

YEAR 14, NR. 1

24TH JANUARY 2024  
REF.NR.: 24.R.0101

# Carbon Footprint Analysis

## First half Year 2023

# PIPELIFE

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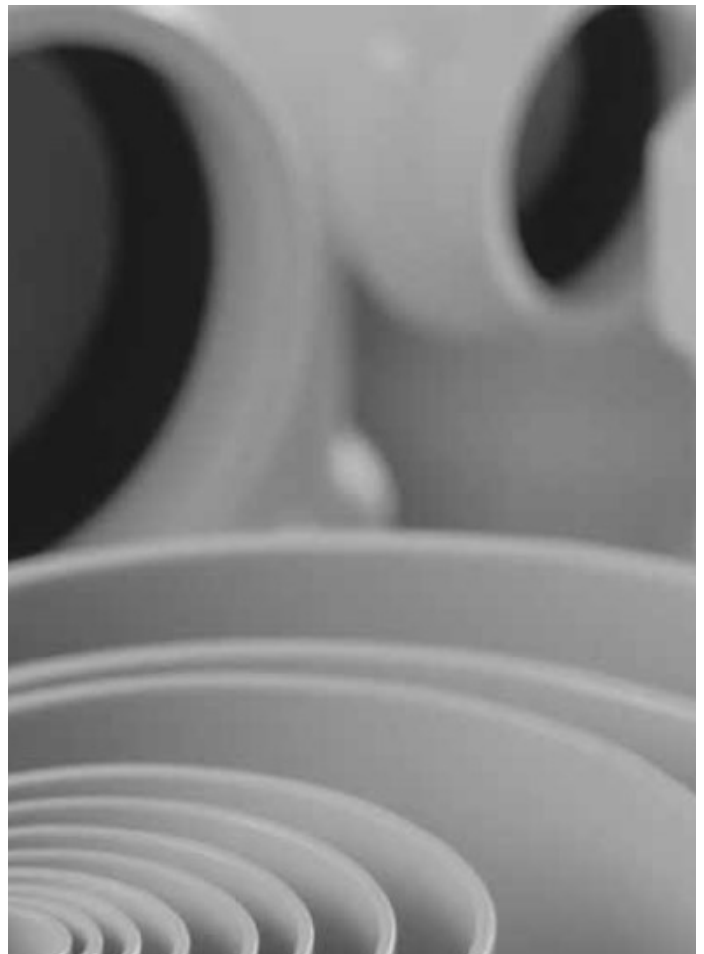
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Aart Jan van der Meijden  
Managing Director Pipelife Nederland B.V.



## Management statement

Pipelife manufactures and supplies a complete range of plastic piping systems, fittings and intelligent customized solutions. Together we develop safe, sustainable and intelligent solutions for water and energy distribution.

In the last years it has become clear that energy resources are not inexhaustible and that the usage affects our environment. We see it as our duty to deal with our environment in a sustainable way. In addition to creating good and sustainable products, we also take into account our environment and our employees, while a motivated organization is the key to sustainable success.

We are convinced that we find the right balance between People, Planet and Profit with a good CSR policy. Therefore we are working for many years according to this policy. For example, we have established our Carbon Footprint and we are busy to realize our reduction targets in the area of energy consumption and CO<sub>2</sub> emissions. We are also very active in recycling and reducing the material consumption in our products. Also by an active Health, Safety, Environmental and Energy policy we are improving our work environment.

Sustainability is a joint effort of our employees, customers, business partners, suppliers and other stakeholders. Together with these partners, we are convinced that we can shape our policy in the future and continuing to play a leading role within our industry.

Aart Jan van der Meijden

Managing Director  
Pipelife Nederland B.V.



## ISO 14064 statement

With this, Pipelife Nederland B.V. states that this report for the "CO<sub>2</sub>-bewust" certificate is prepared in accordance with the guidelines of NEN-ISO 14064, version May 2018.

## Verification statement

With this, Pipelife Nederland B.V. states that this report has not yet been verified but at request of interested parties can be verified by approved bodies and further states:

- the inventory had been designed according to the needs and requirements from the ISO 14064-1, the GHG Protocol, the CO<sub>2</sub>-prestatieladder Manual 3.1
- said CO<sub>2</sub> inventory has no material misstatements, derogatory to the materiality requirement of 5%.

## Organization

### Reporting organization

Pipelife Nederland B.V. is located in Enkhuizen. Pipelife Nederland B.V. is part of Pipelife International GmbH, an international manufacturer of plastic piping systems and fittings and one of the market leaders in Europe. Pipelife was established in 1947, today one of the oldest plastic pipe producers worldwide. Products include sewage, inhouse: electro, water, gas, drainage, cable pipes and eco systems.

Pipelife Nederland has approximately 255 employees spread over seven locations: headquarters, production sites and warehouses.

Pipelife International GmbH was taken over by Wienerberger in 2012 (ceramic industry) and is now a 100% company of the Wienerberger Group. Pipelife International GmbH is located in 24 countries, with headquarters in Vienna, Austria. 3,200 employees worldwide are working on 25 production sites.

Summary of the activities:

- Development, production and sales of plastic pipe systems.

### Responsible person

The person statutorily responsible for the reporting organization is mr. A.J. van der Meijden, Managing Director Pipelife Nederland B.V.

### Organizational boundaries

The organizational boundaries of Pipelife Nederland B.V. are determined in the context of CO<sub>2</sub> (carbon dioxide)-consciousness in accordance with the principle of the operational sphere of influence of the certifying company.

Within the GHG protocol, this is described as the 'operational boundary'. In practice, this means that when activities are executed under the auspices of Pipelife Nederland B.V., the accountability for the CO<sub>2</sub>-production is taken: the own organization has control of this.

Based on the lateral purchase analysis of the CO<sub>2</sub>-performance ladder, it is determined that Pipelife Deutschland GmbH & CO. KG and Preflexibel NV are added within the organizational boundary of Pipelife Nederland B.V.

The organizational boundaries for this inventory includes:

- Pipelife Nederland B.V.;
- Pipelife Deutschland GmbH & CO. KG.
- Preflexibel NV

The rationale for this boundary is listed in the boundary report (**doc. nr 18.R.0304-7**).



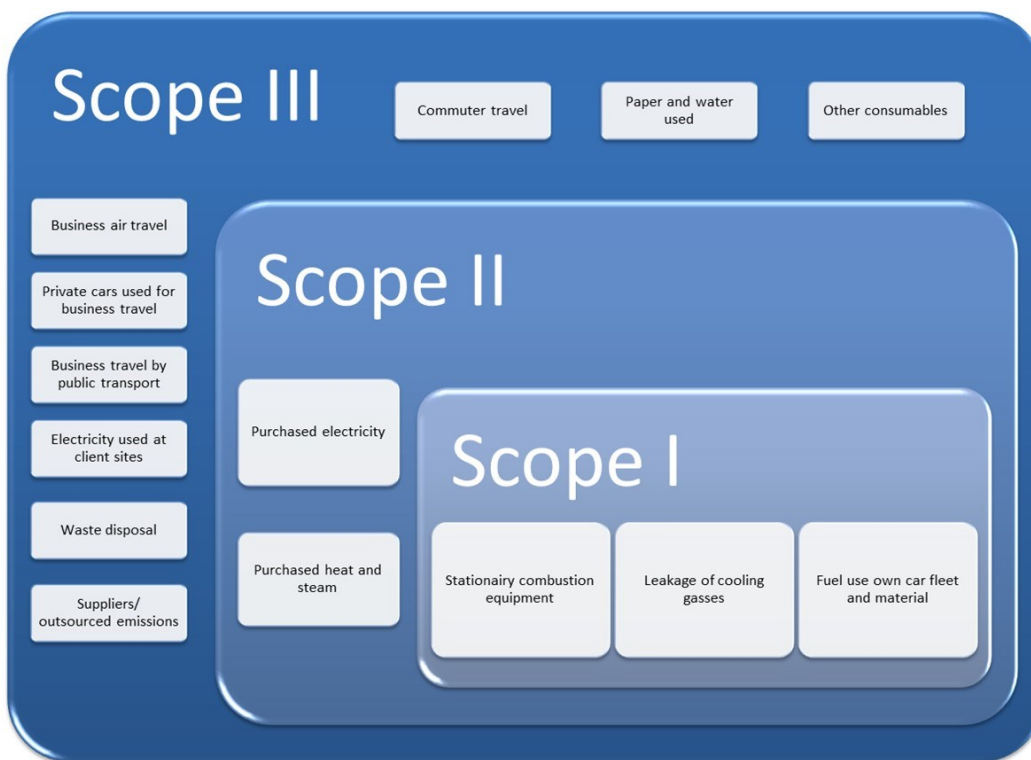
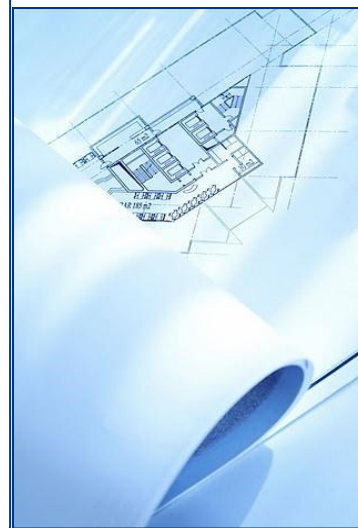
# Carbon Footprint Analysis

## Basis of analysis

CO<sub>2</sub>-emissions and absorptions by activities of the organization have been identified based on the established operational limits. At the identification of emissions a distinction has been made between three sources of emission (known as scopes) into two categories: direct emissions and indirect emissions. This is in line with the Greenhouse Gas (GHG) Protocol.

- Scope 1 covers direct emissions under control, and controlled by, the organization. Examples include the combustion of fuels in machinery, business transport with vehicles owned by the reporting organization and emissions of refrigeration and air conditioning systems;
- Scope 2 includes indirect emissions from purchased electricity, steam or heat;
- Scope 3 includes other indirect emissions from sources such as business travel with privately owned vehicles or public transport and business travel by plane, commuter travel, production of purchased materials and outsourced activities such as freight.

This carbon footprint analysis includes the CO<sub>2</sub>-emissions (one of the six greenhouse gases) of Pipelife Nederland BV, in scope 1, 2 and 3 of the first half of the year 2023. The CO<sub>2</sub> emission is analyzed in accordance with the "CO<sub>2</sub> performance ladder", manual 3.1 22 June 2020.



## Measurement results and explanation

### Reported period

Pipelife Nederland B.V. has synchronized its carbon footprint reporting period with its fiscal year. The fiscal year for Pipelife Nederland B.V. runs from January 1 to December 31. The reported period is the first half of the year 2023.

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## Scope 1: Direct CO<sub>2</sub>-emissions

THE DIRECT CO<sub>2</sub> EMISSION IS MEASURED AND CALCULATED AS 611.1 TONNES CO<sub>2</sub>

### Stationary combustion equipment

In the first half of 2023 163,978 m<sup>3</sup> were used of natural gas. The consumption caused 340.9 tonnes of CO<sub>2</sub> emission (56% of the total direct emission). The natural gas is used for heating of the locations. 105,795 m<sup>3</sup> was used in stationary combustion equipment in Enkhuizen (about 65% of the total consumption).

### Gasses

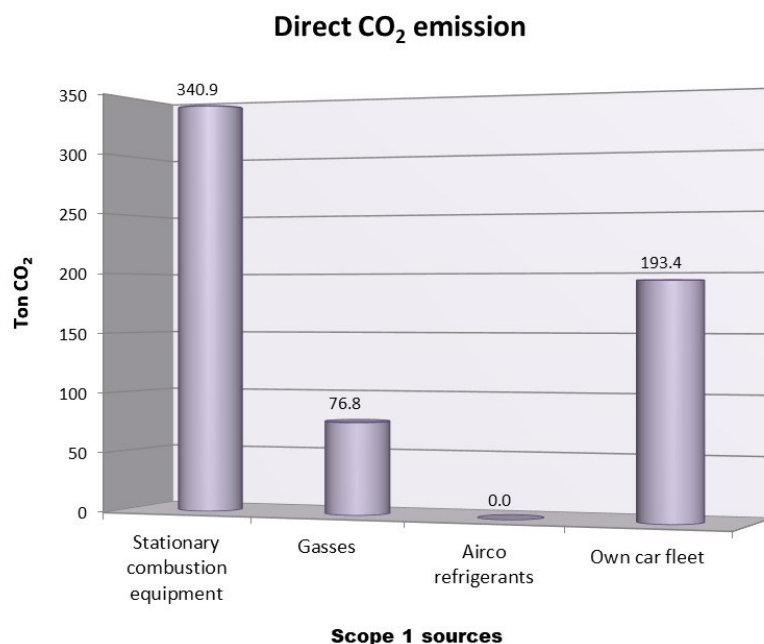
In the first half of 2023 76.8 tonnes of CO<sub>2</sub> emission is caused by the usage of the gasses and CO<sub>2</sub> gasses for the production processes in the Netherlands, Belgium and Germany.

### Usage of refrigerant

In the first half of 2023 there was no consumption of refrigerants in the production processes and climate installations in Germany, Belgium and the Netherlands. The systems for storage and transportable air conditioning-units are regarded as a closed system. Therefore only CO<sub>2</sub>-causing emissions of consumption are calculated, in this period 0,0 tonnes of CO<sub>2</sub> emission.

### Fuel use own car fleet (business car travel)

In the first half of 2023 193.4 tonnes of the CO<sub>2</sub> emissions is assigned to the fuel consumption of the fleet with leased cars. In the first half of 2023 the leasing company has reported an usage of 46,310 litres diesel, 14,912 litres of petrol and 193 kg of CNG.



### Statement of CO<sub>2</sub> sources and sinks omitted

All identified sources and sinks of CO<sub>2</sub> are included in the report. Storage of CO<sub>2</sub> does not occur; there are no sinks.

### CO<sub>2</sub>-emissions from burning biomass

The combustion of biomass did not occur at Pipelife Nederland B.V., Pipelife Germany GmbH or Preflexibel NV in Belgium.



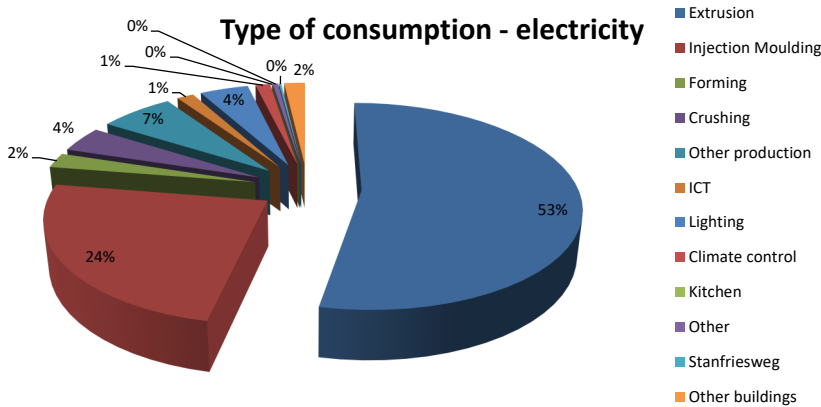
## Scope 2: Indirect CO<sub>2</sub>-emissions

INDIRECT CO<sub>2</sub>-EMISSIONS MEASURED AND CALCULATED ARE 4,704.1 TONNES CO<sub>2</sub>

### Electricity purchased

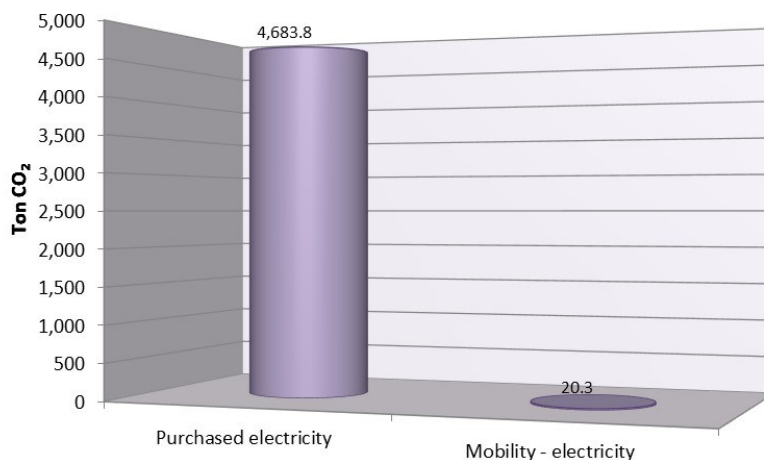
100,0% of the indirect CO<sub>2</sub> emission is caused by consumption of the repurchased electricity. In the reported period, the electricity consumption for buildings and production was in total 10,772,360 kWh. 250,4 MWh was generated by solar panels at our own locations. The repurchased electricity consumption caused 4,683.8 ton CO<sub>2</sub> emission. For mobility 44,462 kWh was consumed by electric cars, which caused 20.3 ton CO<sub>2</sub> emission.

For 2023 Pipelife purchased 5,100 MWh green power with Netherland wind and solar power as its source, the other source is grey power. The green power will be calculated on year level. Under the terms of the CO<sub>2</sub>-performance ladder, the purchased electricity is registered and calculated with a green and grey label performance, see information Influence of measurement inaccuracies and uncertainties on page 8.



Based on the latest information of the energy managementsystem of Pipelife Nederland the extrusion processes caused 53% of the consumption of electricity, second Injection Moulding caused 24% and the other production processes 13% of the usage.

### Indirect CO<sub>2</sub> emission



Scope 2 sources



## Scope 3: Other Indirect CO<sub>2</sub>-emissions

OTHER CO<sub>2</sub>-EMISSIONS MEASURED AND CALCULATED ARE 828.3 TONNES CO<sub>2</sub>

### Other indirect CO<sub>2</sub>-emissions

The most important other indirect CO<sub>2</sub> emissions are measured and calculated in this report. Due to the requirements in CO<sub>2</sub> performance ladder manual version 3.1, the Carbon Footprint report is calculated according to the Green House Gas Protocol and the ISO 14064:2018. The energy sources for business transport are also examined every six months.

Business transport consists of the following three energy sources:

- Business traffic with private cars
- Air travel for business purposes
- Business public transport

The other emission categories Purchase of goods and services, end of treatment life products and Transport and distribution are yearly published in the overall report Analysis Scope 3 CO<sub>2</sub> emissions Pipelife Netherlands B.V. - CO<sub>2</sub> Performance Ladder due to the lack of reliable data on a half-year basis.

### Personal cars for business travel

In the first half of 2023 several employees used their private car for business purposes and declared the mileage. The total mileage declarations by private car were 15,641 km in the reported period. This led to 3.0 ton CO<sub>2</sub>, 0.1% of the other indirectly CO<sub>2</sub> emissions.

### Business air travel

In the first half of 2023 employees made 246,030 flight kilometres for business purposes. 7% of the flights concerned flight distances between 0 – 700 km, 31% of the flights concerned flight distances between 700 – 2500 km and 62% of the flights concerned flight distances more than 2500 km. The air travel caused 40.7 ton CO<sub>2</sub>, 0.9% of the other indirectly CO<sub>2</sub> emissions.

### Business travel by public transport

In the first half of 2023 some employees used public transport for business purposes and declared the travel expenses. The total mileage declarations by public transport were 23,752 km in the reported period. This led to 0.5 ton CO<sub>2</sub>.

### Commuter travel

Commuter travel with transportation is not owned by the company. In the first half of 2023 employees in the Netherlands and Germany travelled with own transportation to our factories and declared the mileage. The total mileage declarations for commuter travel were 1,278,566 km in the reported period. This led to 168.5 ton CO<sub>2</sub>, 20% of the other indirectly CO<sub>2</sub> emissions.

### Waste disposal

As a result of the Pipelife activities in the Netherlands and Germany, a total of 781.5 tonnes of waste was transported to the waste processors In the first half of 2023. Analysis shows that 9% of the waste streams are paper and cardboard, 27% is plastics waste, 10% is wood, 50% is unsorted waste, 2% is Hazardous waste streams en 2% is other waste streams. The unsorted and hazardous waste is incinerated with electricity generation, the other waste streams consisting of paper, plastics, construction and wood were recycled. The recycling percentage is therefore approximately 48% of the total waste stream. The CO<sub>2</sub> emission as a result of the waste disposal caused 615.7 tonnes of CO<sub>2</sub> (74%) of the other indirectly emissions.



## Influence of measurement inaccuracies and uncertainties in scope 1- 2- 3

The foregoing information shows that the vast majority of CO<sub>2</sub> emission is caused by use of fuel in the stationary equipments (340.9 ton of CO<sub>2</sub>, scope 1), the electricity consumption (4,704.1 ton of CO<sub>2</sub>, scope 2) and waste disposal (615.7 ton of CO<sub>2</sub>, scope 3). Therefore, it is important to accurately capture these emissions.

### SCOPE 1:

The fuel data of stationary combustion equipment for heating is provided by the energy suppliers of the locations and controlled with the internal measurements. For the location Flevolaan Pipelife has a joint natural gas grid connection with the neighbour company Renolit. Renolit has specified the information for natural gas on the location Flevolaan. The data of gasses are provided by the suppliers. The location in Belgium has no natural gas consumption. These information is best practice and deemed as sufficiently reliable.

The fleet management data is provided by the fuel suppliers of the leasing companies who manage the fuel passes linked to the vehicles and by declarations of the fuel in fleet cars by employees. Because the mileage registration is less accurate, since not every employee carefully keeps track of the mileage by registering the mileage at the gas station, the CO<sub>2</sub> emission is based on the fuel data if present.

### SCOPE 2:

The consumption data of the electricity is registered from billing information received from the energy suppliers of the different locations and the consumption data of electricity supplied by the leasing companies. Renolit has specified the information for electricity on the location Flevolaan. This information is considered as sufficiently reliable. It should be noted that most of the energy is used in the production processes. Since 2021 Pipelife purchased a new energy contract green power for all Pipelife companies. Further analysis showed that European wind energy had been purchased. In 2022 could additionality of green power by the supplier be demonstrated for 5,100 MWh electricity, therefore Pipelife can calculate with Netherlands solar and wind power according to the conditions of the CO<sub>2</sub> performance ladder and for electricity produced on its own roof. The CO<sub>2</sub> emission for electricity is calculated with the conversion factor of green and grey electricity will be reported on yearly basis in the next report.

### SCOPE 3:

The registration for declared kilometres has been improved since the last report due to law rules. The exact division between private cars or public transport for business purpose and commuter travel by private cars is changed and supplied by the administration.

The emission data of travel by private cars for business purpose is collected by employee declarations. The fuel type and engine classification of the applicable private cars are not registered. The data for public transport for business purpose is collected by information by employee declarations and calculated to distance according to fixed price per kilometre (source MKB ServiceDesk and <http://www.dieeinsparinfos.de/guenstige-mobilitaet/bahn/kosten/>).

The emission data of commuter travel by private cars for business purpose were collected on the basis of the kilometre calculation for the place of residence - business location, based on calculations par employee and in Germany by an average kilometre calculation par employee. The fuel type and engine classification of the applicable private cars are not registered. The method used is considered sufficiently reliable. The data for public transport is collected by information by employee declarations and calculated to distance according to fixed price per kilometre (source NS and <http://www.dieeinsparinfos.de/guenstige-mobilitaet/bahn/kosten/>).

The emission data of waste disposal were collected on the basis of the invoices from waste processors that are used by Pipelife in the Netherlands, Germany and Belgium. The type of waste is registered according to national law. The method used is considered sufficiently reliable.

## CO<sub>2</sub>-compensation

Most resources are used to make improvements within the production processes in the framework of the CO<sub>2</sub>-emission. The emissions of green gas are partly compensated but not calculated in the report.





# Progress against reference year

## Historical base year

The initial measurements in the context of the ISO 14064 standard have been done by Pipelife Nederland B.V. for the calendar year 2010. This year therefore serves as base year against which an increase or decrease in CO<sub>2</sub> emissions is established.

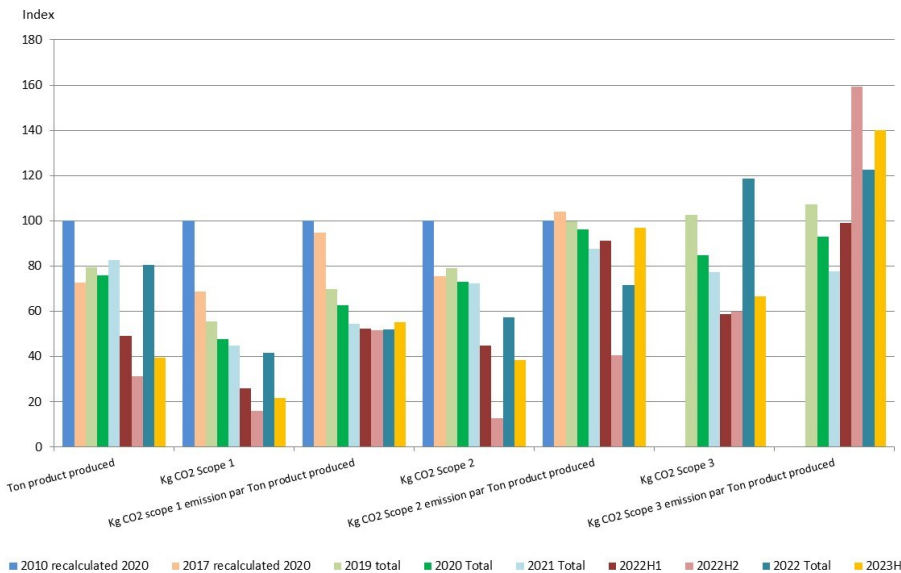
## Adjustments to historical year

Since the report of the 2020 there were adjustments to the base year. Because of the publication of the version 3.1 of the CO<sub>2</sub> performance ladder manual in 2020 the scope classification has been changed and the CO<sub>2</sub> emission factors are changed again in January 2020, 2021, 2022 and 2023. In December 2017 the emission factor for grey electricity was also changed again significantly. Therefore, the publication of base year 2010 is now updated in 2016, 2017 H2 and 2021 and the reference year to 2016 and 2022 because of the latest reduction goals period 2023-2025.

## Normalization measurements

The size of the CO<sub>2</sub> emissions has a clear correlation with the scale of the activities carried out by the organization. For the comparison of the emissions in the reference year and future reported periods, standards are determined to normalize measurement results. For Pipelife, Kg product produced is the standard to scale the business activities. Based on the kg product produced the reported measurement results will be normalized.

Note: since June 2020 the manual CO<sub>2</sub> performance ladder version 3.1 is published. Also because of the publication of changed CO<sub>2</sub> emission factors in 2015, December 2017 and January 2020 the base year 2010 and reference year 2016 and 2017 are recalculated and the information in the graph before 2015 is visible in the previous reports. The scope 3 emissions are published since 2018. Preflexible NV in Belgium was included for the 1st time in the period 2022. The trend data before 2022 are therefore not fully comparable with the results since the 1st period of 2022.



In scope 1 the CO<sub>2</sub> emissions par kg product produced increased in the first half of 2023 compared to the same period in 2021. Compared to the period 2017 the CO<sub>2</sub> emissions for scope 1 in the first half of 2023 are almost 45% lower.

The usage of stationary combustion equipment showed again a significant decrease in the first half of 2023 because of the warmer weather, after correction of degree days the total usage compared to the same period in 2017 is already more than 25% reduced. The usage of refrigerant was in the first half of 2023 was nil. The usage of CO<sub>2</sub> gasses increased due to changes in the productmix, the consumption is significantly higher than the same period in 2017. The litres of fuel

for the own car fleet decreased in the first half of 2023, particularly for the diesel cars and increased for more electric cars. Compared to 2017 the annual estimated reduction the usage in this period was about 10.000 litres below and shows a reduction of about 8%, despite the increased emission factors for fossil fuels and addition of Preflexibel NV to the boundary.

The absolute CO<sub>2</sub> emissions for scope 2 in the first half of 2023 compared to the 2017 period were significantly lower despite the addition of Preflexibel NV. Energy reduction measures, own energy generation, e.g. solar panels at the Enkhuize site and purchasing of green electricity reduced emissions due to the total electricity consumption.

The scope 3 emissions par ton product produced were about 40% higher in the first half of 2023 compared to the baseyear 2018, due to the addition of Preflexibel NV, increase in mobility and air traffic, the increase in commuting, but most of all the increase of the waste streams in this period. The scope 3 emissions on yearly basis are expected for 2023 to be about 25% higher than the period 2018 because of the clean-up campaign. For the calculation of all the scope 3 emissions see our Pipelife Netherlands - Scope 3 inventory CO<sub>2</sub> emissions which is updated yearly.

In the first half of 2023 the actions continues as described in our Energy Efficiency plan (EEP) plan. Pipelife has implementing the Energy Efficiency plan and reduction targets for the period 2023-2025, the measures are implemented as planned in this EEP. Because of the implementation and certification of level 5 of the CO<sub>2</sub> performance ladder our reduction targets were actualised till 2025 and expanded with scope 3 targets. Our reduction goals par ton product in scope 1-2-3 in the first half of 2023 are on schedule.

## Projects with award advantage

### Project Supply of plastic pipes and fittings for drinking water pipes

At the end of 2017 Pipelife Nederland B.V. won his second tender with CO<sub>2</sub> performance ladder advantage. This tender concerns the supply of pipe and fittings for drinking water to a few drinking water companies

The project is still in execution. The project-specific reductions within the project are based on the reduction targets and measures that are part of the EEP of the MJA3. Pipelife's CO<sub>2</sub> reduction plan also applies to this project; the same measures are applied in the implementation.

This project represents about 0.5% of its yearly production volume for Pipelife in the Netherlands. Indexed to the total CO<sub>2</sub> emission, the project therefore causes an emission of approx. 193 tonnes CO<sub>2</sub> during the current contracted period. The expected reductions for this project are therefore estimated at 7 tonnes of CO<sub>2</sub>.

## Calculation models

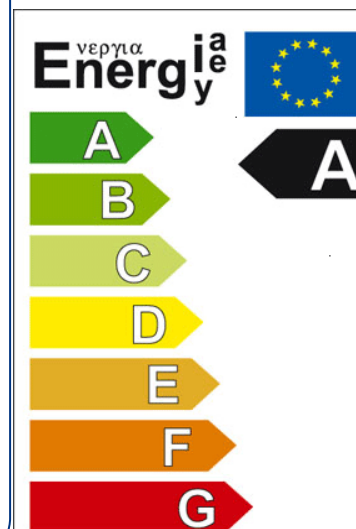
### Quantification methods

The quantification of raw materials to CO<sub>2</sub> emissions is always calculated by registered volume units of the fuels used if present. The conversion of volume to emission values is straightforward and provides the most reliable comparison. In those situations where no volume units of fuel were available, the most reliable information available was used.

Electricity consumption is either taken based on calibrated meters and/or based on the invoices of the energy company. By applicable law, this is the most reliable source of information that is available.

### Explanation for changes in the quantification methods

The measurement over the first half of 2023 is the twenty-fifth measurement in the framework of the ISO 14064 standard. No adjustments in the quantitative methods are made against to the historical year.



## Reduction targets

Based on this Carbon Footprint and the Energy Management System Pipelife defined measures to reduce its CO<sub>2</sub> emissions for the period 2022-2025 for scope 1, 2 and 3.

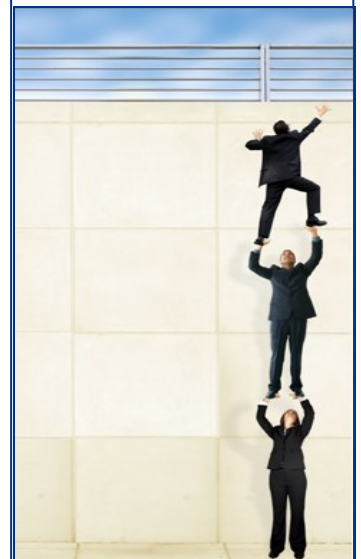
The first target is to reduce the direct emissions per Kg product produced by improvements in Enkhuizen. Next to these reduction targets several investigations in the Netherlands and Germany are in progress to gain knowledge for better understanding of the current energy consumption. Examples of investigations are isolation improvements in production, improvement of heating in the Netherlands and lighting in buildings. These investigations are an ongoing process.

Reduction of the indirect emissions (scope 2) will be carried out by reducing the Electricity usage in the production and reducing energy losses and energy recovery, replacement of lighting to LED, replacements of production infrastructure and implementation of an energy management system for the production facilities.

Reductions of the other indirect emissions (scope 3) are also planned in the Energy Efficiency plan for the period 2022-2025.

Based on the current results and the quantitative information Pipelife wants to reduce its CO<sub>2</sub>-emissions for the period 2022 till 2025 with 5.2% per Kg product produced. The Kg product produced, by equal productmix, is the standardization factor to make comparison possible between the reference period and the progress reports. The reduction objectives for this period are subdivided per scope; scope 1: 15.0%, scope 2: 2.8% and scope 3: 0.7%.

Nr.	Reduction target CO <sub>2</sub>	Total reduction 2022-2025 (%)	CO <sub>2</sub> -emission 2025	
			Reduction (Tonnes CO <sub>2</sub> )	(par ton product produced)
	Implementation Energy Efficiency Plan scope 1 measures	15.06%	152.8	0.0
<b>Total CO<sub>2</sub>-emission scope 1</b>		<b>15%</b>	<b>152.8</b>	<b>0.0</b>
<b>Index CO<sub>2</sub>-emission scope 1</b>		<b>15.1%</b>	<b>152.8</b>	<b>0.1</b>
	Implementation Energy Efficiency Plan scope 2 measures	2.8%	194.7	0.2
<b>Total CO<sub>2</sub>-emission scope 2</b>		<b>2.8%</b>	<b>194.7</b>	<b>0.2</b>
<b>Index CO<sub>2</sub>-emission scope 2</b>		<b>2.8%</b>	<b>194.7</b>	<b>97.2</b>
	Implementation Energy Efficiency Plan scope 3 measures	0.7%	935.0	3.6
<b>Total CO<sub>2</sub>-emission scope 3</b>		<b>0.7%</b>	<b>935.0</b>	<b>3.6</b>
<b>Index CO<sub>2</sub>-emission scope 3</b>		<b>0.7%</b>	<b>935.0</b>	<b>99.3</b>
<b>Total CO<sub>2</sub>-emission scope 1 and 2</b>		<b>4.4%</b>	<b>347.5</b>	<b>0.2</b>
<b>Total CO<sub>2</sub>-emission scope 1,2,3</b>		<b>1.0%</b>	<b>1,282.5</b>	<b>3.8</b>



### Annex 1 CO<sub>2</sub>-emissions first half 2023 scope 1 and 2

	CO <sub>2</sub> -emission factor <sup>1</sup>		2023-H1		CO <sub>2</sub> -emission [metric ton]
	emission factor	Unit	Quantity	Unit	
<b>Scope 1: Direct emissions</b>					<b>611.1</b>
<b>Stationary combustion equipment</b>					<b>417.7</b>
- Natural gas	2,079	g CO <sub>2</sub> / Nm <sup>3</sup>	163,978	Nm <sup>3</sup>	340.9
- Butane <sup>2</sup>	3,143	g CO <sub>2</sub> / kg	-	kg	-
- Propane	1,725	g CO <sub>2</sub> / litre	-	litre	-
- CO <sub>2</sub> gasses <sup>2</sup>	1,000	g CO <sub>2</sub> / kg	76,758	kg	76.8
- Acetylene <sup>2</sup>	3,385	g CO <sub>2</sub> / kg	-	kg	-
- Protegon20 <sup>12</sup>	217	g CO <sub>2</sub> / Nm <sup>3</sup>	8	m <sup>3</sup>	0.0
- Propane	1,725	g CO <sub>2</sub> / litre	27	liter	0.0
- Arcal 21 <sup>2</sup>	57	g CO <sub>2</sub> / Nm <sup>3</sup>	-	m <sup>3</sup>	-
- Sagox 18 <sup>2</sup>	195	g CO <sub>2</sub> / Nm <sup>3</sup>	-	m <sup>3</sup>	-
<b>Airco refrigerants</b>					<b>-</b>
- Refrigerant - R22	1,760	kg CO <sub>2</sub> / kg	-	kg	-
- Refrigerant - R404a	3,943	kg CO <sub>2</sub> / kg	-	kg	-
- Refrigerant - R407c	1,624	kg CO <sub>2</sub> / kg	-	kg	-
- R-449A <sup>3</sup>	1,282	gwp	-	gwp	-
- Refrigerant - R410a	1,924	kg CO <sub>2</sub> / kg	-	kg	-
<b>Own car fleet, fuel use</b>					<b>193.4</b>
- Petrol	2,821	g CO <sub>2</sub> / litre	14,912	liter	42.1
- Diesel	3,256	g CO <sub>2</sub> / litre	46,310	liter	150.8
- CNG (natural gas) (NL)	2,608	g CO <sub>2</sub> / kg	193	kg	0.5
	CO <sub>2</sub> -emission factor <sup>1</sup>		2023-H1		
	emission factor	Unit	Quantity	Unit	CO <sub>2</sub> -emission [metric ton]
<b>Scope 2: Indirect emissions</b>					<b>4,704.1</b>
<b>Purchased electricity</b>					<b>4,704.1</b>
Total used electricity building and production			10,772,360		
own generated solar electricity			250,402		-
- Grey electricity: 2010 and later	456	g CO <sub>2</sub> / kWh	10,271,556	kWh	4,683.8
- Solar energy	0	g CO <sub>2</sub> / kWh	-	kWh	-
- Heat STEG	35,970	g CO <sub>2</sub> / GJ	-	kWh	-
- Mobility -Grey electricity: 2010 and later	456	g CO <sub>2</sub> / kWh	44,462	kWh	20.3

References

- 1: Source: website CO<sub>2</sub>emissiefactoren.nl
- 2: Source: StenVi conversion calculations 2010 and 2023

Scope 1	Ton CO <sub>2</sub>	%
Stationary combustion equipment	340.9	55.8%
Gasses	76.8	12.6%
Airco refrigerants	0.0	0.0%
Own car fleet	193.4	31.6%
<b>Tot</b>	<b>611.1</b>	

Scope 2	Ton CO <sub>2</sub>	%
Purchased electricity	4683.8	99.6%
Mobility - electricity	20.3	0.4%
<b>Tot</b>	<b>4704.1</b>	



### Annex 1 CO<sub>2</sub>-emissions first half 2023 scope 3

	CO <sub>2</sub> -emission factor <sup>1</sup>		2023-H1		CO <sub>2</sub> -emission [metric ton]
	emission factor	Unit	Quantity	Unit	
<b>Scope 3: Other indirect emissions</b>					<b>828.3</b>
<b>Business travel</b>					<b>44.2</b>
<b>Personal cars for business travel</b>					<b>3.0</b>
- Passenger car, unknown fuel type and weight	193	g CO <sub>2</sub> / vehicle km	15,641	km	3.0
<b>Business air travel</b>					<b>40.7</b>
- Distance < 700 km	234	g CO <sub>2</sub> /travellers km	11,966	travellers km	2.8
- Distance 700 - 2.500 km	172	g CO <sub>2</sub> /travellers km	73,917	travellers km	12.7
- Distance > 2.500 km	157	g CO <sub>2</sub> /travellers km	160,147	travellers km	25.1
<b>Business travel by public transport</b>					<b>0.5</b>
- Public transport unknown category	20	g CO <sub>2</sub> /travellers km	23,752	travellers km	0.5
<b>Commuter travel with transportation not owned by the company</b>					<b>168.5</b>
<i>private cars</i>					<i>167.2</i>
- Passenger car, unknown fuel type and weight	193	g CO <sub>2</sub> / vehicle km	866,396	vehicle km	167.2
<i>Commuter travel with public transport</i>					<i>1.2</i>
- Train unknown category	3	g CO <sub>2</sub> /travellers km	412,170	travellers km	1.2
- High speed train	26	g CO <sub>2</sub> /travellers km	0	travellers km	0.0
<b>Waste disposal<sup>2</sup></b>					<b>615.7</b>
- Paper and paperboard	676	g CO <sub>2</sub> / kg	66,796	kg	45.2
- Plastic	120	g CO <sub>2</sub> / kg	210,710	kg	25.3
- Wood	-	g CO <sub>2</sub> / kg	81,710	kg	-
- Metal	1,060	g CO <sub>2</sub> / kg	8,980	kg	9.5
- Hazardous substances	1,308	g CO <sub>2</sub> / kg	18,683	kg	24.4
- Unsorted waste	1,308	g CO <sub>2</sub> / kg	388,710	kg	508.4
- Construction and demolition waste	434	g CO <sub>2</sub> / kg	5,540	kg	2.4
- PMD	1,308	g CO <sub>2</sub> / kg	385	kg	0.5
- Other Waste	1,308	g CO <sub>2</sub> / kg	0	kg	-



References

- 1: Source: website CO2emissiefactoren.nl
- 2: Source: Chain analyses Pipelife and Siemens Netherland / CE Delft/ KEMA



Scope 3	Ton CO <sub>2</sub>	%
Personal cars for business travel	3.0	0.1%
Business air travel	40.7	0.9%
Personal cars for business travel	0.5	0.0%
Commuter travel with transportation not owned by the company	168.5	3.6%
Waste disposal	615.7	13.1%
<b>Tot</b>	<b>828.3</b>	