profiles. Reduction potential: weight reduction of the assembly group of ca. 30 %; reduction of GHG emissions will be calculated during the project	PPF exp. 31.12.2028 KT
By 2025, all the packaging we produce will be 100 % recyclable in accordance with the standards in Germany and the EU	Development of packaging without material mixes. Sortable packaging for waste sorting systems. Reduction potential: ca. 16000 tCO2e per year, from 2025 with 100 % recyclable packaging and 42 % recycling rate in Germany Recyclability of packaging in 2023: 71 %	PPDE 31.12.2025 FA, TE
Master data improvement in the procurement of metals and metal components	Inclusion of master data in the ERP system, which is required for simpler and better evaluation of the inventory/ GHG accounting. Data improvement potential: ca. 20 % for procurement category *metals*	Plant 1, WTZ 31.12.2024 WTZ, SE
Review and evaluation of measures to reduce Scope 1 and transport emissions	Testing and evaluating alternative fuels, testing an e-truck in collaboration with a transport service provider	PPDE, FAMAC 31.12.2024 AG Mindset, HSE, FAMAC
Raising awareness of climate protection	Implementation of climate protection weeks. Preparation and implementation of an e-learning course on climate protection at Pöppelmann	PPDE 31.12.2024 AG Mindset, HSE

Comparison with base year 2021

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2023 [tCO_2e]	absolute change *	relative change *
		Total emissions	**321135**	**234063**	**-87072**	**-27 %**
1	**1**	**Scope 1: Direct GHG emissions**	**3035**	**2243**	**-792**	**-26 %**
1.1	1	Direct emissions from stationary combustion	2013	1472	-541	-27 %
1.2	1	Direct emissions from mobile combustion	866	706	-160	-18 %
1.4	1	Direct fugitive emissions arise from the release of Greenhouse Gases in anthropogenic systems	155	65	-91	-58 %
2	**2**	**Scope 2: Indirect GHG emissions**	**23694**	**18581**	**-5113**	**-22 %**
2.1	2	Indirect emissions from imported electricity	23694	18581	-5113	-22 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**294406**	**213239**	**-81167**	**-28 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	145152	106773	-38378	-26 %
4.2	3.2	Capital Goods	1665	20537	18873	1134 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	7745	4411	-3334	-43 %
3.1	3.4	Upstream Transportation and Distribution	11457	7857	-3600	-31 %
4.3	3.5	Waste Generated in Operations	3444	3091	-353	-10 %
3.5	3.6	Business Travel	156	664	505	325 %
3.3	3.7	Employee Commuting	5337	1941	-3397	-64 %
3.2	3.9	Downstream Transportation and Distribution	5014	5198	184	4 %
5.3	3.12	End-of-Life Treatment of Sold Products	114436	62767	-51669	-45 %

*change in the reporting year compared to the previous year

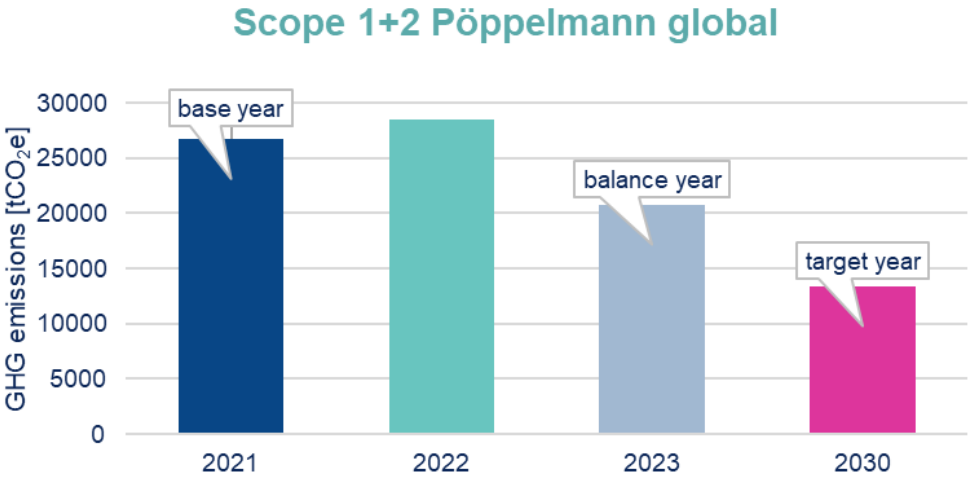
Within the entire scope of climate management, a reduction in total emissions of 87072 tCO_2e or 27 % compared to the base year 2021 can be recorded.



Target Achievement in Scope 1 and Scope 2

The reduction of emissions in Scope 1 and Scope 2 combined is 5905 tCO_2e or 22 % in comparison to the base year. The reduction is caused by reduced consumption of energy, increased energy efficiency and the procurement of climate friendly electricity amounts. After an increase in 2022 due to higher amounts of coal-based electricity in the supplier's energy mix, we also recorded a reduction compared to the base year. The influence of changes in data quality or adjusted emission factors is marginal for both scopes.

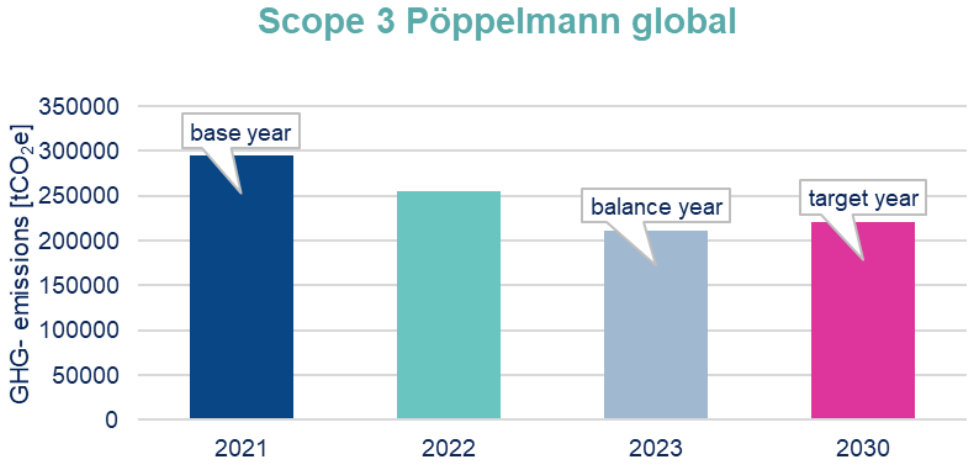
The target of a 50 % reduction in Scope 1 and Scope 2 by 2030 is feasible and realistically achievable based on the existing and planned initiatives regarding climate protection.



Target Achievement in Scope 3

The reduction of emissions in Scope 3 is 81167 tCO_2e or 28 % in comparison to the base year. The reduction is mainly caused by reduced material consumption in the core processes due to the general economic situation. Moreover, the procurement of climate friendly electricity amounts and the reduction of energy consumption effects the Scope 3 emissions from the indirect shares of energy-related emissions.

The improvement of data quality - alongside more accurate business data, especially by using more representative and more current emission factors – influences the accounting more significantly. The continuous improvement of climate management leads to improvements in data collection and accounting methodology in Scope 3, while the increased focus on GHG emissions in the supply chain leads to more detailed assessments of activities.



Appendix

Greenhouse Gas footprint for Plant 1

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**148357**	**115085**	**81015**	**-30 %**
1	**1**	**Scope 1: Direct GHG emissions**	**1467**	**1223**	**1056**	**-14 %**
1.1	1	Direct emissions from stationary combustion	914	732	619	-15 %
1.2	1	Direct emissions from mobile combustion	541	482	423	-12 %
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	12	9	15	59 %
2	**2**	**Scope 2: Indirect GHG emissions**	**10564**	**11489**	**7757**	**-32 %**
2.1	2	Indirect emissions from imported electricity	10564	11489	7757	-32 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**136327**	**102373**	**72202**	**-29 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	46530	37761	27090	-28 %
4.2	3.2	Capital Goods	651	6830	1523	-78 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	3504	3999	1727	-57 %
3.1	3.4	Upstream Transportation and Distribution	6331	5969	3889	-35 %
4.3	3.5	Waste Generated in Operations	735	358	913	155 %
3.5	3.6	Business Travel	58	89	189	112 %
3.3	3.7	Employee Commuting	1844	763	697	-9 %
3.2	3.9	Downstream Transportation and Distribution	2980	3395	2192	-35 %
5.3	3.12	End-of-Life Treatment of Sold Products	73692	43209	33982	-21 %

*Change in the reporting year compared to the previous year

Greenhouse Gas footprint for Plant 2

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**78303**	**67508**	**76202**	**13 %**
1	**1**	**Scope 1: Direct GHG emissions**	**825**	**540**	**574**	**6 %**
1.1	1	Direct emissions from stationary combustion	763	499	509	2 %
1.2	1	Direct emissions from mobile combustion	45	42	63	52 %
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	18	0	2	
2	**2**	**Scope 2: Indirect GHG emissions**	**3954**	**4655**	**3676**	**-21 %**
2.1	2	Indirect emissions from imported electricity	3954	4655	3676	-21 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**73524**	**62313**	**71952**	**16 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	50883	43909	41652	-5 %
4.2	3.2	Capital Goods	311	2983	15542	421 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	1374	1425	872	-39 %
3.1	3.4	Upstream Transportation and Distribution	980	787	647	-13 %
4.3	3.5	Waste Generated in Operations	1142	381	1130	197 %
3.5	3.6	Business Travel	29	59	195	228 %
3.3	3.7	Employee Commuting	1740	571	730	28 %
3.2	3.9	Downstream Transportation and Distribution	1768	2175	2039	-6 %
5.3	3.12	End-of-Life Treatment of Sold Products	15296	10022	9144	-9 %

*Change in the reporting year compared to the previous year

Greenhouse Gas footprint for Plant 3

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**61659**	**62508**	**48784**	**-22 %**
1	**1**	**Scope 1: Direct GHG emissions**	**190**	**142**	**106**	**-25 %**
1.1	1	Direct emissions from stationary combustion	128	93	70	-24 %
1.2	1	Direct emissions from mobile combustion	40	38	35	-6 %
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	22	11	0	-100 %
2	**2**	**Scope 2: Indirect GHG emissions**	**4496**	**5554**	**4131**	**-26 %**
2.1	2	Indirect emissions from imported electricity	4496	5554	4131	-26 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**56973**	**56812**	**44546**	**-22 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	27994	30036	24276	-19 %
4.2	3.2	Capital Goods	328	4468	1614	-64 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	1.395	1459	841	-42 %
3.1	3.4	Upstream Transportation and Distribution	1777	1213	1352	11 %
4.3	3.5	Waste Generated in Operations	306	79	182	131 %
3.5	3.6	Business Travel	8	6	35	471 %
3.3	3.7	Employee Commuting	1.547	367	301	-18 %
3.2	3.9	Downstream Transportation and Distribution	265	384	303	-21 %
5.3	3.12	End-of-Life Treatment of Sold Products	23352	18801	15643	-17 %

*Change in the reporting year compared to the previous year

Greenhouse Gas footprint for Plant CP

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**4790**	**5729**	**4346**	**-23 %**
1	**1**	**Scope 1: Direct GHG emissions**	**16**	**14**	**14**	**2 %**
1.1	1	Direct emissions from stationary combustion	15	13	13	-1 %
1.2	1	Direct emissions from mobile combustion	1	1	1	77 %
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	0	0	0	
2	**2**	**Scope 2: Indirect GHG emissions**	**496**	**605**	**434**	**-28 %**
2.1	2	Indirect emissions from imported electricity	496	605	434	-28 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**4278**	**5110**	**3954**	**-23 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	3064	4420	2945	-33 %
4.2	3.2	Capital Goods	0	7	8	11 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	153	158	90	-43 %
3.1	3.4	Upstream Transportation and Distribution	0	205	210	2 %
4.3	3.5	Waste Generated in Operations	1061	316	700	122 %
3.5	3.6	Business Travel	0	0	0	
3.3	3.7	Employee Commuting	0	4	2	-55 %
3.2	3.9	Downstream Transportation and Distribution	0	0	0	
5.3	3.12	End-of-Life Treatment of Sold Products	0	0	0	

*Change in the reporting year compared to the previous year

Greenhouse Gas footprint for Plant France

The GHG balance for the French site, i.e. for Poeppelmann Plastiques France S.A.S., was prepared by DO climate GmbH, Nürtiger Str. 30, 72074 Tübingen. The accounting and calculation of the site's data was carried out in line with the global reporting in accordance with the requirements of ISO 14064-1:2018.

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**6022**	**3862**	**4688**	**21 %**
1	**1**	**Scope 1: Direct GHG emissions**	**199**	**165**	**149**	**-10 %**
1.1	1	Direct emissions from stationary combustion	125	92	80	-13 %
1.2	1	Direct emissions from mobile combustion	61	65	67	3 %
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	13	8	2	-77 %
2	**2**	**Scope 2: Indirect GHG emissions**	**133**	**41**	**1**	**-97 %**
2.1	2	Indirect emissions from imported electricity	133	41	1	-97 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**5690**	**3656**	**4538**	**24 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	3801	2388	2142	-10 %
4.2	3.2	Capital Goods	279	149	1301	771 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	59	80	71	-11 %
3.1	3.4	Upstream Transportation and Distribution	192	147	124	-16 %
4.3	3.5	Waste Generated in Operations	134	131	94	-28 %
3.5	3.6	Business Travel	36	13	27	109 %
3.3	3.7	Employee Commuting	145	124	151	22 %
3.2	3.9	Downstream Transportation and Distribution	0	34	28	-17 %
5.3	3.12	End-of-Life Treatment of Sold Products	1044	590	600	2 %

*Change in the reporting year compared to the previous year

Greenhouse Gas footprint for Plant USA

ISO 14064-1	GHG-Protocol	Category/ Scope	2021 [tCO_2e]	2022 [tCO_2e]	2023 [tCO_2e]	relative change *
		Total emissions	**22005**	**28416**	**18973**	**-33 %**
1	**1**	**Scope 1: Direct GHG emissions**	**338**	**225**	**344**	**53 %**
1.1	1	Direct emissions from stationary combustion	69	57	181	216 %
1.2	1	Direct emissions from mobile combustion	179	141	117	-17 %
1.4	1	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	90	27	46	71 %
2	**2**	**Scope 2: Indirect GHG emissions**	**4053**	**3764**	**2581**	**-31 %**
2.1	2	Indirect emissions from imported electricity	4053	3764	2581	-31 %
	3	**Scope 3: Indirect GHG emissions from transportation, products used by organization, associated with the use of products from the organization, other sources**	**17614**	**24427**	**16048**	**-34 %**
4 (4.1 + 4.5)	3.1	Purchased Goods and Services	12879	16068	8669	-46 %
4.2	3.2	Capital Goods	96	470	549	17 %
6	3.3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	1259	852	810	-5 %
3.1	3.4	Upstream Transportation and Distribution	2178	2070	1635	-21 %
4.3	3.5	Waste Generated in Operations	66	73	73	0 %
3.5	3.6	Business Travel	24	64	219	243 %
3.3	3.7	Employee Commuting	61	53	60	12 %
3.2	3.9	Downstream Transportation and Distribution	0	0	635	
5.3	3.12	End-of-Life Treatment of Sold Products	1052	4776	3398	-29 %

*Change in the reporting year compared to the previous year

Abbrevations

AB	Abfallbeauftragter/ waste management
CH_4	Methan/ methane
CO_2	Kohlendioxid/ Carcon Dioxide
CO_2e	Kohlendioxid Äquivalent/ Carbon Dioxide Equivalent
CP	Compoundierung/ Compounding
CSB	Chemischer Sauerstoffbedarf/ Chemical Oxygen demand
DQA	Data Quality Asessment
DQR	Data Quality Rating
EB	Energiebeauftragter/ Energy Officer
ERP-System	Enterprise Resource Planning – Softwaresystem
FA	FAMAC
FKW	Fluorkohlenwasserstoffe/ Fluorocarbons
GF	Geschäftsführung/ Managing Director
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
N_2O	Distickstoffmonoxid/ Nitrous oxide
PCR	Post-Consumer Rezyklat/ post-consumer recyclate
PFC	Per- und polyfluorierte Chemikalien/ per- and polyfluorinated chemicals
PFK	Perfluor-Kohlenwasserstoffe/ perfluorcarbons
PIR	Post-Industrial Rezyklat/ post-industrial recyclate
PPDE	Pöppelmann Deutschland/ Pöppelmann Germany
SBTi	Science Based Targets initiative
SE	Strategischer Einkauf/ Strategic Purchasing
SF_6	Schwefelhexafluorid/ Sulphur hexafluoride
THG	TreibhausGas/ Greenhouse Gas
TE	TEKU
TEM	Technologiemanagement/ Technology Management
VP	Verpackungen/ Packaging