



*Rely on it.*

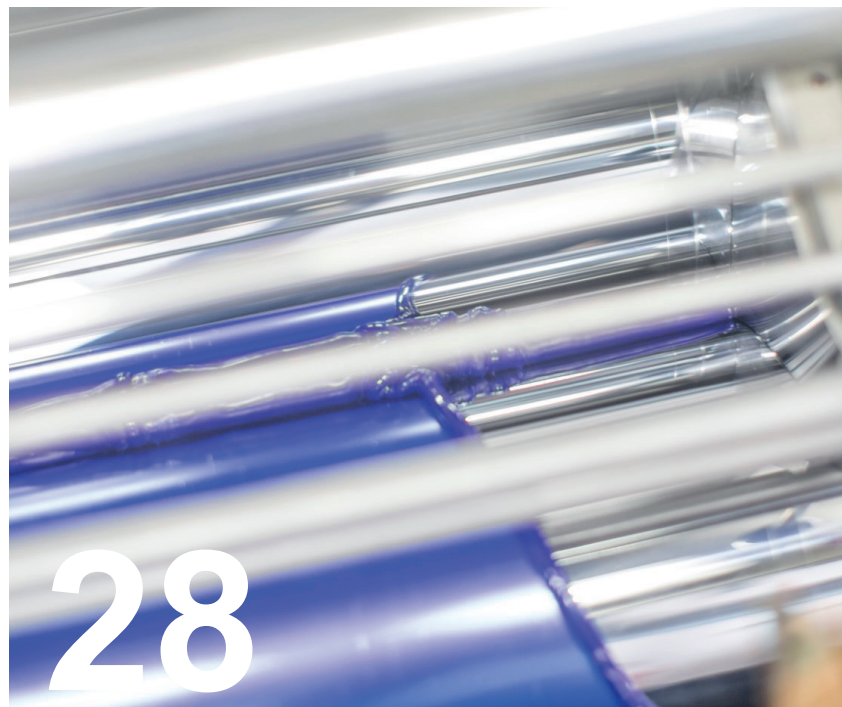
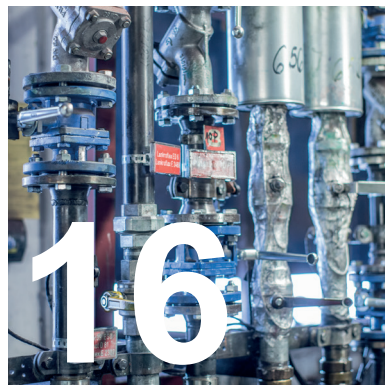
# **RENOLIT Milano S.r.l.**

Analysis of Environmental Performance  
from a life-cycle perspective - 2022

A close-up photograph of a vibrant green leaf with several clear water droplets resting on its surface. The background is a soft, out-of-focus green.

**TAKING  
ACTION FOR  
TOMORROW**





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## RENOLIT Milano S.r.l.

The core business of **RENOLIT Milano S.r.l.** consists in providing calendered and painted polyvinyl chloride (PVC) sheets for the furniture industry.

The manufacturing facility was built in Peschiera Borromeo in 1956 and was originally managed by the company Europlastic Srl. On 07/01/2009 the business unit was first sold to EUROGLOSS SRL, which in turn (on 29/09/2010) ceded it to RENOLIT Milano S.r.l, now responsible for all manufacturing at the facility.

Since 2020 **RENOLIT Milano S.r.l.** operates according to an environmental management system certified to UNI EN ISO 14001: 2015 standard.

The manufacturing process consists in PVC extrusion by means of extruders or calenders to obtain a high-quality sheet, blended with additives and pigmented, intended for use in coverings for furnishings. These sheets can be applied “as is” or undergo further processing treatments.

75



Average number of employees in 2022

3.886

Tons of PVC film made in 2022

16.689

square meters of site surface area, of which 13,978 sq.m are indoors



### RENOLIT Milano S.r.l.

Via Giuseppe di Vittorio 2/4,  
20068 Peschiera Borromeo (MI)  
Italy

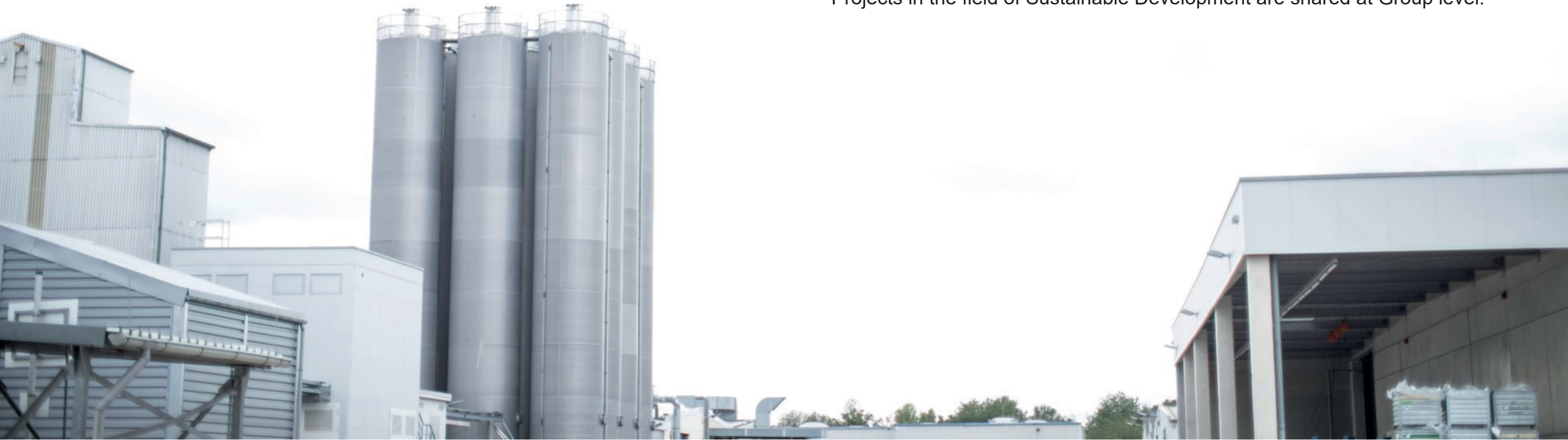


## RENOLIT GROUP

All over the world, the **RENOLIT** brand stands for technical competence, modern product design and cooperative service: our products are designed to enhance, insulate, protect, and stabilize surfaces, as well as offer many other benefits. As an independent, family-owned, international company and reliable business partner and employer, we aim to ensure lasting business success.

With our decorative, high-quality and sustainable plastic products we create clear added value for our customers, improving the quality of life for many. With more than 30 production plants across four continents, **RENOLIT** is a global player in the field of coating films. Every one of our plants features specific expertise relating to the manufacture of **RENOLIT** plastic products. Manufacturing to the highest standards and growing our employees' know-how ensure consistently high and reliable quality products are provided at all locations.

Projects in the field of Sustainable Development are shared at Group level.







## OBJECTIVES

This environmental performance analysis was conducted in accordance with the internationally recognized technical standards for Life Cycle Assessments.

The scope of the analysis was defined on the basis of the production of PVC films carried out at the Peschiera Borromeo (MI) site in 2022.

The Organization's first-level environmental impacts, divided into Upstream and Downstream phases, were also considered.

The analysis enabled us to fully understand the environmental impact of the manufacturing activity at **RENOLIT Milano S.r.l.** The findings allowed us to identify opportunities for improvement and to outline a plan for achieving these objectives.

The proposed methodology has been applied for the reporting of environmental performance since 2020, this report represents the 3rd year of reporting

This report is to be viewed by all stakeholders as a document aimed at promoting the company's commitment towards safeguarding the environment.

“ Within a constantly evolving sector such as the plastics supply chain, RENOLIT Milano S.r.l. seeks to make its contribution to the promotion of concrete actions for the protection of the environment ”





## UPSTREAM PHASE

<b>RAW MATERIALS</b>	Quantity of sourced raw materials Emissions of CO <sub>2</sub> eq. PVC powder production
<b>SEMI-FINISHED GOODS</b>	Quantity of sourced semi-finished goods
<b>AUXILIARY MATERIALS</b>	Quantity of sourced auxiliary materials Hazardous properties of auxiliary materials
<b>RAW MATERIAL PACKAGING</b>	Packaging of raw materials/ semi-finished goods / auxiliary materials
<b>RAW MATERIAL TRANSPORT</b>	Suppliers of raw materials/ semi-finished goods / auxiliary materials Location of Supplier's business premises Mode of transport Number of journeys made and km covered Emissions of CO <sub>2</sub> eq. for transporting the sourced materials

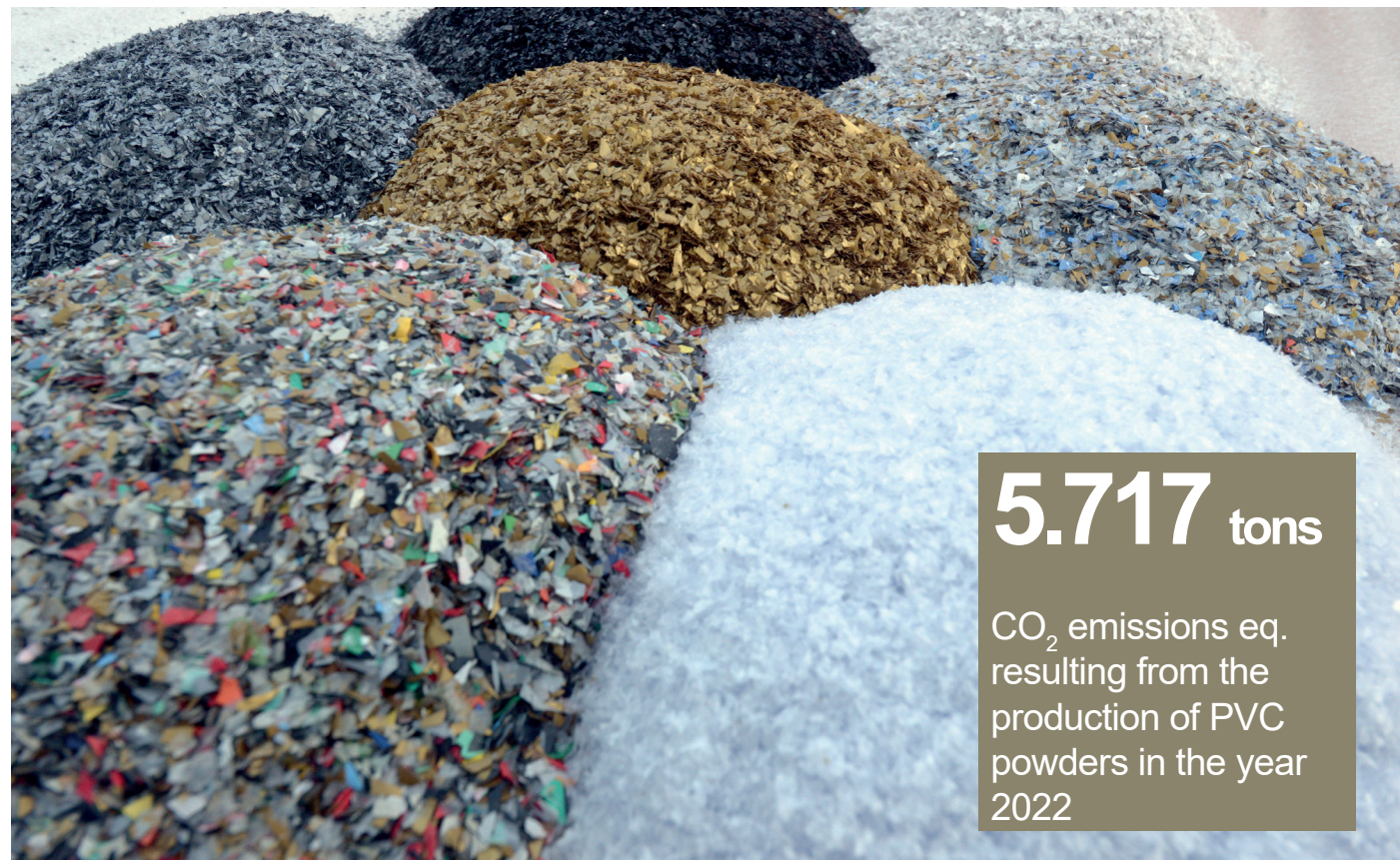




## RAW MATERIALS

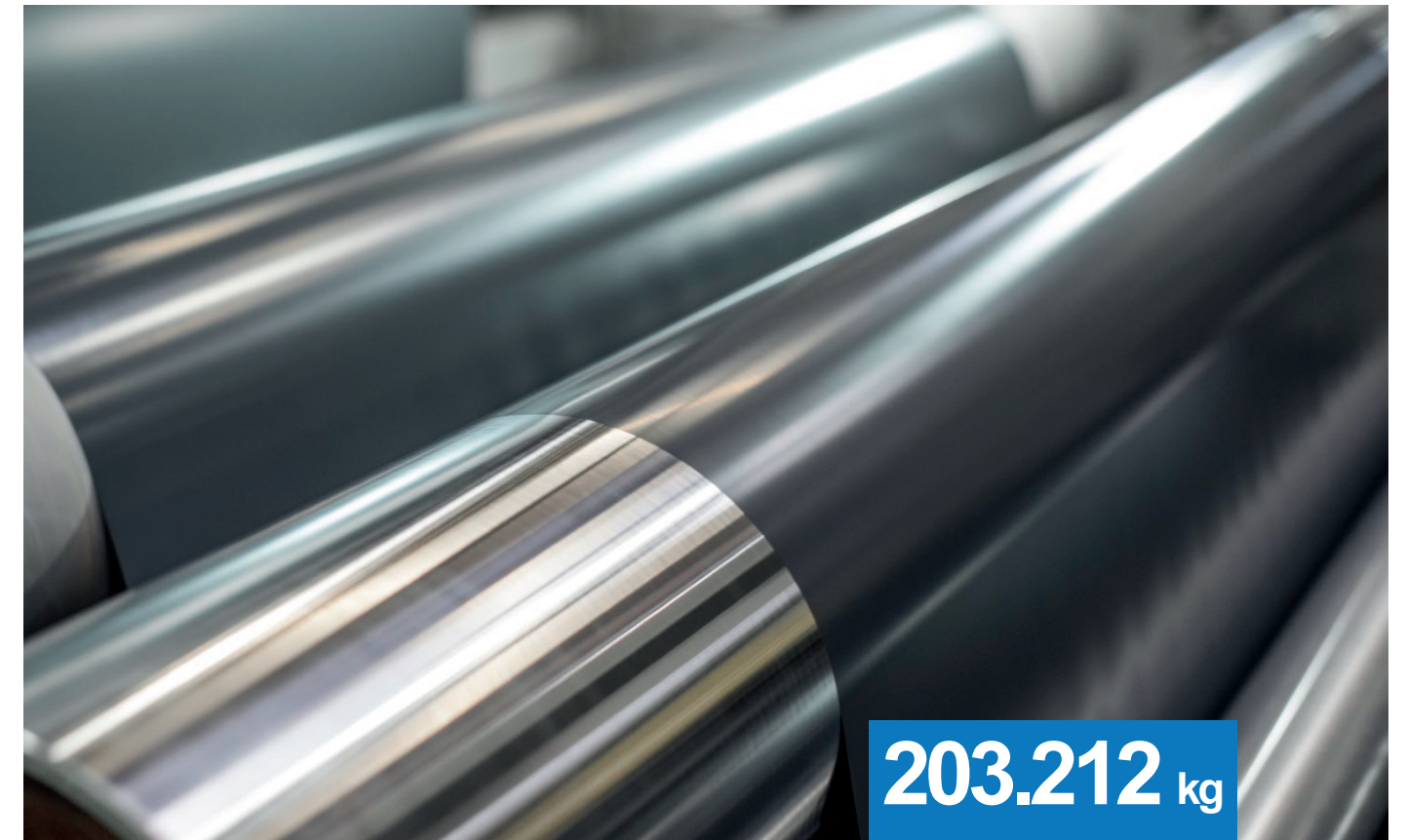
For the extrusion of PVC films, **RENOLIT Milano S.r.l.** uses the following raw materials:

Raw Materials	u.m.	2022
PVC resins (powder)	kg	2.872.965
Processing additives	kg	890.335
Pigments	kg	8.424
Plasticizers	kg	38.850
Stabilizers	kg	56.545



## SEMI-FINISHED PRODUCTS

The only type of semi-finished product used in the manufacturing process is the polyethylene film which is placed onto the extruded PVC sheet to prevent the surface of the PVC film from being damaged during the manufacturing processes.














In 2022, finished PVC films were purchased from other **RENOLIT** plants, for a total of 25.464 kg, amounting to only 1% of the PVC films sold by **RENOLIT Milano S.r.l.** that year.



## AUXILIARY MATERIALS

The quantities of auxiliary chemicals for production used in 2022 were considered; there are summarized in the table below, together with the relevant hazard information.

Auxiliary materials	u.m.	2022	Hazard signs
Inks	kg	475	 
Solvents	kg	68.872	 
Solvent-based paints	kg	87.798	  
Solvent-free paints	kg	7.400	 
Primer	kg	9.696	 



## RAW MATERIAL PACKAGING

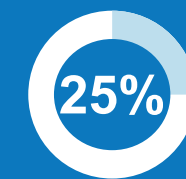
As for the packaging of the raw materials procured, these were sourced from the packaging waste produced by the site. The end of life of each packaging material was also taken into consideration.

Materials	u.m.	2022	End of life
Wood packaging (EWC 15.01.03)	kg	26.420	Refusal to recover
Mixed material packaging (EWC 15.01.06)	kg	50.440	Refusal to recover
Packaging contaminated by dangerous substances (EWC 15.01.10*)	kg	11.836	Refusal to recover
IBC tank (1.000 L) for solvents and thinners	n.	11	Returned to manufacturer

### IMPROVEMENT ACTION

In an effort to reduce the volumes of packaging waste, the coating varnish with a glossy effect used for the PVC sheet could be stored in 500 kg IBC tanks, which can then be returned to the manufacturer and reused. Currently, these varnishes are supplied in 20 L plastic drums which must be disposed of as special hazardous waste (EWC 15.01.10 \*) for up to 120 pallets/year. In this way, the amount of waste could be significantly reduced and its transport would be cut by about 10 trucks (truck + trailer) per year.

PROGRESS STATUS:



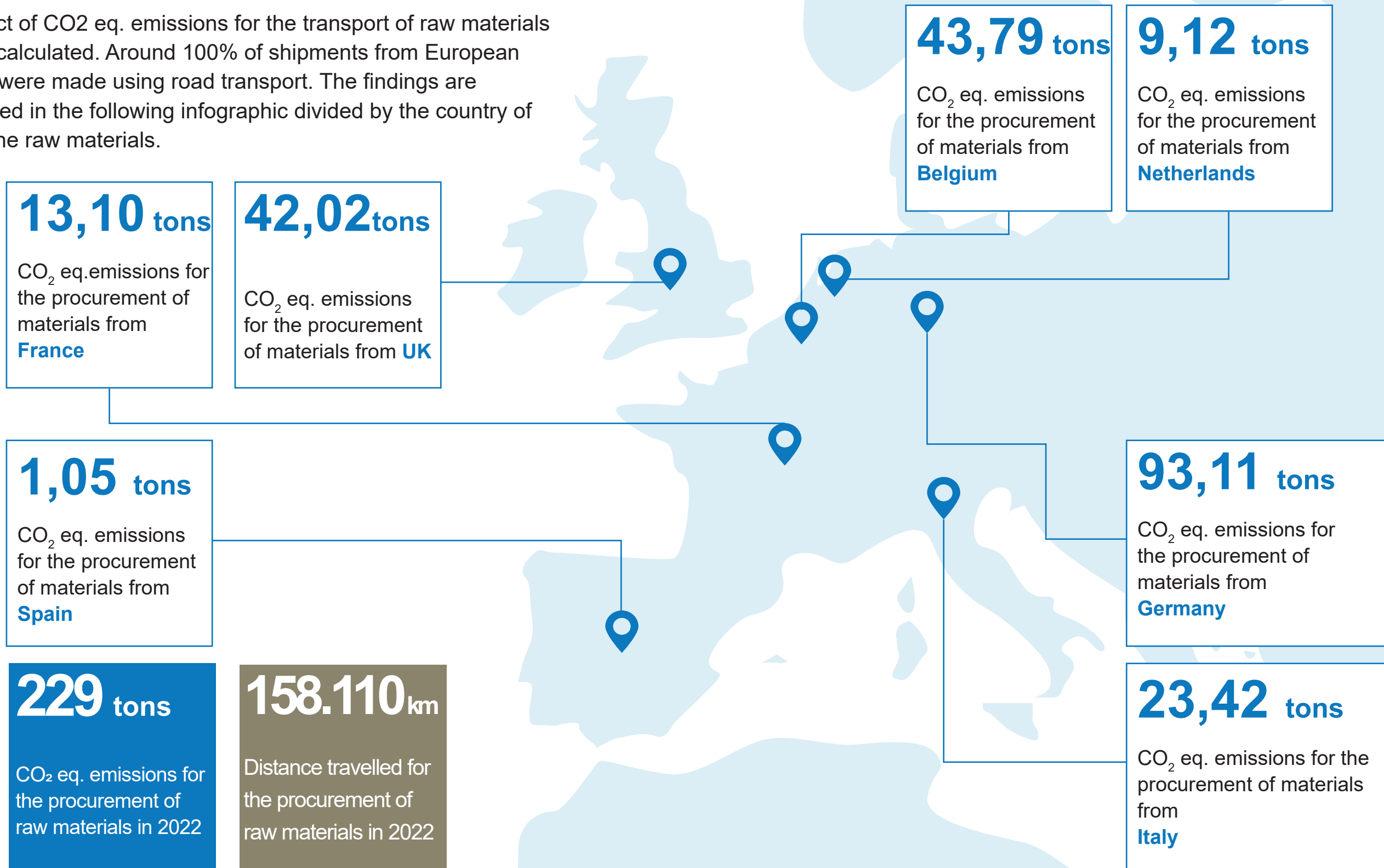
TARGET IMPLEMENTATION DATE: 2024





## RAW MATERIAL TRANSPORT

The impact of CO<sub>2</sub> eq. emissions for the transport of raw materials was also calculated. Around 100% of shipments from European suppliers were made using road transport. The findings are summarized in the following infographic divided by the country of origin of the raw materials.





## CORE PHASE

### INLET WATER

Water intake (process, residential use, osmosis)

### WATER DISCHARGES

Water discharges (volumes for cooling, volumes for residential use)

### EMISSIONS INTO THE ATMOSPHERE

Emission points - plants

Pollutants released into the atmosphere

Pollutant concentrations

Mass flows

Plant operating hours

Pollutant mass balance

### EMISSIONS INTO THE ATMOSPHERE - FGAS

List of equipment containing F-gas

Type of gas contained

Quantities of gases

Emissions of CO<sub>2</sub> eq. from coolant gas leaks

### ELECTRIC POWER

Electric power procured from the grid (kWh)

% electric power from renewable sources procured from the grid

Natural gas consumption (m<sup>3</sup>)

Emissions of CO<sub>2</sub> eq. from the consumption of electric power

Emissions of CO<sub>2</sub> eq. from the consumption of natural gas

### FUELS

Fuels used (diesel for company cars)

Emissions of CO<sub>2</sub> eq. from fuel consumption

### FINISHED PRODUCT PACKAGING

Packaging from finished products

### MANUFACTURING WASTE

Quantities of manufacturing waste

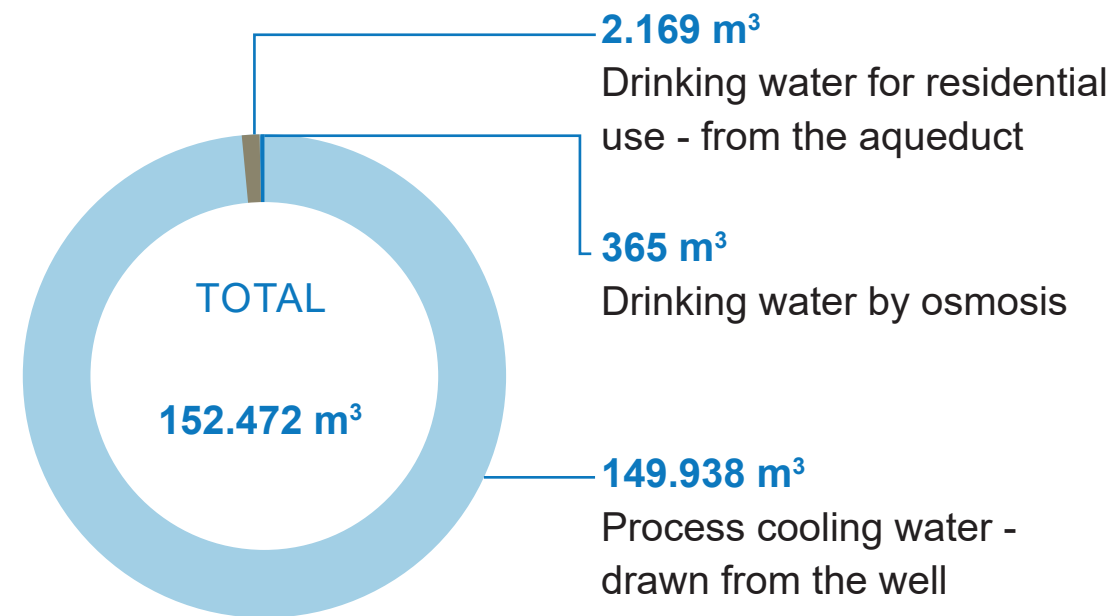




## INLET WATER

RENOLIT Milano S.R.L. does not use water for production purposes, so the only water consumption relating to the manufacturing process derives from the cooling water drawn from the well.

Below is a breakdown of water consumption for 2022.



### IMPROVEMENT ACTION

The company is currently studying the feasibility of optimizing the consumption of water drawn from the well, by adopting recirculating cooling water systems.

PROGRESS STATUS:

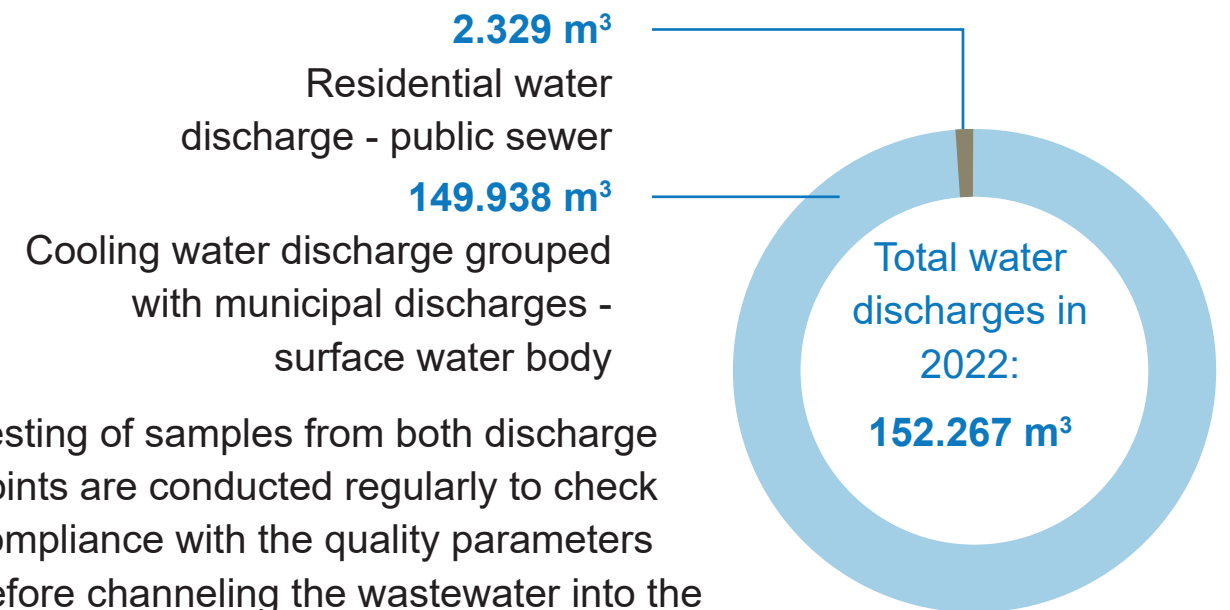


TARGET IMPLEMENTATION DATE: 2025



## WATER DISCHARGES

The Peschiera Borromeo site produces residential water discharges, which are conveyed into the public sewer system, and cooling water discharges which flow into the surface water body.



Testing of samples from both discharge points are conducted regularly to check compliance with the quality parameters before channeling the wastewater into the sewer or into the surface water body.

All the surveyed parameters are well below the limit values.





## EMISSIONS INTO THE ATMOSPHERE

At the site there are 42 atmospheric emission points, all listed in the Integrated Environmental Authorization.

As required by the Authorization, the company periodically undertakes self-inspection testing to verify compliance with the emission limit values of each pollutant. All the parameters surveyed are well below the limit values both in terms of concentration and mass flows.

The mass balance of each of the pollutants released into the atmosphere in 2022 was calculated, as follows:

### IMPROVEMENT ACTION

The company plans to replace solvent-based paints with water-based paints in order to significantly reduce the release of solvents into the atmosphere. Production tests have been conducted with positive results, to the point that project validation by in-house/external testing laboratories is currently pending.

### PROGRESS STATUS:



TARGET IMPLEMENTATION  
DATE: 2025

Pollutant type	Quantity 2022 (kg)
Total dusts	360,6
Chlorine and organic compounds (HCl)	25,9
Vinyl chloride	26,4
Carbon monoxide	18,0
Formaldehyde	48,1
NOx	4.074,5
Volatile organic substances	1.611,3
Total NMVOCs - CH4 (non-methane volatile organic compounds)	481,1



## EMISSIONS INTO THE ATMOSPHERE - F-GAS

As for refrigerant gases, these are used for air conditioning of buildings and to monitor the temperature of cooling water.

Below is a list of refrigerant gas types and their quantities on site. In 2022, no refrigerant gas leaks were recorded, and nor were gas replenishments carried out.

Type of refrigerant gas	Quantity (kg)	Quantity replenished in 2022 (kg)	Emissions of CO <sub>2</sub> eq. from Fgas replenishment (tonnes)
R 22	6,70	0	0
R 32	6,78	0	0
R 407C	100,00	0	0
R 410A	15,18	0	0



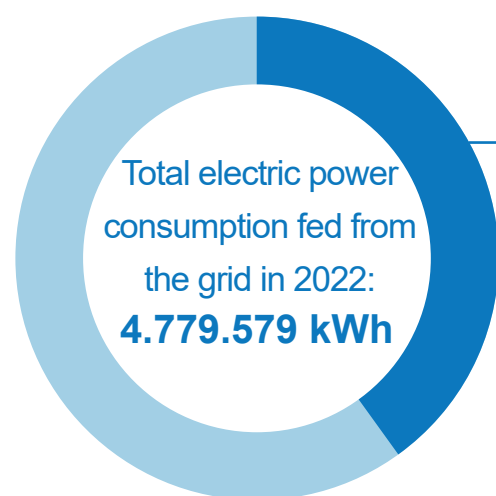




## ELECTRIC POWER

Energy consumption is an essential feature for the work carried out at the site, since the production machinery is powered exclusively by electricity. All electric power is provided from the grid.

Below the detail of electrical consumption for 2022.



**2.190.003 kWh**  
Electric power provided from renewable sources (45,82%)

**1.907 tons**

Emissions of CO<sub>2</sub> eq. deriving from the consumption of electric power fed from the grid in 2022 (Scope 2 emissions - market based)

## IMPROVEMENT ACTION

In 2022, the compressor currently serving the compressed air system will be replaced with a more energy efficient model. The improvement of energy efficiency will be seen in 2024.

Post-poned to 2024 due to instability of market.

PROGRESS STATUS:



TARGET IMPLEMENTATION DATE: 2024



## NATURAL GAS

Natural gas is used for diathermic oil heating in order to reach the high temperatures necessary to perform calendering operations.

Natural gas is also used to heat buildings.

**726.928 Sm<sup>3</sup>**

Natural gas consumption in 2022

**1.447 tons**

Emissions of CO<sub>2</sub> eq. from the consumption of natural gas procured in 2022

## FUELS

Fuel consumption for company-owned vehicles was considered, and the relevant CO<sub>2</sub> equivalent emissions were calculated.

**2.084 L**

diesel fuel used for vehicles in 2022

**5,57 tons**

Emissions of CO<sub>2</sub> eq. from combustion of diesel fuel in 2022



## FINISHED PRODUCT PACKAGING

The total volumes of materials consumed for the packaging of finished products in the year were quantified both in terms of the total volumes of materials used in the year 2022, and of the average composition of a single packaging:

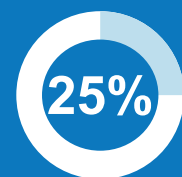
Materials used	u.m.	2022	Single packaging material	u.m.	2022
Pallets	kg	191.669	1 Pallets	kg	27,00
Beams	kg	73.094	4 Beams	kg	24,00
Wooden flanges	kg	92.535	8 Wooden flanges	kg	24,00
Plastic film	kg	5.855	Plastic film	kg	3,00

### IMPROVEMENT ACTION

At a corporate level, the wooden flanges are set to be replaced by cardboard boxes; this alternative solution would significantly reduce the weight of the individual package with advantages in terms of transport emissions. A feasibility study is currently underway.

Due to the pandemic, this goal was postponed to 2025. Compliant to OneRenolit Strategy.

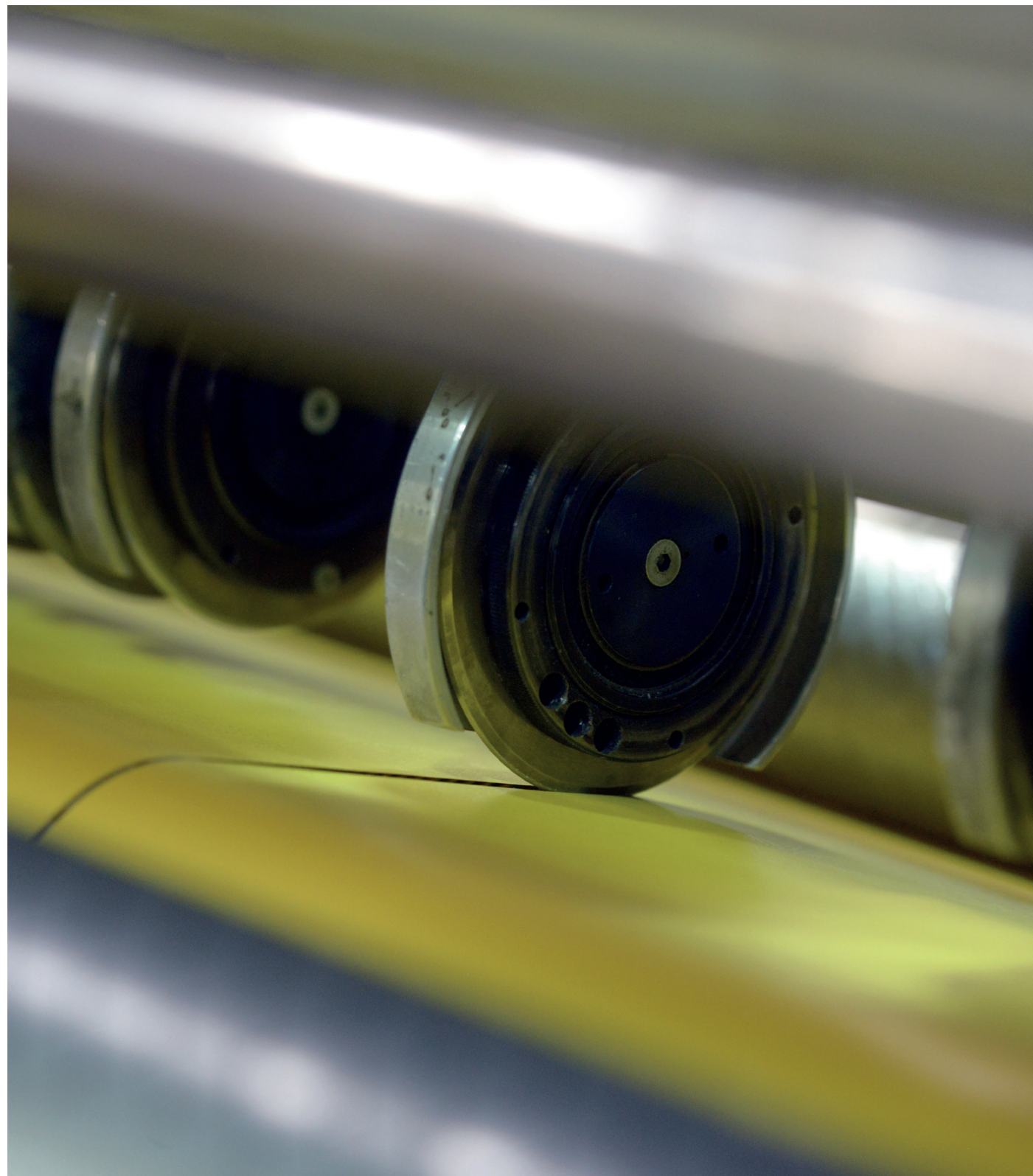
PROGRESS STATUS:



TARGET IMPLEMENTATION DATE: 2025

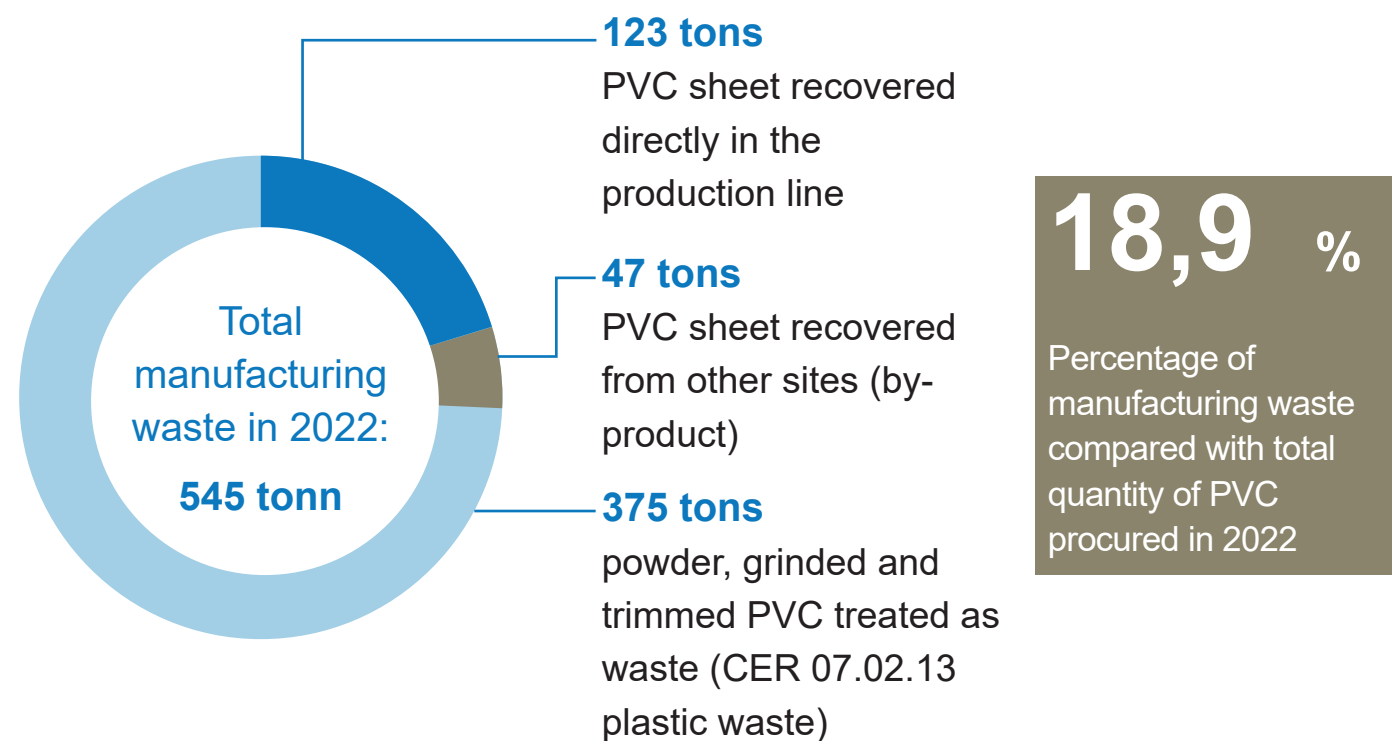






## MANUFACTURING WASTE

The amount of manufacturing waste, which mainly comes from the trimming of PVC sheets, was quantified. Manufacturing waste is divided into:



### IMPROVEMENT ACTION

Through the “Renolit Goes Circular” project, the Renolit Group aims to achieve zero waste passed on to third parties by 2025.

With a view to circular economy, the waste produced in each manufacturing site will be reused internally within the group.

The project continued throughout 2021, in particular seeing a marked increase in multi-site collaboration. In 2022 scrap were reduced by 25%

PROGRESS STATUS:



TARGET IMPLEMENTATION DATE: 2025





## DOWNSTREAM PHASE

### WASTE

List of waste produced, sorted by EWC code

Amount of waste produced, sorted by EWC code

Waste treatment (recovery/disposal)

% Hazardous waste

% waste for recovery

### WASTE TRANSPORT

List of disposal points, sorted by EWC code

Disposal point location and distance from  
RENOLIT Milano S.r.l.

Number of journeys made

Total km covered for waste transport

Emissions of CO<sub>2</sub> eq. due to waste transport

### TRANSPORT OF THE FINISHED PRODUCT

Location of main customers (by area)

Mode of transport

Total km covered for product delivery

Emissions of CO<sub>2</sub> eq. for the transport of  
finished products

### END-OF-LIFE

Evaluations on appropriate disposal at the  
product's end-of-life.

Average lifespan of the product







## WASTE

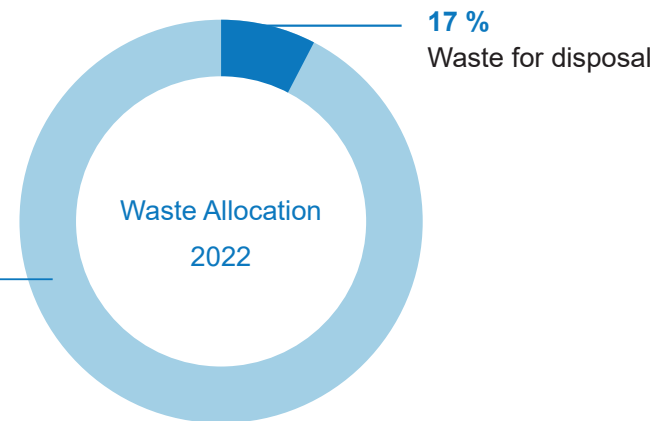
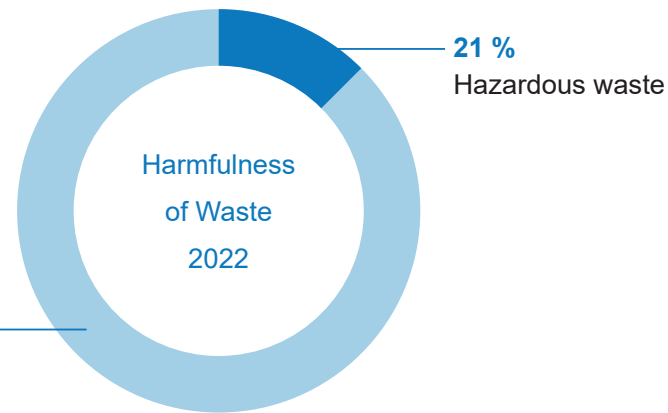
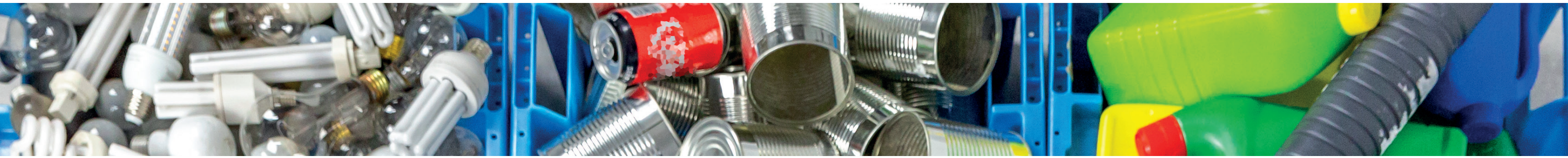
Below is a breakdown of the quantities of waste produced in 2022. For each waste category, the end-of-life operations carried out (waste recovery or disposal) and their potential harmfulness are given.

Code EWC	Description	Hazardous	Treatment	Quantity 2022 (kg)
070213	plastic waste	No	Recovery	374.349
080111*	waste from paints and varnishes containing organic solvents or other hazardous substances (liquid)	Yes	Disposal	4.103
			Recovery	1.150
080318	waste printing toner	No	Recovery	10
120107*	halogen-free machine oil	Yes	Recovery	379
130803*	other emulsions	Yes	Recovery	151
			Recovery	12.838
130802*	other emulsions	Yes	Disposal	79.490
			Recovery	10.635
140603*	other solvents and solvent mixtures	Yes	Disposal	8.950
			Recovery	16.690
150102	plastic packaging	No	Recovery	16.690
150103	wood packaging	No	Recovery	26.420
150106	mixed material packaging	No	Recovery	50.440
150110*	Packaging contaminated by dangerous substances	Yes	Recovery	11.836



Code EWC	Description	Hazardous	Treatment	Quantity 2022 (kg)
150202*	Absorbents, filter materials, rags and protective clothing contaminated with dangerous substances	Yes	Recovery	2.889
			Disposal	-
160213*	Discarded equipment containing hazardous components	Yes	Recovery	124
160303*	inorganic waste containing dangerous substances	Yes	Disposal	1.206
160504*	gases in pressure containers	Yes	Recovery	101
160508*	hazardous waste organic chemicals	Yes	Disposal	1.027
160601*	Lead acid batteries	Yes	Recovery	-
161002	waste liquids (floor cleaning machine)	No	Disposal	10.874
170202	glass	No	Recovery	669
170203	plastic	No	Recovery	2.382
170405	iron and steel	No	Recovery	13.340
170603*	other insulating materials containing dangerous substances	Yes	Disposal	53
200121*	fluorescent tubes and other mercury-containing waste	Yes	Recovery	20
200307	bulk waste	No	Recovery	-
<b>Total</b>				<b>630.128 kg</b>





### GOAL ACHIEVED

For 2022, the company plans to join the municipal separate waste collection in order to boost separate waste collection inside offices and at the plant.

In this way, it will also be possible to reduce the amount of EWC 15.01.06 waste (mixed material packaging) and its transport.

In 2022 the amount of EWC 15.01.06 waste (mixed material packaging) was reduced by 43%.

PROGRESS STATUS:



TARGET IMPLEMENTATION DATE: 2022







## WASTE TRANSPORT

CO<sub>2</sub> equivalent emissions resulting from the transport of waste in 2022 were calculated.

The company pays close attention to the reduction of the ecological impact deriving from the transport of waste and significant improvement actions have been implemented in the past.

In 2019, for example, a compacting machine was installed, thereby reducing to 1/3 the number of journeys made for the transport of waste from mixed material packaging.

**RENOLIT Milano S.r.l.** is constantly committed to selecting waste disposal points that implement the best available waste management techniques, favoring waste recovery solutions wherever possible, and that are located in the vicinity of the company.

**4,17 tons**

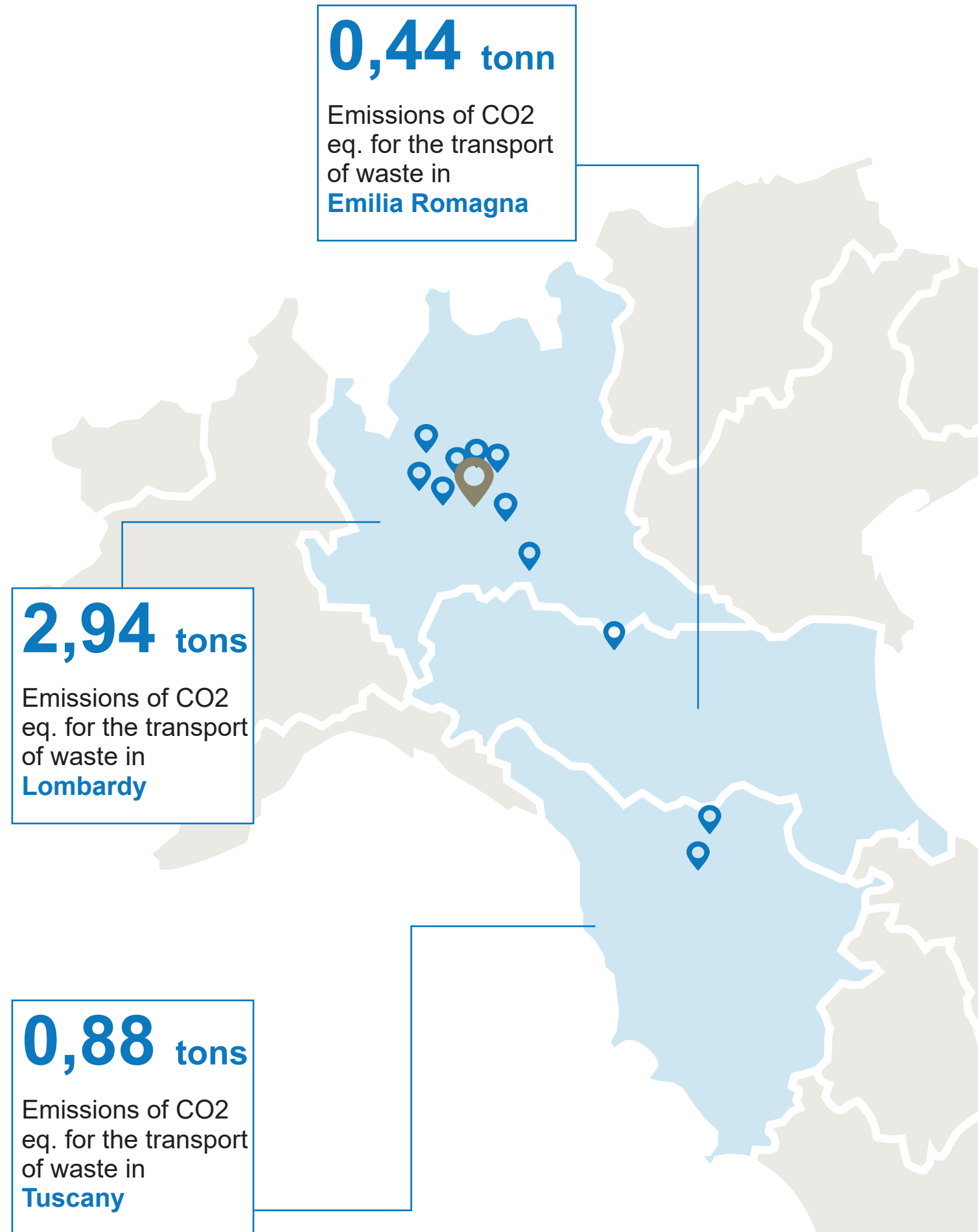
Emissions of CO<sub>2</sub> eq. for the transport of waste in 2022

**5.900 km**

covered for waste transport in 2022

**52 km**

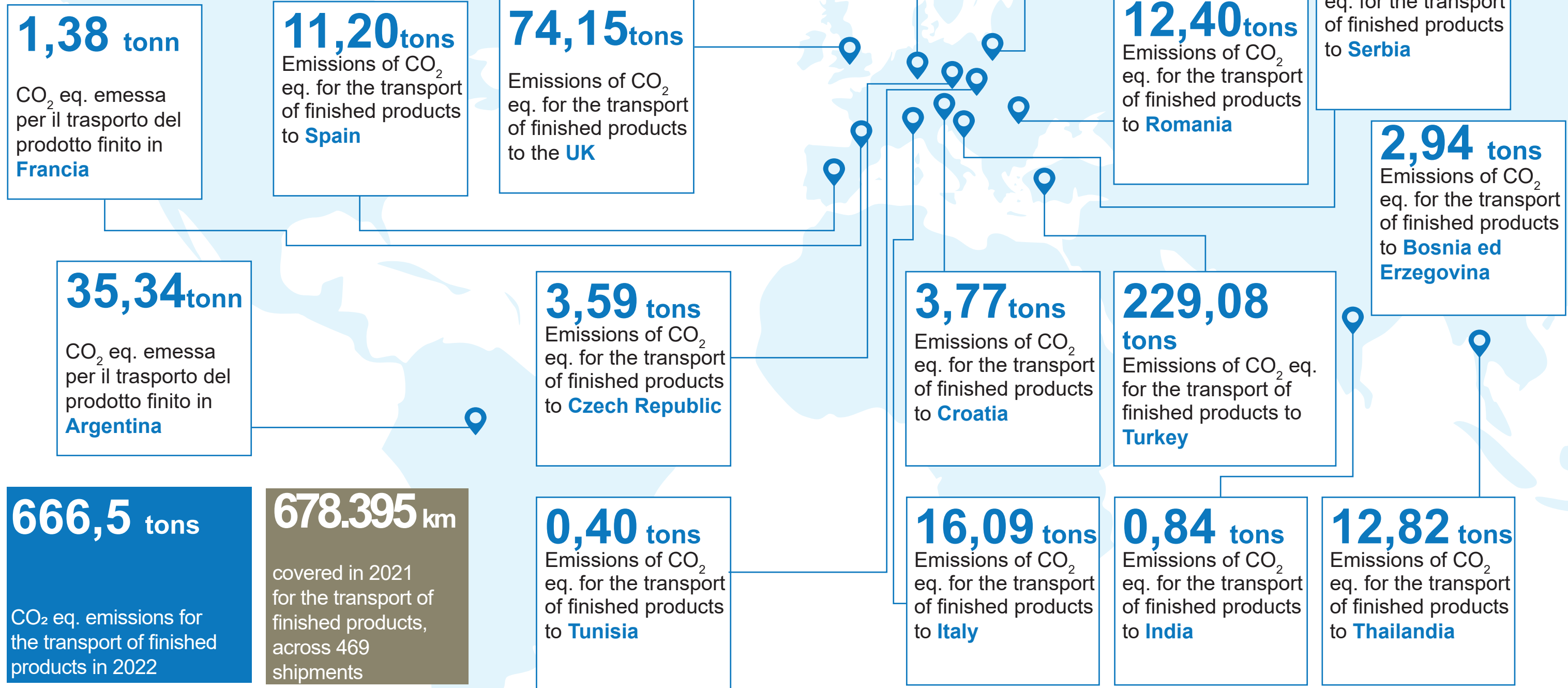
Average distance of the waste treatment plants from **RENOLIT Milano S.r.l.** headquarters





## TRANSPORT OF THE FINISHED PRODUCT

Emissions of CO<sub>2</sub> equivalent deriving from the transport of finished products to customers were quantified. The first 40 downstream recipients were considered, covering 80% of the total products sold. It has been calculated that 0.26 kg of CO<sub>2</sub> equivalent is emitted on average for each kg of product transported. The company is committed to optimizing journeys by road. **During the three-year reporting period the average quantities transported per single journey were increased, going from an average of 3.983 kg in 2020 to an average of 5.560 kg in the years 2021 and 2022.**







## END-OF-LIFE

The products made at RENOLIT Milano S.r.l. are applied exclusively to interior furnishing surfaces, therefore the average lifespan of the product is the same as that of the furniture and furnishing accessories upon which the PVC film is applied.

At its end-of-life phase, the product must necessarily be disposed of alongside the furniture item or furnishing accessory upon which it has been applied, since at present there is no way of separating the PVC film from the application surface. At its end-of-life phase, the product is mostly classified as “bulky waste” that cannot be recycled and will be incinerated.

Scientific literature has determined the emissions of CO<sub>2</sub> equivalent for the production of energy from PVC combustion: 0.09 kg CO<sub>2</sub> eq./kg PVC.

(source: Idematapp 2020 PVC (Polyvinylchloride) co-firing in electrical power plant)

**20** years

years Estimated  
average lifespan of  
the product

















## SUMMARY OF ENVIRONMENTAL PERFORMANCE INDICATORS

### Indicators for 2020 - 2022 - RENOLIT Milano S.r.l.

Year	 Water	 Electricity	 Natural gas	 Waste	 Emissions CO <sub>2</sub> eq.
2020	190.967 m <sup>3</sup>	6.140.912 kWh	990.316 Smc	925.731 Kg	14.536 tonn
2021	197.936 m <sup>3</sup>	6.246.804 kWh	940.804 Smc	840.966 Kg	15.693 tonn
2022	152.472 m <sup>3</sup>	4.779.579 kWh	726.928 Smc	630.128 Kg	9.971 tonn

### Indicators per kg of PVC film produced

Year	 Water	 Electricity	 Natural gas	 Waste	 Emissions CO <sub>2</sub> eq.
2020	40,04 L	1,29 kWh/kg	0,21 Smc/kg	0,19 kg/kg	3,05 kgCO <sub>2</sub> eq./kg
2021	37,85 L	1,19 kWh/kg	0,18 Smc/kg	0,16 kg/kg	3,00 kgCO <sub>2</sub> eq./kg
2022	39,23 L	1,23 kWh/kg	0,19 Smc/kg	0,16 kg/kg	2,57 kgCO <sub>2</sub> eq./kg





## SUMMARY OF IMPROVEMENT ACTIONS

Environmental aspects	Improvement action	Progress status	Target implementation date
RAW MATERIAL PACKAGING	In an effort to reduce the volumes of packaging waste, the coating varnish with a glossy effect used for the PVC sheet could be stored in 500 kg IBC tanks, which can then be returned to the manufacturer and reused. Currently, these varnishes are supplied in 20 L plastic drums which must be disposed of as special hazardous waste (EWC 15.01.10 *) for up to 120 pallets/year. In this way, the amount of waste could be significantly reduced and its transport would be cut by about 10 trucks (truck + trailer) per year.	25%	2024
INLET WATER	The company is currently studying the feasibility of optimizing the consumption of water drawn from the well, by adopting recirculating cooling water systems.	10%	2025
EMISSIONS INTO THE ATMOSPHERE	The company plans to replace solvent-based paints with water-based paints in order to significantly reduce the release of solvents into the atmosphere	50%	The changing market-driven demands has led to a slowdown in this project, however the company remains focused on this goal with a view to the medium term, with a target date for completion by 2025

Environmental aspects	Improvement action	Progress status	Target implementation date
ELECTRIC POWER	In 2024, the compressor currently serving the compressed air system will be replaced with a more energy efficient model. The improvement of energy efficiency will be seen in 2024.	50% to instability of market	2022 Post-poned to 2024 due
FINISHED PRODUCT PACKAGING	At a corporate level, the wooden flanges are set to be replaced by cardboard boxes; this alternative solution would significantly reduce the weight of the individual package with advantages in terms of transport emissions. A feasibility study is currently underway.	25%	2025 OneRenolit Strategy
MANUFACTURING WASTE	Through the "Renolit Goes Circular" project, the Renolit Group aims to achieve zero waste passed on to third parties by 2025. With a view to circular economy, the waste produced in each manufacturing site will be reused internally within the group. The project continued throughout 2021, in particular seeing a marked increase in multi-site collaboration. In 2022 scrap were reduced by 25%	50%	2025
WASTE	For 2022, the company plans to join the municipal separate waste collection in order to boost separate waste collection inside offices and at the plant. In this way, it will also be possible to reduce the amount of EWC 15.01.06 waste (mixed material packaging) and its transport. In 2022 the amount of EWC 15.01.06 waste (mixed material packaging) was reduced by 43%.	100% completed	2022





## BIBLIOGRAPHICAL REFERENCES CONVERSION FACTORS

Phase	Work sheet	Indicator	Source
Upstream	Raw Materials PVC	Emissions CO <sub>2</sub> eq. For PVC production	Idematapp2020 PVC (Polyvinyl-chloride bulk polymerised)
Upstream	Transport RM	Emissions CO <sub>2</sub> eq. For RM transport	GHG Protocol Transport_Tool
Core	Energy	Emissions of CO <sub>2</sub> eq. deriving from the consumption of electric power fed from the grid	ISPRA Report - Atmospheric emission factors of greenhouse gases in the national electricity sector and in the main European countries. 2022 edition
Core	Methane/ NatGas	Emissions of CO <sub>2</sub> eq. from the combustion of natural gas	ISPRA national standard coefficients table 2022
Core	Fuel	Emissions of CO <sub>2</sub> eq. due to fuel consumption	GHG Protocol Transport_Tool_Fuel"
Downstream	Waste	Emissions of CO <sub>2</sub> eq. due to waste transport	GHG Protocol Transport_Tool
Downstream	Products delivery	Emissions of CO <sub>2</sub> eq. due to finished goods transport	GHG Protocol Transport_Tool







*Rely on it.*

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