

YEAR 11, NR. 2

16 JUNE 2021
REF.NR.: 21.R.0503

Carbon Footprint Analysis 2020

PIPELIFE

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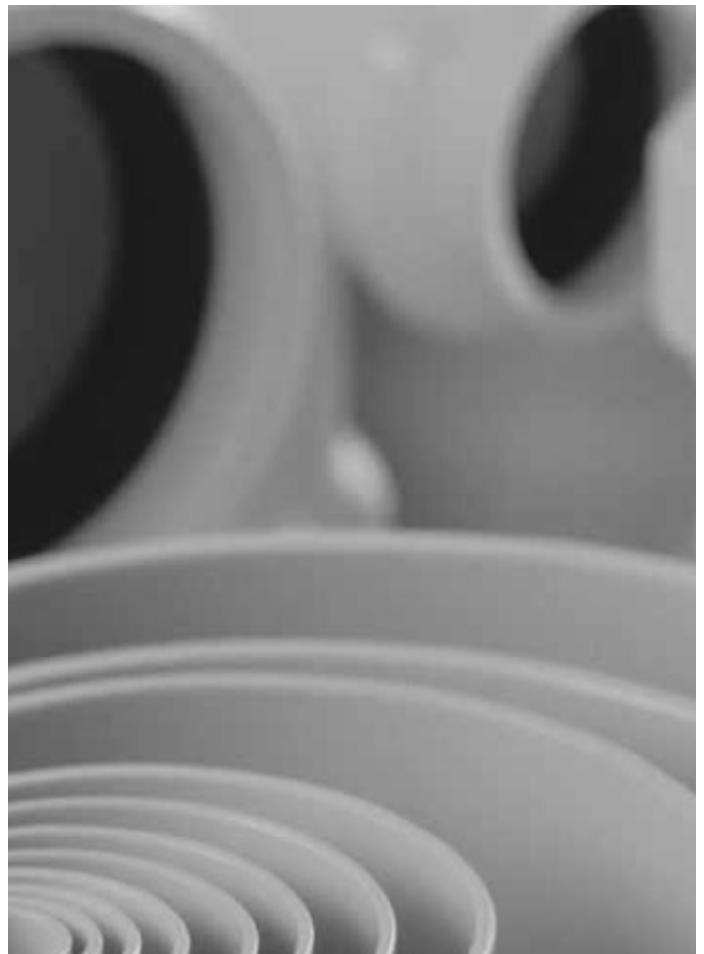
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Aart Jan van der Meijden
Managing Director Pipelife Nederland B.V.

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 CO₂ 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 "CO₂-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 CO₂-prestatieladder Manual 3.1
- said CO₂ 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 230 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 26 countries, with headquarters in Vienna, Austria. 2,700 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. 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 CO₂ (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 CO₂-production is taken: the own organization has control of this.

Based on the lateral purchase analysis of the CO₂-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.0304-3**).



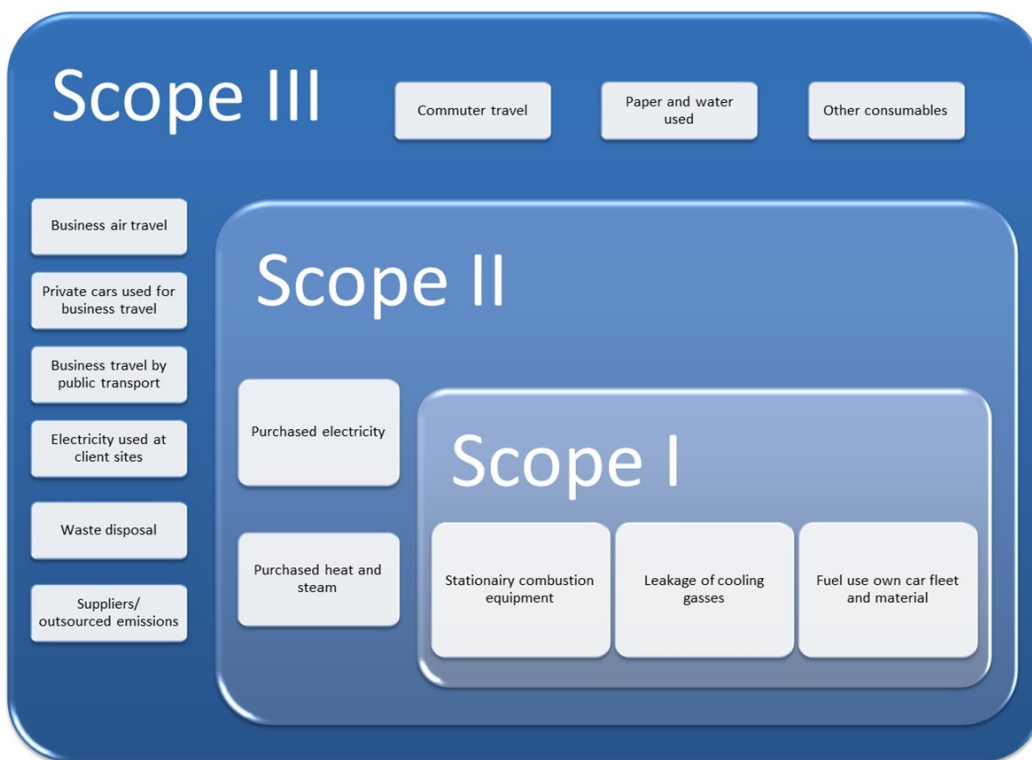
Carbon Footprint Analysis

Basis of analysis

CO₂-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.

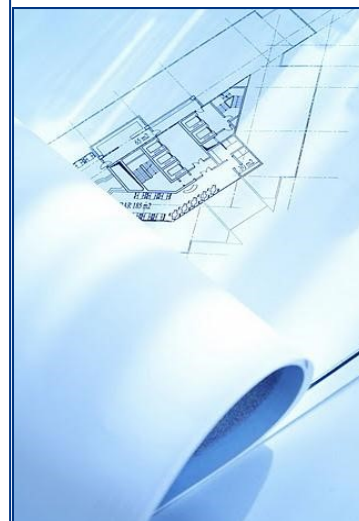
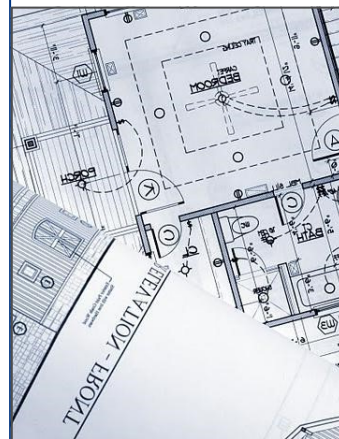
This carbon footprint analysis includes the CO₂-emissions (one of the six greenhouse gases) of Pipeline Nederland BV, in scope 1, 2 and 3 of the year 2020. The CO₂ emission is analyzed in accordance with the “CO₂ performance ladder”, manual 3.1 22 June 2020.



Measurement results and explanation

Reported period

Pipeline Nederland B.V. has synchronized its carbon footprint reporting period with its fiscal year. The fiscal year for Pipeline Nederland B.V. runs from January 1 to December 31. The reported period is the year 2020.



Scope 1: Direct CO₂-emissions

THE DIRECT CO₂ EMISSION IS MEASURED AND CALCULATED AS **1,245.3 TONNES CO₂**

Stationary combustion equipment

In 2020 420,690 m³ were used of natural gas. The consumption caused 792.6 tonnes of CO₂ emission (64% of the total direct emission). The natural gas is used for heating of the locations. 312,421 m³ was used in stationary combustion equipment in Enkhuizen (about 74% of the total consumption).

Gasses

In 2020 95.6 tonnes of CO₂ emission is caused by the usage of the gasses and CO₂ gasses for the production processes in the Netherlands and Germany.

Usage of refrigerant

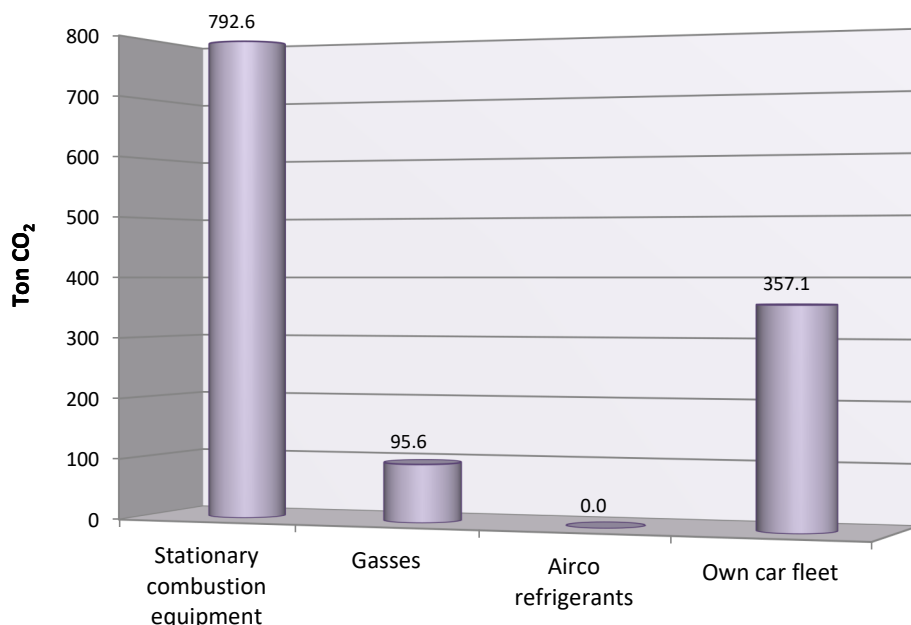
In 2020 there was no consumption of refrigerants in the production processes in Germany and cooling and freezing systems. The systems for storage and transportable air conditioning-units are regarded as a closed system. Therefore only CO₂-causing emissions of consumption are calculated and in this period 0 tonnes of CO₂ emission.

Fuel use own car fleet (business car travel)

In 2020 357.1 tonnes of the CO₂ emissions is assigned to the fuel consumption of the fleet with leased cars. In 2020 the leasing company has reported an usage of 92,963 litres diesel and 20,736 litres of petrol.



Direct CO₂ emission



Scope 1 sources

Statement of CO₂ sources and sinks omitted

All identified sources and sinks of CO₂ are included in the report. Storage of CO₂ does not occur; there are no sinks.

CO₂-emissions from burning biomass

The combustion of biomass did not occur at Pipelife Nederland B.V. or Pipelife Germany GmbH.

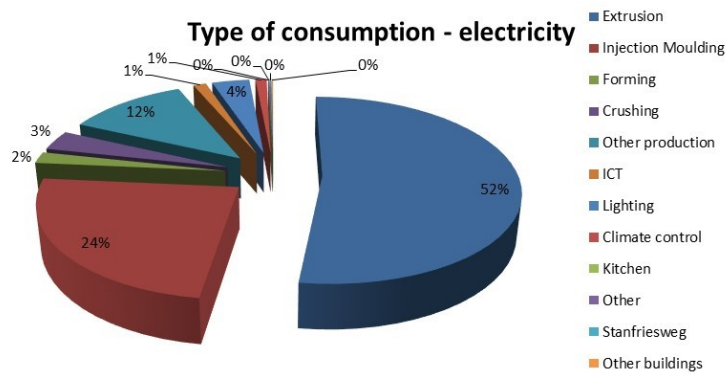
Scope 2: Indirect CO₂-emissions

INDIRECT CO₂-EMISSIONS MEASURED AND CALCULATED ARE 10,903.3 TONNES CO₂

Electricity purchased

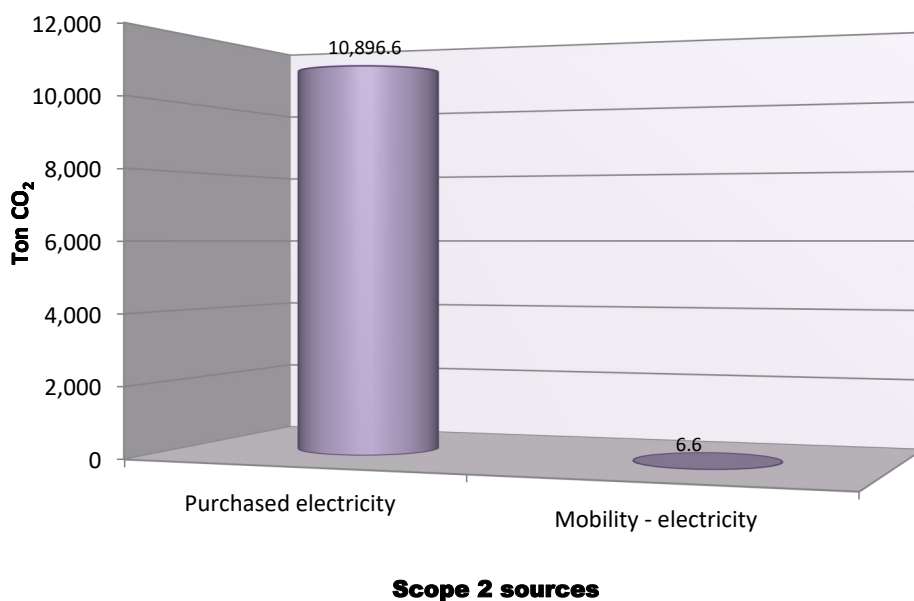
100,0% of the indirect CO₂ emission is caused by consumption of the repurchased electricity. In the reported period, the electricity consumption was in total 19,694,238 kWh, this is 10,903.3 ton CO₂ emission. 11,958 kWh was consumed by electric cars.

Under the terms of the CO₂-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 Molding caused 24% of the usage. Lighting caused 4% of the consumption.

Indirect CO₂ emission



Scope 3: Other Indirect CO₂-emissions

OTHER CO₂-EMISSIONS MEASURED AND CALCULATED ARE 1,061.2 TONNES CO₂

Other indirect CO₂-emissions

The most important other indirect CO₂ emissions are measured and calculated in this report. Due to the new requirements in CO₂ performance ladder manual version 3.1, the Carbon Footprint report is again calculated according to the Green House Gas Protocol. This means that the three energy flows for business transport are now part of scope 3. As part of the requirements of the manual, the energy flows for business transport are also examined every six months.

Business transport consists of the following three energy flows:

- 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 CO₂ emissions Pipelife Netherlands B.V. - CO₂ Performance Ladder due to the lack of reliable data on a half-year basis.

Personal cars for business travel

In 2020 several employees used their private car for business purposes and declared the mileage. The total mileage declarations by private car were 31,691 km in the reported period. This led to 6.2 ton CO₂, 0.1% of the other indirectly CO₂ emissions.

Business air travel

In 2020 employees made 477,462 flight kilometers for business purposes. 11% of the flights concerned flight distances between 0 – 700 km, 43% of the flights concerned flight distances between 700 – 2500 km and 46% of the flights concerned flight distances more than 2500 km. The air travel caused 83.0 ton CO₂, 0.8% of the other indirectly CO₂ emissions.

Business travel by public transport

In 2020 some employees used public transport for business purposes and declared the travel expenses. The total mileage declarations by public transport were 38.083 km in the reported period. This led to 1.4 ton CO₂.

Commuter travel

Commuter travel with transportation is not owned by the company. In 2020 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 1,516,090 km in the reported period. This led to 295.6 ton CO₂, 28% of the other indirectly CO₂ emissions.

Waste disposal

As a result of the Pipelife activities in the Netherlands and Germany, a total of 1,040.5 tonnes of waste was transported to the waste processors in 2020. Analysis shows that 10% of the waste streams are paper and cardboard, 34% is plastics waste, 15% is wood, 37% is unsorted waste, 3% is Hazardous waste streams and 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 59% of the total waste stream. The CO₂ emission as a result of the waste disposal caused 675.1 tonnes of CO₂ (64%) 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 CO₂ emission is caused by use of fuel in the stationary equipments (792.6 ton of CO₂, scope 1), the electricity consumption (10,903.3 ton of CO₂, scope 2) and waste disposal (675.1 ton of CO₂, 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 CO₂ 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 CO₂ emission for electricity is calculated with the conversion factor of grey electricity for this period.

SCOPE 3:

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 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.

CO₂-compensation

Most resources are used to make improvements within the production processes in the framework of the CO₂-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 CO₂ emissions is established.

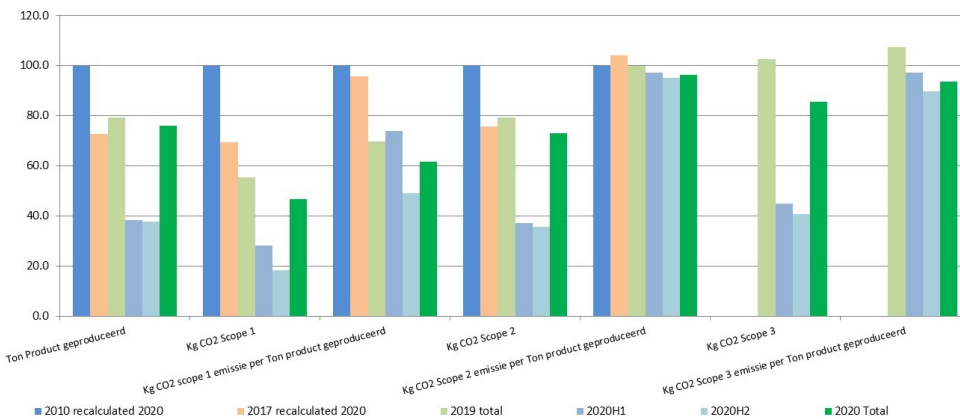
Adjustments to historical year

For this report of 2020 there were adjustments to the base year. Because of the publication of the version 3.1 of the CO₂ performance ladder manual the scope classification has been changed and the CO₂ emission factors are changed again in January 2020. 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 2016 because of the latest reduction goals period 2017-2022.

Normalization measurements

The size of the CO₂ 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 CO₂ performance ladder version 3.1 is published. Also because of the publication of changed CO₂ 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.



In scope 1 the CO₂ emissions par kg product produced decreased in 2020. Compared to the same period in 2017 the CO₂ emissions for scope 1 in 2020 are 30.3% lower.

The usage of stationary combustion equipment showed a further reduction to that period of 2019. Since 2017 almost 50,000 m³ gas has already been saved. The usage of refrigerant is seasonal and must be analysed on yearly basis. The usage of refrigerant in 2020 reduced to 100% compared to 2017. In 2020 the refrigerant was replaced in a cooling installation, whereby a more environmentally friendly R449A quality was deliberately chosen. The usage of CO₂ gasses increased due to changes in the productmix. The litres of fuel for the own car fleet reduces further in 2020 due to actions and partly also due to the covid-19 effects. Compared to the same period in 2017 the reduction is more than 32.500 litres and shows a reduction of more than 108 tonnes CO₂.

The absolute CO₂ emissions for scope 2 in 2020 compared to the same period in 2017 were slightly lower to 3.4% due to energy reduction measures, for example solar panels on the location



in Enkhuisen by further increasing product volume produced in the Netherlands and 13.9% due to changed CO₂ emission factors for grey electricity. The emission for business air travel and personal cars for business travel in 2020 were significantly lower than in the comparable period of 2017 and 2019, but commuter travel increased.

The scope 3 emissions per ton product produced were more than 6% lower in 2020 compared to the baseyear 2018, after the increase of the emissions in 2019. For the calculation of all the scope 3 emissions see our Pipelife Netherlands - Scope 3 inventory CO₂ emissions which is updated yearly.

In 2020 the actions continues as described in our Energy Efficiency plan (EEP) plan for the MJA 3 program. 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 CO₂ performance ladder our reduction targets were actualised till 2022 and expanded with scope 3 targets. The reduction goals per ton product produced are still on target, but challenging. The effects of the changed CO₂ emission factors will be analysed on yearly basis and decisions about adjustment of targets will be made after the completion of the period 2020.

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 CO₂ 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 CO₂ 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 CO₂ emission, the project therefore causes an emission of approx. 193 tonnes CO₂ during the current contracted period. The expected reductions for this project are therefore estimated at 7 tonnes of CO₂.

Calculation models

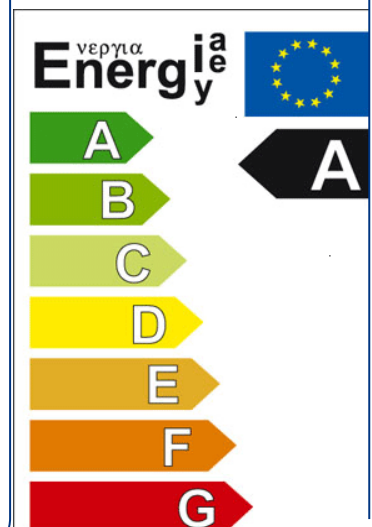
Quantification methods

The quantification of raw materials to CO₂ 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 2020 is the twentieth 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 CO₂ emissions for the period 2017-2022 for scope 1, 2 and 3.

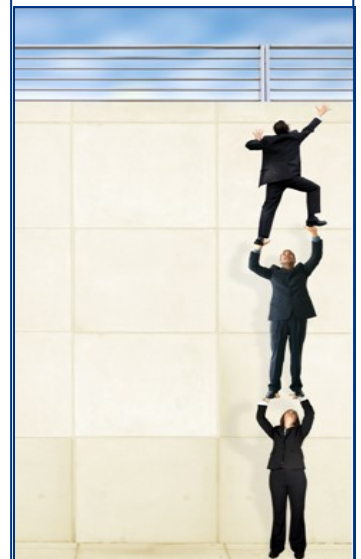
The first target is to reduce the direct emissions per Kg product produced by improvements to the roof of the factory in Enkhuizen and change our forklifts from diesel to electric. Next to these reduction targets several investigations in the Netherlands and Germany are in progress to gain knowledge 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 CO₂-emissions for the period 2017 till 2022 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: 0.11%, scope 2: 6.8% and scope 3: 5.1%.

Nr. Reduction target CO ₂	Total reduction 2017-2022 (%)	CO ₂ -emission 2022	
		Reduction (Tonnes CO ₂)	(par ton product produced)
Implementation Energy Efficiency Plan scope 1 measures	0,11%	2,3	61,9
Index CO₂-emission scope 1	0,1%	2,3	99,9
Implementation Energy Efficiency Plan scope 2 measures	6,8%	960,3	389,8
Index CO₂-emission scope 2	6,8%	960,3	93,2
Implementation Energy Efficiency Plan scope 3 measures	5,1%	4.318,0	2.351,8
Index CO₂-emission scope 3	5,1%	4.318,0	94,9
Index CO₂-emission scope 1 and 2	5,9%	962,6	94,1
Index CO₂-emission scope 1, 2 en 3	5,2%	5.280,6	-5,2





Annex 1 CO₂-emissions 2020 scope 1 and 2

	CO ₂ -emission factor ¹		2020 total		
	emission factor	Unit	Quantity	Unit	CO ₂ -emission [metric ton]
Scope 1: Direct emissions					1,245.3
Stationary combustion equipment					888.2
- Natural gas	1,884	g CO ₂ / Nm ³	420,690	Nm ³	792.6
- Butane ²	3,143	g CO ₂ / kg	-	kg	-
- Propane	1,725	g CO ₂ / litre	135	litre	0.2
- CO ₂ gasses ²	1,000	g CO ₂ / kg	95,354	kg	95.4
- Acetylene ²	3,385	g CO ₂ / kg	-	kg	-
- Protegon ²	395	g CO ₂ / Nm ³	-	m ³	-
- Sagox 18 ²	195	g CO ₂ / Nm ³	33	m ³	0.0
Airco refrigerants					-
- Refrigerant - R22	1,810	kg CO ₂ / kg	-	kg	-
- Refrigerant - R404a	3,922	kg CO ₂ / kg	-	kg	-
- Refrigerant - R407c	1,774	kg CO ₂ / kg	-	kg	-
- R-449A ³	1,397	gwp	-	gwp	-
- Refrigerant - R410a	2,088	kg CO ₂ / kg	-	kg	-
Own car fleet, fuel use					357.1
- Petrol	2,740	g CO ₂ / litre	20,736	liter	56.8
- Diesel	3,230	g CO ₂ / litre	92,963	liter	300.3
- LPG	1,806	g CO ₂ / litre	-	liter	-
	CO ₂ -emission factor ¹		2020 total		
	emission factor	Unit	Quantity	Unit	CO ₂ -emission [metric ton]
Scope 2: Indirect emissions					10,903.3
Purchased electricity					10,903.3
Total used electricity			19,694,238	kWh	
own generated solar electricity			95,982	kWh	
- Grey electricity: 2010 and later	556	g CO ₂ / kWh	19,598,256	kWh	10,896.6
- Mobility -Grey electricity: 2010 and later	556	g CO ₂ / kWh	11,958	kWh	6.6

References

1: Source: website CO₂emissiefactoren.nl

2: Source: BI-conversion calculations 2010



Scope 1	Ton CO ₂	%
Stationary combustion equipment	792.6	63.6%
Gasses	95.6	7.7%
Airco refrigerants	-	0.0%
Own car fleet	357.1	28.7%
Tot	1,245.3	
Scope 2	Ton CO ₂	%
Purchased electricity	10,896.6	99.9%
Mobility - electricity	6.6	0.1%
Tot	10,903.3	

Annex 1 CO₂-emissions 2020 scope 3

	CO ₂ -emission factor ¹		2020 total		
	emission factor	Unit	Quantity	Unit	CO ₂ -emission [metric ton]
Scope 3: Other indirect emissions					1,061.2
Business travel					90.5
Personal cars for business travel					6.2
- Passenger car, unknown fuel type and weight	195	g CO ₂ / vehicle km	31,691	km	6.2
Business air travel					83.0
- Distance < 700 km	297	g CO ₂ /travellers km	30,350	travellers km	9.0
- Distance 700 - 2.500 km	200	g CO ₂ /travellers km	155,032	travellers km	31.0
- Distance > 2.500 km	147	g CO ₂ /travellers km	292,080	travellers km	42.9
Business travel by public transport					1.4
- Intercity	0	g CO ₂ /travellers km	-	travellers km	-
- Stopping train and Intercity	0	g CO ₂ /travellers km	-	travellers km	-
- High speed train	26	g CO ₂ /travellers km	1,235	travellers km	0.0
- Public transport unknown category	36	g CO ₂ /travellers km	36,848	travellers km	1.3
Commuter travel with transportation not owned by the company					295.6
<i>private cars</i>					<i>295.6</i>
- Passenger car, unknown fuel type and weight	195	g CO ₂ / vehicle km	1,516,090	vehicle km	295.6
<i>Commuter travel with public transport</i>					
- Train unknown category	6	g CO ₂ /travellers km	-	travellers km	0.0
Waste disposal²					675.1
- Paper and paperboard	676	g CO ₂ / kg	98,890	kg	66.8
- Plastic	120	g CO ₂ / kg	353,405	kg	42.4
- Wood	-	g CO ₂ / kg	151,120	kg	0.0
- Metal	1,060	g CO ₂ / kg	8,820	kg	9.3
- Elektrical and electronic tools	1,735	g CO ₂ / kg	-	kg	0.0
- Hazardous substances	1,308	g CO ₂ / kg	28,353	kg	37.1
- Unsorted waste	1,308	g CO ₂ / kg	385,050	kg	503.6
- Construction and demolition waste	434	g CO ₂ / kg	4,340	kg	1.9
- Other Waste	1,308	g CO ₂ / kg	10,575	kg	13.8



References

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



scope 1 - 2 - 3

