

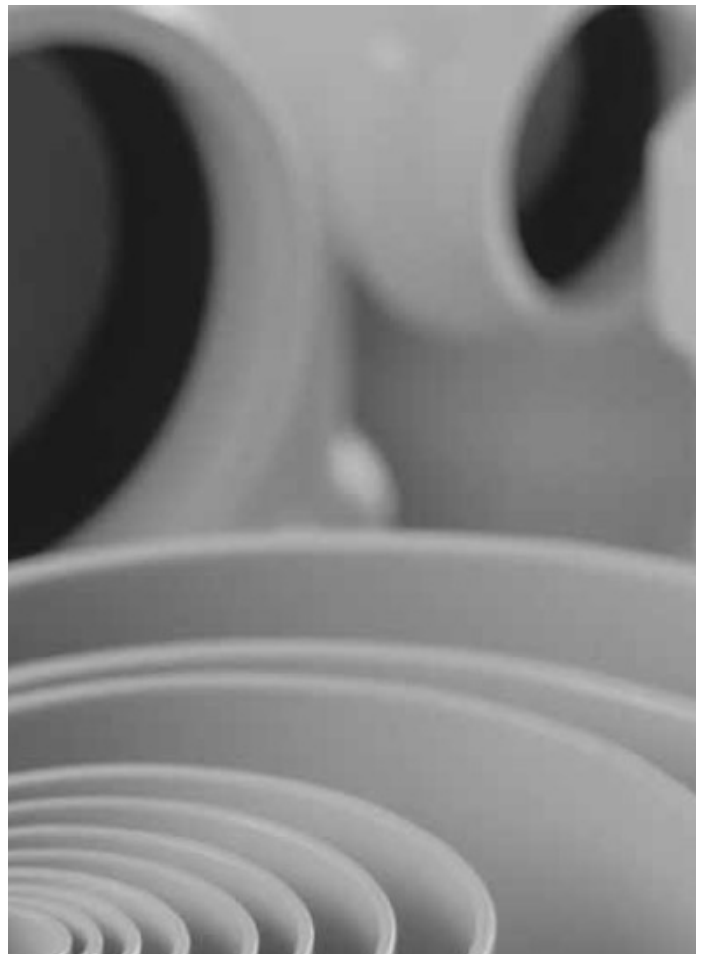
YEAR 10, NR. 2

22 APRIL 2020  
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# Carbon Footprint Analysis 2019

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Mark van Loon  
Managing Director Pipelife Nederland B.V.

## Management statement

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.

Mark van Loon

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 March 2012.

### 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 3.0
- 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 235 employees spread over seven locations: headquarters, production sites and warehouses.

Pipelife International GmbH is taken over by Wienerberger in 2012 (ceramic industry) and is now a 100% company of the Wienerberger Group. Pipelife International GmbH is located in 26 countries, with headquarters in Vienna, Austria. 2,756 employees worldwide are working on 26 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. M. van Loon, MD 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 is 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.

The rationale for this boundary is listed in the boundary report (**doc. nr 18.R.0304-2**).



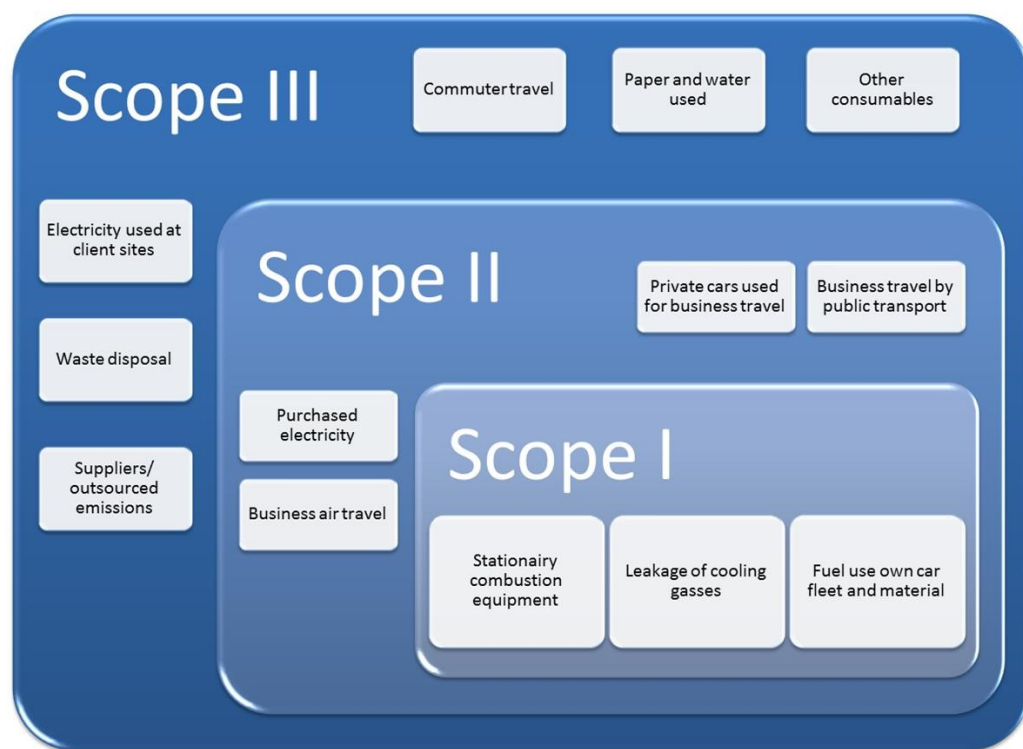
# Carbon Footprint Analysis

## 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, business travel with privately owned vehicles or public transport and business travel by plane;
- Scope 3 includes other indirect emissions from sources such as commuter travel, production of purchased materials and outsourced activities such as freight.

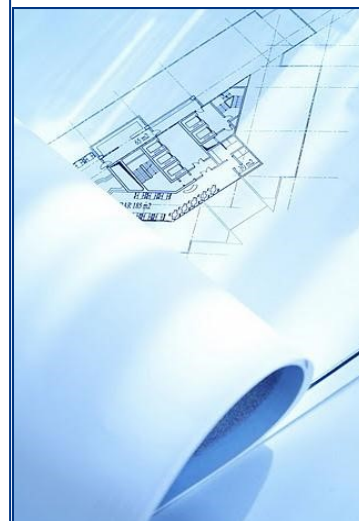
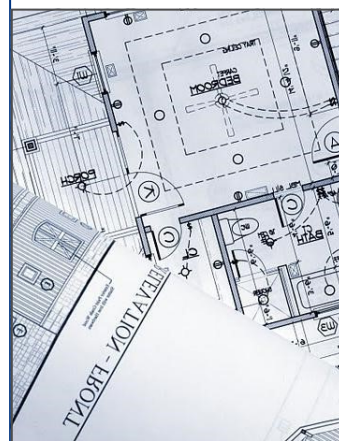
This carbon footprint analysis includes the CO<sub>2</sub>-emissions (one of the six greenhouse gases) of Pipelife Nederland BV, in scope 1, 2 and 3 of the year 2019. The CO<sub>2</sub> emission is analyzed in accordance with the “CO<sub>2</sub> performance ladder”, manual 3.0 10 June 2015.



## 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 entire year 2019.



YEAR 10, NR. 2

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

THE DIRECT CO<sub>2</sub> EMISSION IS MEASURED AND CALCULATED AS **1,481.2 TONNES CO<sub>2</sub>**

### Stationary combustion equipment

In 2019 414,944 m<sup>3</sup> were used of natural gas. The consumption caused 784,2 tonnes of CO<sub>2</sub> emission (53% of the total direct emission). The natural gas is used for heating of the locations. 323,906 m<sup>3</sup> is used in stationary combustion equipment in Enkhuiszen (about 78% of the total consumption).

### Gasses

In 2019 175.4 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 and Germany.

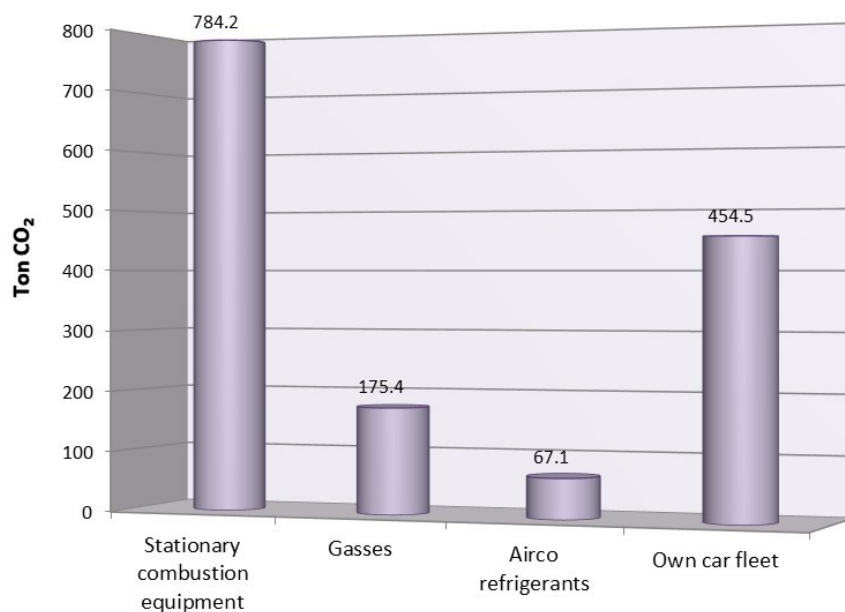
### Usage of refrigerant

In 2019 a total of 67.1 tonnes of CO<sub>2</sub> emission is caused by the consumption of refrigerants in the production processes in Germany and cooling and freezing systems. 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.

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

In 2019 454.5 tonnes of the CO<sub>2</sub> emissions is assigned to the fuel consumption of the fleet with leased cars. In 2019 the leasing company has reported an usage of 124,467 litres diesel and 19,145 litres of petrol.

Direct CO<sub>2</sub> emission



Scope 1 sources

### 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. or Pipelife Germany GmbH.



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

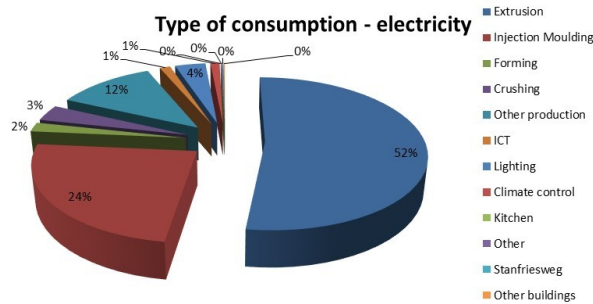
INDIRECT CO<sub>2</sub>-EMISSIONS MEASURED AND CALCULATED ARE 14,024.9 TONNES CO<sub>2</sub>

### Electricity purchased

98,6% of the indirect CO<sub>2</sub> emission is caused by consumption of the repurchased electricity. In the reported period, the electricity consumption was in total 21,303,619 kWh, this is 13,826.0 ton CO<sub>2</sub> emission.

Under the terms of the CO<sub>2</sub>-performance ladder, the electricity is registered and calculated with a grey label performance, see information Influence of measurement inaccuracies and uncertainties on page 7.

Based on the latest information of the energy managementsystem of Pipelife Nederland the extrusion processes caused 52% of the consumption of electricity, second Injection Moulding caused 24% of the usage. Lighting caused 4% of the consumption.



### Personal cars for business travel

In 2019 several employees used their private car for business purposes and declared the mileage. The total mileage declarations by private car were 77,471 km in the reported period. This led to 17.0 ton CO<sub>2</sub>, 0.1% of the indirectly CO<sub>2</sub> emissions.

### Business air travel

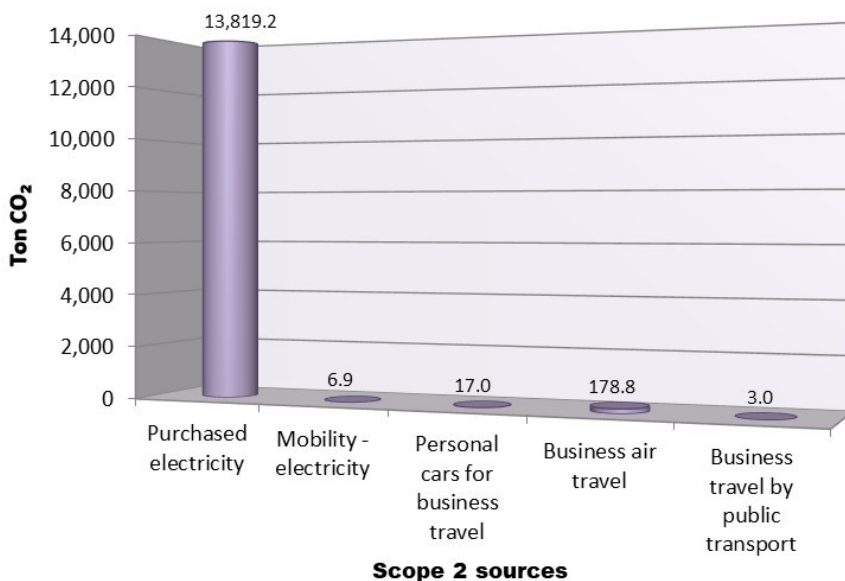
In 2019 employees made 1,037,729 flight kilometers for business purposes. 11% of the flights concerned flight distances between 0 – 700 km, 34% of the flights concerned flight distances between 700 – 2500 km and 55% of the flights concerned flight distances more than 2500 km. The air travel caused 178.8 ton CO<sub>2</sub>, 1.3% of the indirectly CO<sub>2</sub> emissions.

### Business travel by public transport

In 2019 some employees used public transport for business purposes and declared the travel expenses. The total mileage declarations by public transport were 86.744 km in the reported period. This led to 3.0 ton CO<sub>2</sub>.



Indirect CO<sub>2</sub> emission



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

OTHER CO<sub>2</sub>-EMISSIONS MEASURED AND CALCULATED ARE 1,073.9 TONNES CO<sub>2</sub>

### Commuter travel

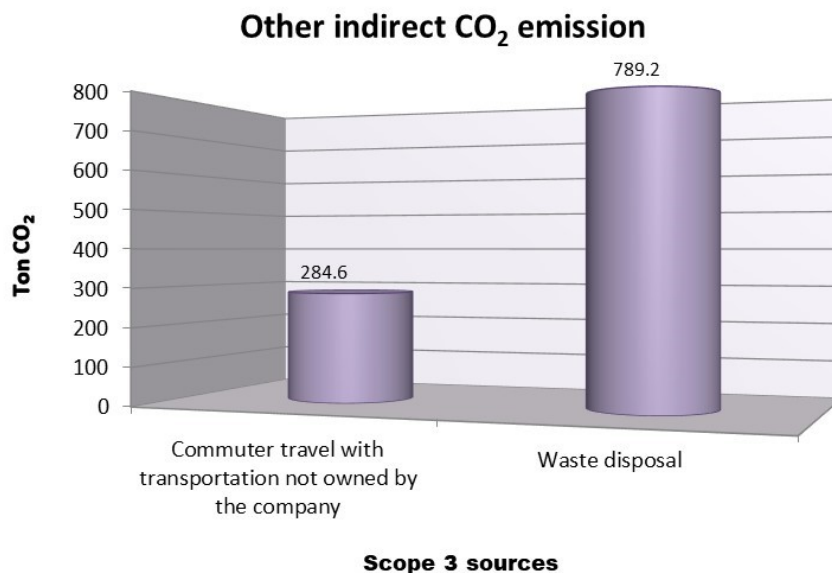
Commuter travel with transportation is not owned by the company. In 2019 employees in the Netherlands and Germany travelled with own transportation to our factories and declared the mileage. The total mileage declarations for commuter travel were 1,293,692 km in the reported period. This led to 284.6 ton CO<sub>2</sub>, 26% of the indirectly CO<sub>2</sub> emissions.

### Waste disposal

As a result of the Pipelife activities in the Netherlands and Germany, a total of 1,286.0 tonnes of waste was transported to the waste processors in 2019. Analysis shows that 6% of the waste streams are paper and cardboard, 42% is plastics waste, 12% is wood, 36% is unsorted waste, 2% is Hazardous waste streams en 1% is old metal waste streams. The unsorted and hazardous waste is incinerated with electricity generation, the other waste streams consisting of paper, plastics, metal and wood were recycled. The recycling percentage is therefore approximately 61% of the total waste stream. The CO<sub>2</sub> emission as a result of the waste disposal caused 789.2 tonnes of CO<sub>2</sub> (73%) of the other emissions.

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

The most important other indirect CO<sub>2</sub> emissions are measured and calculated in this report. 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.



## 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 (784.2 ton of CO<sub>2</sub>, scope 1), the electricity consumption (13,826.0 ton of CO<sub>2</sub>, scope 2) and waste disposal (789.2 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 heating installation 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. 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. The CO<sub>2</sub> emission for electricity is calculated with the conversion factor of grey electricity for this period.

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/>).

### SCOPE 3:

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 MKB Servicedesk 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 and Germany. 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.





# 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.

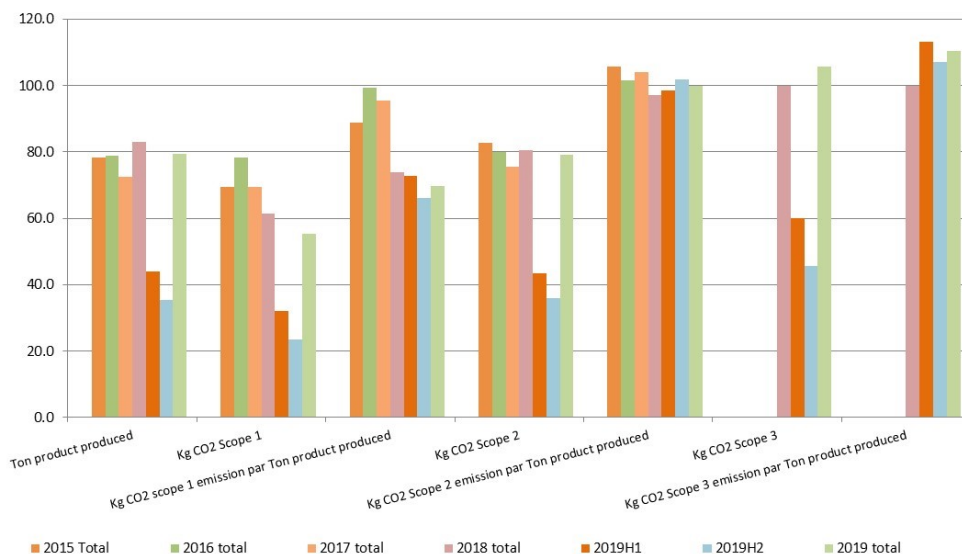
## Adjustments to historical year

For the period of 2019 there are no adjustments to the base year. Because of the publication of the version 3.0 of the CO<sub>2</sub> performance ladder manual the CO<sub>2</sub> emission factors are changed since report year 6, nr.1. In December 2017 the emission factor for grey electricity was changed again significantly. Therefore, the publication of base year 2010 is updated in 2016 and 2017 H2.

## 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 2015 the manual CO<sub>2</sub> performance ladder version 3.0 is published. Because of the publication CO<sub>2</sub> emission factors were changed in 2015 and in December 2017 The base year 2010 is recalculated and the information in the graph before 2015 is visible in the previous reports. The scope 3 emissions are published since 2018.



In scope 1 the CO<sub>2</sub> emissions par kg product produced in 2019 showed a further improvement. Compared to the period 2016 the CO<sub>2</sub> emissions for scope 1 in 2019 are reduced to 29.4%.

The usage of stationary combustion equipment reduced further in 2019 to 15% due to actions in the summer of 2018. Almost 75,000 m<sup>3</sup> gas has already been saved. The usage of refrigerant is seasonal and has been analysed on yearly basis. The usage of refrigerant in 2019 reduced to 87% compared to 2016. The usage of CO<sub>2</sub> gasses increased due to changes in the productmix. The litres of fuel for the own car fleet increased slightly in 2019 after reductions in 2018 and further. Compared to the same period in 2016 the reduction is almost 20.000 litres and shows a reduction of more than 66 tonnes CO<sub>2</sub>.

The absolute CO<sub>2</sub> emissions for scope 2 in 2019 compared to the same period in 2016 were slightly lower to 0.9% due to energy reduction measures in comparison to the further increasing



product volume produced in the Netherlands. The emission for business air travel were significantly lower than in the comparable period of 2016, but increased in 2019 after the reductions in 2018.

The scope 3 emissions par ton product produced were slightly higher in 2019 compared to the baseyear 2018, because of improvements in the calculation. For the calculation of all scope 3 emissions see our Pipelife Netherlands - Scope 3 inventory CO<sub>2</sub> emissions which is updated yearly.

In 2019 the actions continues as described in our Energy Efficiency plan (EEP) plan for the MJA 3 program. In 2019 The roof of the logistics hall was replaced and lighting tubes were replayed by LED lighting in these hal and in our location in s'Gravendeel. In our production five injection molding machines and two extrusion machines were replaced and Pipelife commissioned a new industrial tube production line and a PVC production line was dismantled. In logistics actions we replaced a diesel forklift for electric forklift. Also the compressed air installation has been improved by replacing a compressor. We worked also to reduce the waste rate in production and more use of secondary raw materials.

The MJA 3 program for the period 2017-2020 is in progress. Pipelife is implementing the Energy Efficiency plan and reduction targets for the period till 2022, 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 2022 and expanded with scope 3 targets. The reduction goals par ton product produced are still on target, but challenging.

## 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 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

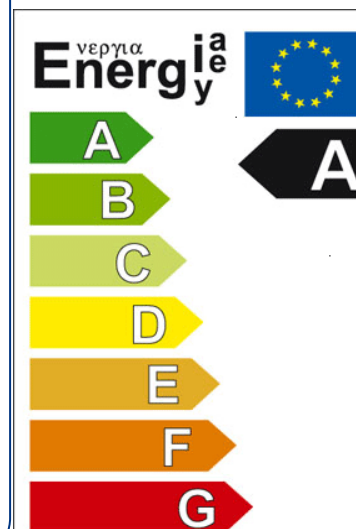
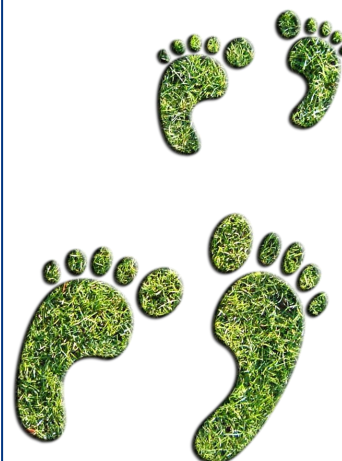
### Quantification methods

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 2019 is the eighteenth 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 2017-2022 for scope 1, 2 and 3.

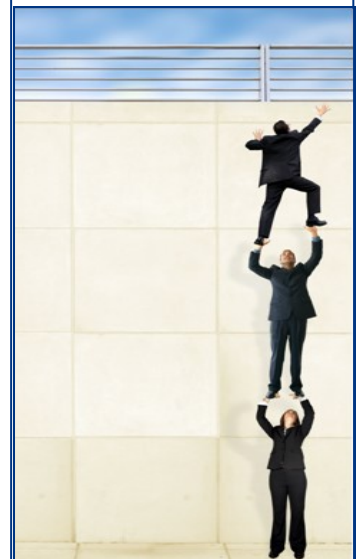
The first target is to reduce the direct emissions per Kg product produced by improvements to the roof of the factory in Enkhuizen and change our forklifts from diesel to electric. Next to these reduction targets several investigations in the Netherlands and Germany are in progress to gain knowledge 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, 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 2017-2022.

Based on the current results and the quantitative information Pipelife wants to reduce its CO<sub>2</sub>-emissions for the period 2017 till 2022 with 3.6% per Kg product produced. The Kg product produced is the standardization factor to make comparison possible between the reference period and the progress reports. In the Netherlands Pipelife wants to reduce 8.5% of its own CO<sub>2</sub> emissions in 2022 compared to 2016. The reduction objectives for this period are subdivided per scope; scope 1: 0.11%, scope 2: 9.7%.

Nr.	Reduction target CO <sub>2</sub>	Total reduction 2017-2022 (%)	CO <sub>2</sub> -emission 2022	
			n (Tonnes CO <sub>2</sub> )	(par ton product produced)
	Implementation Energy Efficiency Plan scope 1 measures	0,04%	0,8	61,9
<b>Index CO<sub>2</sub>-emission scope 1</b>		<b>0,0%</b>	<b>0,8</b>	<b>100,0</b>
	Implementation Energy Efficiency Plan scope 2 measures	4,1%	579,9	401,1
<b>Index CO<sub>2</sub>-emission scope 2</b>		<b>4,1%</b>	<b>579,9</b>	<b>95,9</b>
	Implementation Energy Efficiency Plan scope 3 measures	3,5%	3.834,1	2.991,2
<b>Index CO<sub>2</sub>-emission scope 3</b>		<b>3,5%</b>	<b>3.834,1</b>	<b>96,5</b>
<b>Index CO<sub>2</sub>-emission scope 1 and 2</b>		<b>3,6%</b>	<b>580,7</b>	<b>96,4</b>
<b>Index CO<sub>2</sub>-emission scope 1, 2 en 3</b>		<b>3,5%</b>	<b>4.414,8</b>	<b>96,5</b>





## Annex 1 CO<sub>2</sub>-emissions 2019 scope 1 and 2

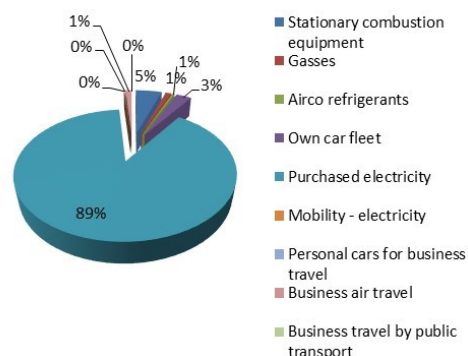
	CO <sub>2</sub> -emission factor <sup>1</sup>		2019 total		
	emission factor	Unit	Quantity	Unit	CO <sub>2</sub> -emission [metric ton]
<b>Scope 1: Direct emissions</b>					<b>1,481.2</b>
<b>Stationary combustion equipment</b>					<b>959.7</b>
- Natural gas	1,890	g CO <sub>2</sub> / Nm <sup>3</sup>	414,944	Nm <sup>3</sup>	784.2
- 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	175,434	kg	175.4
- Acetylene <sup>2</sup>	3,385	g CO <sub>2</sub> / kg	-	kg	-
- Sagox 18 <sup>2</sup>	195	g CO <sub>2</sub> / Nm <sup>3</sup>	-	m <sup>3</sup>	-
<b>Airco refrigerants</b>					<b>67.1</b>
- Refrigerant - R22	1,810	kg CO <sub>2</sub> / kg	-	kg	-
- Refrigerant - R404a	3,922	kg CO <sub>2</sub> / kg	-	kg	-
- Refrigerant - R407c	1,774	kg CO <sub>2</sub> / kg	1	kg	1.42
- R-449A <sup>3</sup>	1,397	gwp	47	gwp	65.66
- Refrigerant - R410a	2,088	kg CO <sub>2</sub> / kg	-	kg	-
<b>Own car fleet, fuel use</b>					<b>454.5</b>
- Petrol	2,740	g CO <sub>2</sub> / litre	19,145	liter	52.5
- Diesel	3,230	g CO <sub>2</sub> / litre	124,467	liter	402.0
- LPG	1,806	g CO <sub>2</sub> / litre	-	liter	-
	CO <sub>2</sub> -emission factor <sup>1</sup>		2019 total		
	emission factor	Unit	Quantity	Unit	CO <sub>2</sub> -emission [metric ton]
<b>Scope 2: Indirect emissions</b>					<b>14,024.9</b>
<b>Purchased electricity</b>					<b>13,826.0</b>
- Grey electricity: 2010 and later	649	g CO <sub>2</sub> / kWh	21,293,004	kWh	13,819.2
- Mobility -Grey electricity: 2010 and later	649	g CO <sub>2</sub> / kWh	10,615	kWh	6.9
<b>Personal cars for business travel</b>					<b>17.0</b>
- Passenger car, unknown fuel type and weight	220	g CO <sub>2</sub> / vehicle km	77,471	km	17.0
<b>Business air travel</b>					<b>178.8</b>
- Distance < 700 km	297	g CO <sub>2</sub> /travellers km	68,769	travellers km	20.4
- Distance 700 - 2.500 km	200	g CO <sub>2</sub> /travellers km	300,077	travellers km	60.0
- Distance > 2.500 km	147	g CO <sub>2</sub> /travellers km	668,883	travellers km	98.3
<b>Business travel by public transport</b>					<b>3.0</b>
- High speed train	26	g CO <sub>2</sub> /travellers km	7,892	travellers km	0.2
- Public transport unknown category	36	g CO <sub>2</sub> /travellers km	78,852	travellers km	2.8



References

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

Scope 1	Ton CO <sub>2</sub>	%
Stationary combustion equipment	784.2	52.9%
Gasses	175.4	11.8%
Airco refrigerants	67.1	4.5%
Own car fleet	454.5	30.7%
<b>Tot</b>	<b>1,481.2</b>	
Scope 2	Ton CO <sub>2</sub>	%
Purchased electricity	13,819.2	98.5%
Mobility - electricity	6.9	0.0%
Personal cars for business travel	17.0	0.1%
Business air travel	178.8	1.3%
Business travel by public transport	3.0	0.0%
<b>Tot</b>	<b>14,024.9</b>	





### Annex 1 CO<sub>2</sub>-emissions 2019 scope 3

	CO <sub>2</sub> -emission factor <sup>1</sup>		2019 total		
	emission factor	Unit	Quantity	Unit	CO <sub>2</sub> -emission [metric ton]
<b>Scope 3: Other indirect emissions</b>					<b>1,073.9</b>
<b>Commuter travel with transportation not owned by the company</b>					<b>284.6</b>
<i>private cars</i>					284.6
- Passenger car, unknown fuel type and weight	220	g CO <sub>2</sub> / vehicle km	1,293,692	vehicle km	284.6
<i>Commuter travel with public transport</i>					
- Stopping train and Intercity	24	g CO <sub>2</sub> /travellers km	-	travellers km	0.0
<b>Waste disposal<sup>2</sup></b>					<b>789.2</b>
- Paper and paperboard	676	g CO <sub>2</sub> / kg	71,280	kg	48.2
- Plastic	120	g CO <sub>2</sub> / kg	537,692	kg	64.5
- Wood	-	g CO <sub>2</sub> / kg	156,445	kg	0.0
- Metal	1,060	g CO <sub>2</sub> / kg	15,520	kg	16.5
- Electrical and electronic tools	1,735	g CO <sub>2</sub> / kg	-	kg	0.0
- Hazardous substances	1,308	g CO <sub>2</sub> / kg	31,465	kg	41.2
- Unsorted waste	1,308	g CO <sub>2</sub> / kg	465,458	kg	608.8
- Construction and demolition waste	434	g CO <sub>2</sub> / kg	680	kg	0.3
- Other Waste	1,308	g CO <sub>2</sub> / kg	7,500	kg	9.8

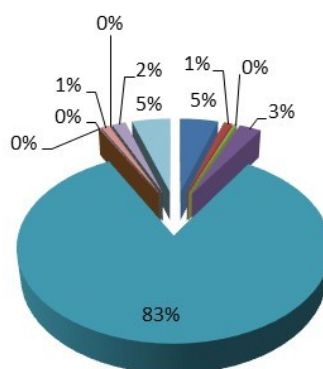
References

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



Scope 3	Ton CO <sub>2</sub>	%
Commuter travel with transportation not owned by the company	284.6	26.5%
Waste disposal	789.2	73.5%
<b>Tot</b>	<b>1,073.9</b>	

scope 1 - 2 - 3



- Stationary combustion equipment
- Gasses
- Airco refrigerants
- Own car fleet
- Purchased electricity
- Mobility - electricity
- Personal cars for business travel
- Business air travel
- Business travel by public transport
- Commuter travel with transportation not owned by the company
- Waste disposal

