ENVIRONMENTAL PRODUCT DECLARATION

PESTO ALLA GENOVESE SAUCE

The first EPD process certified in the Food industries

REGISTRATION NUMBER	CPC CODE	PUBLICATION DATE	REVISION	VALID UNTIL	PROGRAMME	PROGRAMME OPERATOR
S-P-00494	23995 Sauces PCR 2010:19 v. 3.12 - 06.09.2019	2015/09/01	5 of 2022/11/03	2025/06/29	The International EPD® System www.environdec.com	EPD International AB

This EPD has been developed in conformity to ISO 14025. An EPD should provide current information and may be updated if conditions change. The stated validity is, therefore, subject to the continued registration and publication at www.environdec.com.

1. BRAND AND PRODUCT

THE BRAND BARILLA

The Barilla brand has its roots in a small bread and pasta store opened in Parma in 1877.
Today it is the number one pasta in Italy and around the world. Thanks to the best durum wheat and impressive modern technologies, Barilla supplies millions around the world with pasta that always cooks to a perfect al dente texture, as well as ready-to-eat pasta sauces.

Further information on Barilla website.

THE PLANT AND THE PROCESS

Pesto sauces are produced in an owned plant located in Rubbiano (Italy), where the preparation is very close to what people would do at home.
The process starts from basil prepatation (washing and drying); basil is then added to other ingredients and mixed.
Pesto sauce undergoes a heat treatment to pasteurize the product while preserving flavor and taste as much as possible over time. The pasteurization treatment, coupled with the integrity of the container, allows us to avoid using any preservatives.
The product is sold in package of 190 grams jar in two recipe: with garlic, directed to both for local (Italian) and export market, and witout garlic, directed to local (Italian) market only.
The Pesto can be poured directly cold on the cooked pasta; for an even more creamy consistency a little amount of cooking water can be added.
Sauce may be heated up before the consumption.

THE PRODUCT

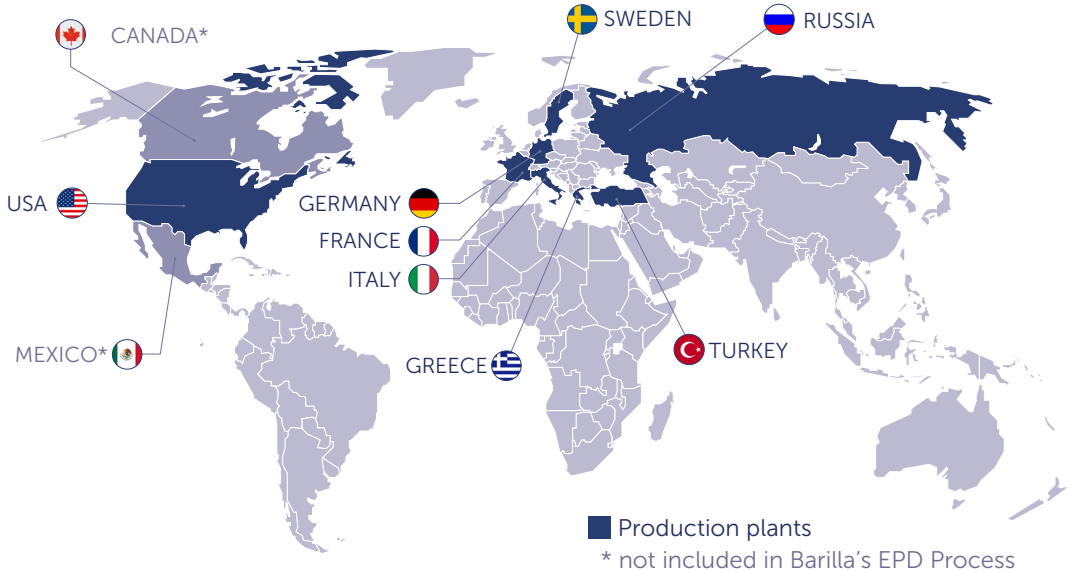
NUTRITIONAL INFORMATION (100 g) Pesto alla Genovese sauce and Pesto alla Genovese sauce without Garlic		
Energy	kJ kcal	1989 482
Fats *of which saturated*	grams	46 *5.3*
Carbohydrates *of which sugars*	grams	9.8 *5.5*
Fibres	grams	5.0
Proteins	grams	4.7
Salt	grams	3.25

2. BARILLA GROUP

It is thanks to a path characterised by passion, quality, and attention to people's needs that a small bread and pasta shop, that opened in Parma in 1877, over time became the "Barilla" we know today: a world leader in the market for pasta, ready-made sauces, baked goods, and crispbread.

Barilla is present in over 100 countries with its brands and 30 production sites, which, every year, together produce more than 2,134,000 tonnes of products.

In different ways, on different markets, all of our brands have a common objective: to bring joy and conviviality around everyone's table.



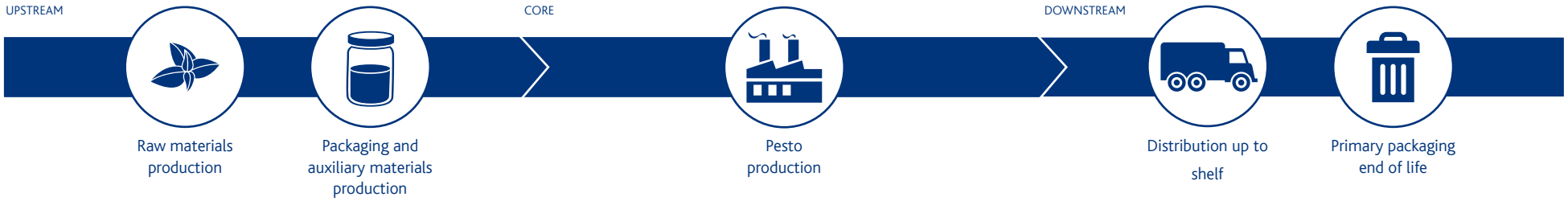
Our Purpose: The joy of food for a better life

In order to make a concrete contribution to global challenges, Barilla has renewed its commitment to society and the planet with a new Purpose containing the "why" of our way of doing business: "The joy of food for a better life".

"Bringing people closer to the joy of good food and making quality the choice for a better life, from each individual to the planet. Because this is how we are nurturing the future, today."

It's a commitment from field to fork, to bring to the world tasty, joyful and wholesome products, made with selected raw materials from responsible supply chains. Because what we eat today can change our tomorrow. Because good food is a joy for the present and a choice for a better future.

3. ENVIRONMENTAL PERFORMANCE CALCULATION



The environmental performance of the product was calculated using the **LCA (life cycle analysis)** methodology, including the entire production chain, beginning with growing the vegetables up until delivery of the finished product to the shelf.
The study was conducted following the specific product rules (PCR) published by the EPD system: "CPC code 23995 – Sauce". The generic data contributes to the calculation of environmental impacts is lower than 10%.

DECLARED UNIT

Data are referred to **1 kg** of product plus the related packaging (the packaging is referred to the **190 g** format, reported to 1 kg of product).

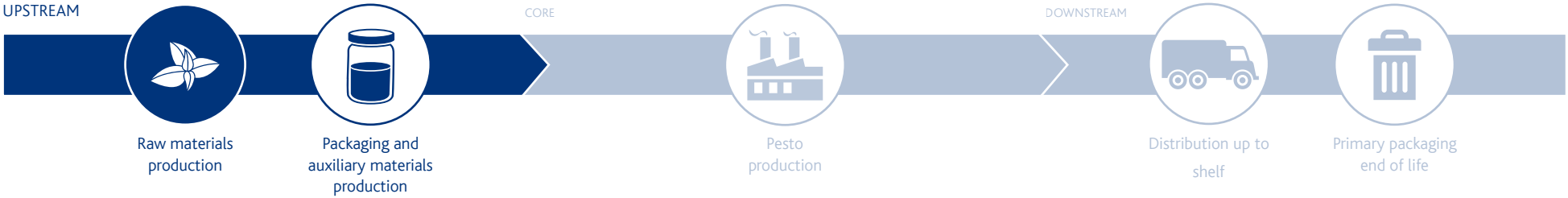
SYSTEM BOUNDARIES

The processes constituting the analysed system were organized in upstream, core and downstream processes, in compliance with the requisites of the EPD system.

GEOGRAPHICAL SCOPE

The geographical scope of this EPD is global and it corresponds to the distribution area of the products.

4. RAW MATERIALS PRODUCTION

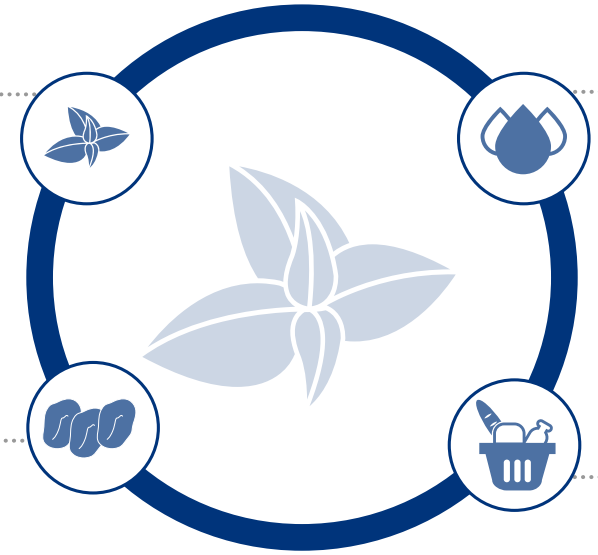


BASIL and BASIL SEMI-FINISHED PRODUCT

Impacts related to the basil cultivation and basil semi-finished product have been calculated on the basis of primary data collected from farmers. Information are related to 2020 crop.

CASHEW NUTS

Impacts related to cashew nuts come from Ecoinvent database.



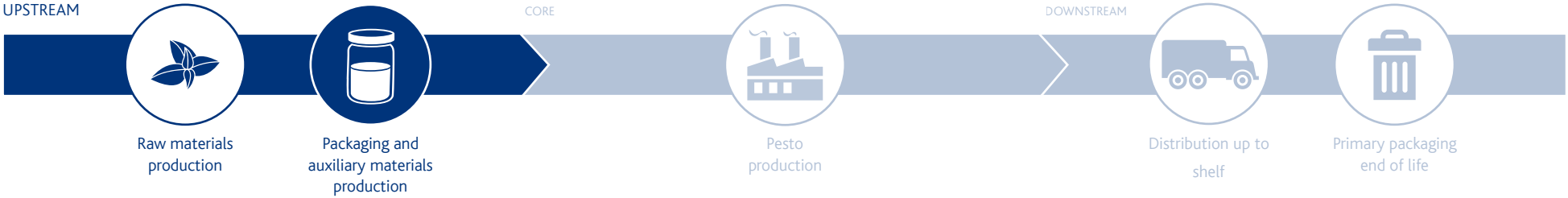
VEGETABLE OILS

Data for vegetable oil production come from secondary data (from Agrifootprint database and World Food LCA database), except Extra-Virgin olive oil production, whose data come from Monini Classico EPD S-P-00384.

OTHER INGREDIENTS

Data related to the sugar come from Barilla suppliers; data related to other raw materials have been collected by LCA database (mainly Ecoinvent).

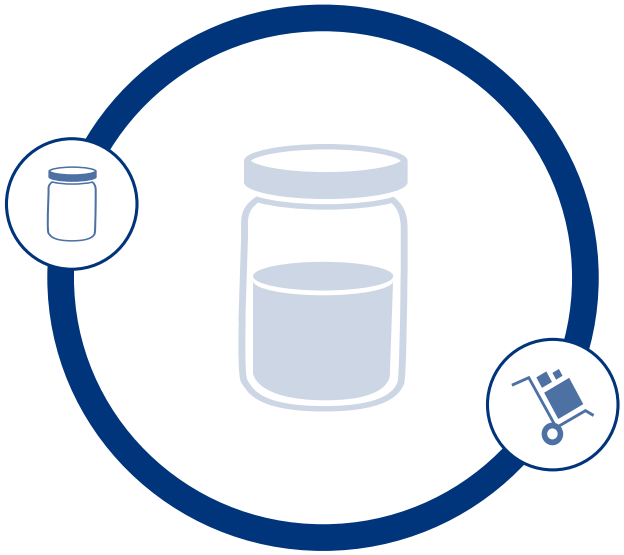
5. PACKAGING AND AUXILIARY MATERIALS PRODUCTION



PRIMARY PACKAGING

Packaging environmental performances are calculated using the190g formats and are reported per packaging used for 1 kg of product.
The primary packaging consists in glass jar with screw top.

Primary data (from packaging unit) are used for packaging amount and packaging materials production; data about packaging production process come from Barilla LCA database.



PACKAGING PRODUCTION

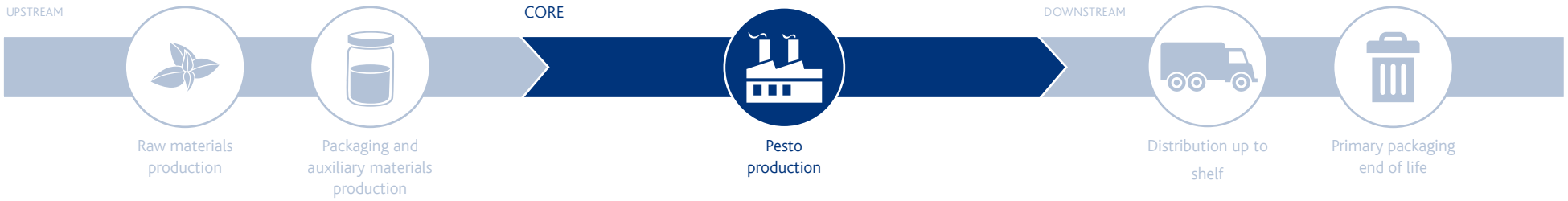
Since 2004. Barilla designs new packaging with the"LCA packaging design tool". It allows the assessment of the environmental impacts of the packaging solutions already during the design phase.

PACKAGING FOR TRANSPORTATION

The packaging for transport consists in cardboard boxes (american box or tray), used for the distribution of the product, and a plastic extensible film. Boxes and trays are made mainly by recycled cardboard carton (pre and post consumer).
Data used have been collected from LCA databases (mainly Ecoinvent).

Auxiliary materials environmental performances are evaluated by using primary data from plant, during 2021 year.
Secondary data (Ecoinvent) are used for environmental aspects associated to materials production.

6. PESTO PRODUCTION



GENERAL INFORMATION

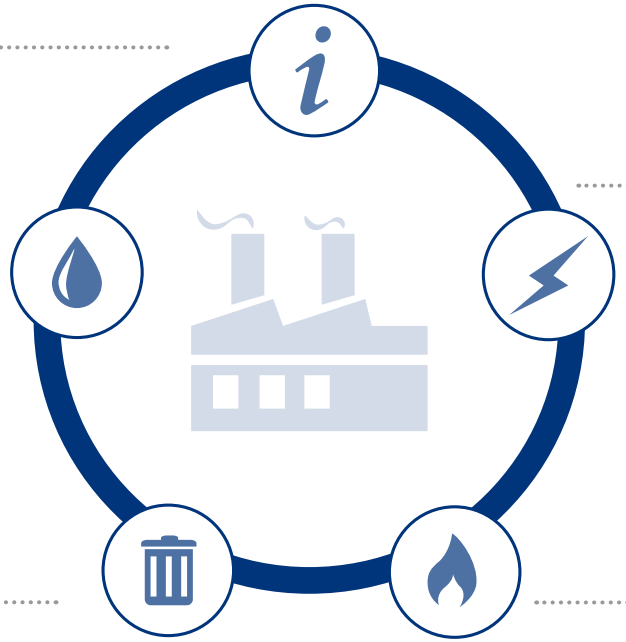
The environmental performance related to production processes is evaluated by considering the energy and the water consumption and the waste production as primary data. Secondary data (mainly Ecoinvent) are used for the environmental aspects related to the production of energy and water.

WATER

Water consumption is evaluated using primary data. The overall value is attributed to the product using the mass allocation procedure.
Plant water consumption includes also the water amount needed for ingredients preparation: this amount is included both in plant consumption and product recipe following a precautionary approach.
Data refer to sauce production in 2021.

WASTE

The primary data are collected by the plant registrations. The overall value is attributed to the product using the mass allocation procedure.
Data refer to sauce production in 2021.



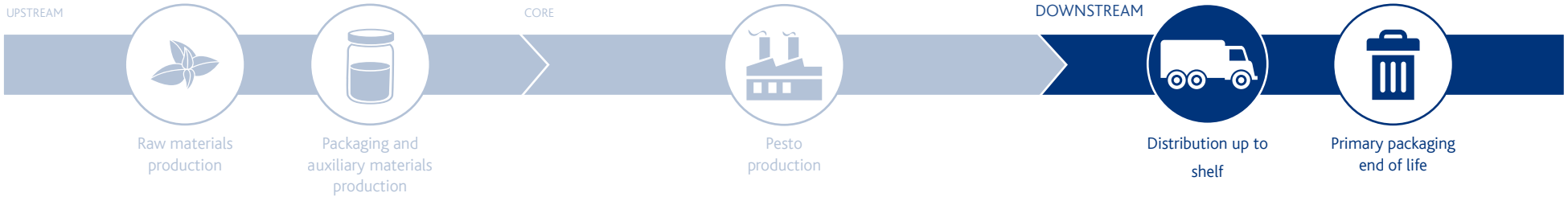
ELECTRICITY

Total plant electricity consumption has been divided using the mass allocation procedure, as the plant produces a number of different sauces.
Barilla, through the GO certification system (Guaranty of origin market), buys energy from hydroelectric renewable resources as to cover the entire Rubbiano sauce production.
Data are referred to 2021.

NATURAL GAS

Natural gas consumption is evaluated using primary data. The overall value is attributed to the product using the mass allocation procedure.
Data refer to sauce production in 2021.

7. DISTRIBUTION



DISTRIBUTION

Pesto alla genovese sauce is produced in Barilla's Rubbiano plant, Italy.

Distribution performance were calculated for Pesto without garlic only for local consumption (Italy), while for the classic pesto recipe the following hypotheses has been used:

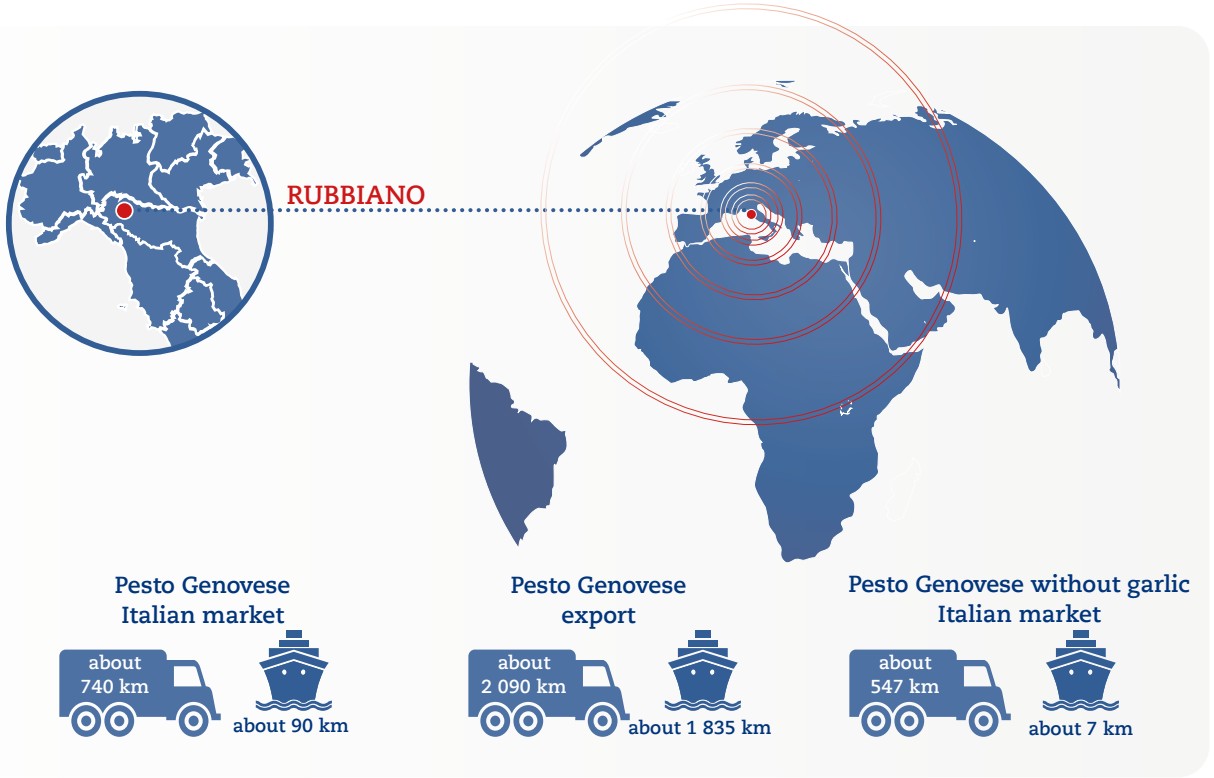
- 23% of production is intended for the Italian market,
- 77% is intended for export

Distribution performance were calculated considering the transport for about:

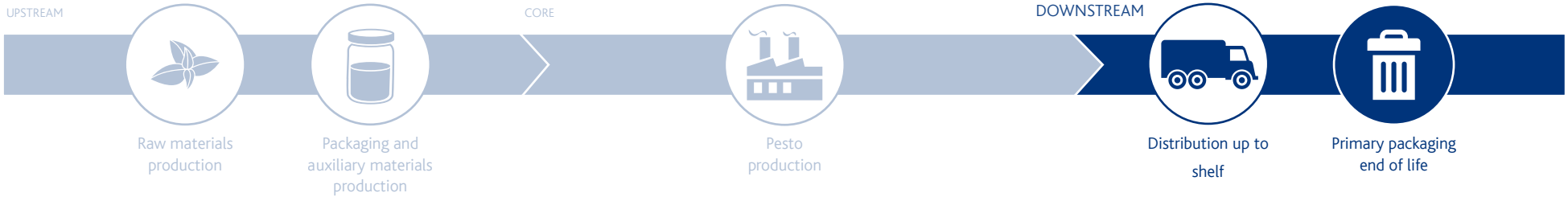
- 740 km by truck for Pesto Genovese distributed in Italy
- 2 090 km by truck plus 1 835 km by ship for Pesto Genovese distributed in other countries
- 547 km by truck plus 7 km by ship for Pesto Genovese without Garlic

The product does not require special storage conditions (refrigeration, etc).

The impacts related to the disposal of the packaging for transport for local consumption considering the Italian scenario for paper/board (87% recycling, 8% energy recovery, 5% disposal) and plastic film (29% recycling, 61% energy recovery, 11% disposal).



8. PRIMARY PACKAGING END OF LIFE LOCAL DISTRIBUTION



In Italy, recyclable glass packaging for selective waste collection in urban areas is usually sent to:

79% RECYCLE

Avoiding the production of virgin glass.

21% DISPOSAL

In Italy, 16%of waste sent to disposal are incinerated without energy recovery, the remaining part goes to landfill

GL 70 VASETTO VETRO Raccolta VETRO

82% RECYCLE

Avoiding the ore mining.

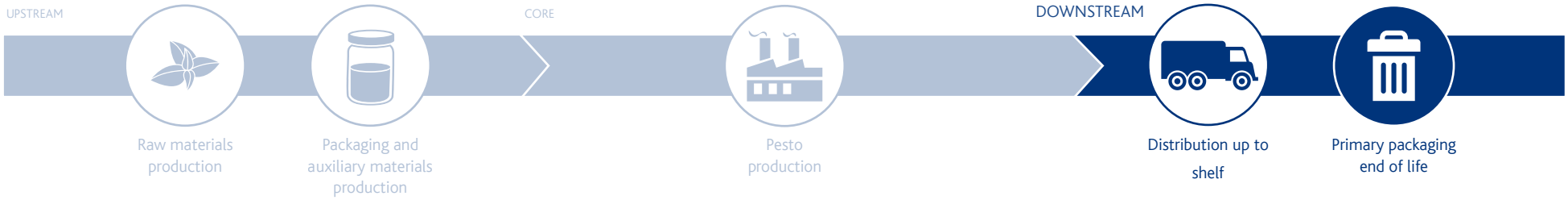
18% DISPOSAL

In Italy, 16% of waste sent to disposal are incinerated without energy recovery, the remaining part goes to landfill

FE 40 CAPSULA METALLO Raccolta METALLO

Data elaborated from CoReVe 2020 report and Ricrea 2019 report.

8. PRIMARY PACKAGING END OF LIFE EXPORT



In the average EU scenario, recyclable glass packaging for selective waste collection in urban areas is usually sent to:

75% RECYCLE — Avoiding the production of virgin glass.

25% DISPOSAL — Glass disposed is sent to landfill.

GL 70 VASETTO VETRO — Raccolta VETRO

81% RECYCLE — Avoiding the ore mining.

19% DISPOSAL — The capsules disposed are sent to landfill

FE 40 CAPSULA METALLO — Raccolta METALLO

Data elaborated from CoReVe 2020 report and Ricrea 2019 report.

9. ENVIRONMENTAL RESULTS

PESTO ALLA GENOVESE ITALIAN MARKET

USE OF RESOURCES data referred to1 kg of product		UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
PRIMARY ENERGY RESOURCES - RENEWABLE data in MJ	Used as energy carrier	1.94E+01	1.98E+00	1.05E+00	4.31E-03	5.93E-04	**2.24E+01**
	Used as raw materials*	0.00E+00	1.56E-01	0.00E+00	0.00E+00	0.00E+00	**1.56E-01**
	Total	**1.94E+01**	**2.13E+00**	**1.05E+00**	**4.31E-03**	**5.93E-04**	**2.26E+01**
PRIMARY ENERGY RESOURCES - NON RENEWABLE data in MJ	Used as energy carrier	2.17E+01	1.54E+01	4.80E+00	2.73E+00	1.20E-02	**4.47E+01**
	Used as raw materials	0.00E+00	2.69E-01	0.00E+00	0.00E+00	0.00E+00	**2.69E-01**
	Total	**2.17E+01**	**1.57E+01**	**4.80E+00**	**2.73E+00**	**1.20E-02**	**4.49E+01**
Secondary Material (g)		0.00E+00	2.84E+02	0.00E+00	0.00E+00	0.00E+00	**2.84E+02**
Renewable secondary fuels (MJ. net calorific power)		0.00E+00	9.66E-03	0.00E+00	0.00E+00	0.00E+00	**9.66E-03**
Non-renewable secondary fuels (MJ. net calorific power)		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Net use of fresh water (liters)		3.33E+02	2.44E+01	6.43E+00	5.72E-02	1.92E-03	**3.64E+02**

OUTPUT FLOWS data referred to1 kg of product	UPSTREAM		CORE	DOWNSTREAM		TOTAL
	Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
Waste to animal feed or similar (g)	0.00E+00	0.00E+00	3.60E+01	0.00E+00	0.00E+00	**3.60E+01**
Components for reuse (g)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Materials for recycling (g)	1.10E+00	1.07E+02	1.26E+02	1.64E+01	6.62E+02	**9.13E+02**
Materials for energy recovery (g)	0.00E+00	0.00E+00	1.00E+00	5.09E+00	4.56E+00	**1.06E+01**
Exported energy, electricity (MJ)	0.00E+00	0.00E+00	0.00E+00	1.10E-03	2.20E-04	**1.32E-03**
Exported energy, thermal (MJ)	0.00E+00	0.00E+00	0.00E+00	2.30E-03	4.60E-04	**2.76E-03**

Secondary energy resources and recovered energy flows do not show relevant contributions.

**The biomasses transformed into the product are not considered.*

9. ENVIRONMENTAL RESULTS

PESTO ALLA GENOVESE ITALIAN MARKET

POTENTIAL ENVIRONMENTAL IMPACTS data referred to1 kg of product		UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
GLOBAL WARMING POTENTIAL - GWP ($g\ CO_2$ eq)	Fossil	1.81E+03	1.13E+03	3.14E+02	2.01E+02	1.04E+00	**3.46E+03**
	Biogenic	6.77E+02	5.93E+00	4.83E+00	1.11E+00	6.23E-01	**6.90E+02**
	Land use and land transformation	4.50E+02	1.68E+01	3.55E-03	1.71E-03	4.78E-04	**4.66E+02**
	Total	**2.94E+03**	**1.15E+03**	**3.19E+02**	**2.02E+02**	**1.67E+00**	**4.61E+03**
Acidification Potential - $g\ SO_2$ eq.		3.32E+01	6.59E+00	9.24E-01	1.02E+00	7.51E-03	**4.17E+01**
Eutrophication Potential - $g\ PO_4^{---}$ eq.		1.58E+01	1.03E+00	1.40E-01	1.54E-01	1.46E-03	**1.71E+01**
Photochemical Oxidant Formation Potential - g NMVOC eq.		1.32E+01	3.73E+00	1.02E+00	1.20E+00	7.58E-03	**1.91E+01**
Abiotic Depletion Potential - Elements g Sb eq.		3.45E-03	3.69E-02	6.91E-06	8.64E-06	9.07E-08	**4.04E-02**
Abiotic Depletion Potential - Fossil fuels - MJ, net calorific value		1.82E+01	1.51E+01	4.78E+00	2.73E+00	1.15E-02	**4.08E+01**
Water scarcity potential, m3 eq.		1.06E+01	9.83E-01	2.88E-01	-4.12E-04	5.97E-05	**1.19E+01**

WASTE PRODUCTION* data referred to1 kg of product	UPSTREAM		CORE	DOWNSTREAM		TOTAL
	Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
Hazardous waste disposed	6.97E-04	2.93E-02	0.00E+00	0.00E+00	0.00E+00	**3.0E-02**
Non-Hazardous waste disposed	6.71E+00	2.40E+00	0.00E+00	0.00E+00	0.00E+00	**9.1E+00**
Radioactive waste disposed	6.58E-05	3.69E-05	4.11E-06	1.26E-06	1.48E-07	**1.1E-04**

The biogenic contribution to Global Warming Potential refers only to biogenic methane.
The contribution given by biogenic CO_2 is equal to zero, since the absorbed amount is equal to the emitted biogenic CO_2 within the reference 100 years period.

* *Only flows coming from processes under direct Barilla control were considered, if not associated to a treatment whose environmental impact is considered. Flows generated by secondary data were excluded (since already accounted for their environmental burden).*

10. PRODUCT ENVIRONMENTAL PERFORMANCE

PESTO ALLA GENOVESE for Italian market

	Raw material production	Packaging and auxiliary materials productiuion	Pesto production	Distribution up to shelf	Primary packaging end of life	From field to primary packaging end of life
ECOLOGICAL FOOTPRINT	5.2	3.4	0.8	0.6	<0.1	10 global m²/kg
CARBON FOOTPRINT	2 939	1 151	319	202	2	4 613 gCO_2eq/kg
WATER SCARCITY	10 647	983	288	<0.1	<0.1	11 918 litres eq/kg

Compared to the last EPD, in this section the Water Scarcity indicator has substituted the Virtual Water Content, previously reported, to improve coherence with the indicators section.

11. ENVIRONMENTAL RESULTS

PESTO ALLA GENOVESE EXPORT

USE OF RESOURCES data referred to1 kg of product		UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
PRIMARY ENERGY RESOURCES - RENEWABLE data in MJ	Used as energy carrier	1.94E+01	1.98E+00	1.05E+00	1.23E-02	4.84E-04	**2.24E+01**
	Used as raw materials*	0.00E+00	1.56E-01	0.00E+00	0.00E+00	0.00E+00	**1.56E-01**
	Total	**1.94E+01**	**2.13E+00**	**1.05E+00**	**1.23E-02**	**4.84E-04**	**2.26E+01**
PRIMARY ENERGY RESOURCES - NON RENEWABLE data in MJ	Used as energy carrier	2.17E+01	1.54E+01	4.80E+00	7.84E+00	1.06E-02	**4.98E+01**
	Used as raw materials	0.00E+00	2.69E-01	0.00E+00	0.00E+00	0.00E+00	**2.69E-01**
	Total	**2.17E+01**	**1.57E+01**	**4.80E+00**	**7.84E+00**	**1.06E-02**	**5.00E+01**
Secondary Material (g)		0.00E+00	2.84E+02	0.00E+00	0.00E+00	0.00E+00	**2.84E+02**
Renewable secondary fuels (MJ. net calorific power)		0.00E+00	9.66E-03	0.00E+00	0.00E+00	0.00E+00	**9.66E-03**
Non-renewable secondary fuels (MJ. net calorific power)		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Net use of fresh water (liters)		3.33E+02	2.44E+01	6.43E+00	1.59E-01	1.51E-03	**3.64E+02**

OUTPUT FLOWS data referred to1 kg of product	UPSTREAM		CORE	DOWNSTREAM		TOTAL
	Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
Waste to animal feed or similar (g)	0.00E+00	0.00E+00	3.60E+01	0.00E+00	0.00E+00	**3.60E+01**
Components for reuse (g)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Materials for recycling (g)	1.10E+00	1.07E+02	1.26E+02	1.69E+01	6.57E+02	**9.08E+02**
Materials for energy recovery (g)	0.00E+00	0.00E+00	1.00E+00	3.98E+00	3.42E+00	**8.40E+00**
Exported energy, electricity (MJ)	0.00E+00	0.00E+00	0.00E+00	1.10E-04	2.20E-05	**1.32E-04**
Exported energy, thermal (MJ)	0.00E+00	0.00E+00	0.00E+00	2.30E-04	4.60E-05	**2.76E-04**

Secondary energy resources and recovered energy flows do not show relevant contributions.

**The biomasses transformed into the product are not considered.*

11. ENVIRONMENTAL RESULTS

PESTO ALLA GENOVESE EXPORT

POTENTIAL ENVIRONMENTAL IMPACTS data referred to1 kg of product		UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
GLOBAL WARMING POTENTIAL - GWP ($g\ CO_2$ eq)	Fossil	1.81E+03	1.13E+03	3.14E+02	5.70E+02	8.86E-01	**3.82E+03**
	Biogenic	6.77E+02	5.93E+00	4.83E+00	1.38E+00	7.82E-01	**6.90E+02**
	Land use and land transformation	4.50E+02	1.68E+01	3.55E-03	4.90E-03	3.57E-04	**4.66E+02**
	Total	**2.94E+03**	**1.15E+03**	**3.19E+02**	**5.71E+02**	**1.67E+00**	**4.98E+03**
Acidification Potential - $g\ SO_2$ eq.		3.32E+01	6.59E+00	9.24E-01	2.41E+00	6.81E-03	**4.31E+01**
Eutrophication Potential - $g\ PO_4^{---}$ eq.		1.58E+01	1.03E+00	1.40E-01	2.75E-01	1.54E-03	**1.72E+01**
Photochemical Oxidant Formation Potential - g NMVOC eq.		1.32E+01	3.73E+00	1.02E+00	2.18E+00	7.34E-03	**2.01E+01**
Abiotic Depletion Potential - Elements g Sb eq.		3.45E-03	3.69E-02	6.91E-06	2.38E-05	7.34E-08	**4.04E-02**
Abiotic Depletion Potential - Fossil fuels - MJ, net calorific value		1.82E+01	1.51E+01	4.78E+00	7.83E+00	1.02E-02	**4.59E+01**
Water scarcity potential, m3 eq.		1.06E+01	9.83E-01	2.88E-01	-1.33E-03	4.59E-05	**1.19E+01**

WASTE PRODUCTION* data referred to1 kg of product	UPSTREAM		CORE	DOWNSTREAM		TOTAL
	Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
Hazardous waste disposed	6.97E-04	2.93E-02	0.00E+00	0.00E+00	0.00E+00	**3.0E-02**
Non-Hazardous waste disposed	6.71E+00	2.40E+00	0.00E+00	0.00E+00	0.00E+00	**9.1E+00**
Radioactive waste disposed	6.58E-05	3.69E-05	4.11E-06	3.54E-06	1.10E-07	**1.1E-04**

The biogenic contribution to Global Warming Potential refers only to biogenic methane.
The contribution given by biogenic CO_2 is equal to zero, since the absorbed amount is equal to the emitted biogenic CO_2 within the reference 100 years period.

* *Only flows coming from processes under direct Barilla control were considered, if not associated to a treatment whose environmental impact is considered. Flows generated by secondary data were excluded (since already accounted for their environmental burden).*

12. PRODUCT ENVIRONMENTAL PERFORMANCE

PESTO ALLA GENOVESE for export

	Raw material production	Packaging and auxiliary materials productiuion	Pesto production	Distribution up to shelf	Primary packaging end of life	From field to primary packaging end of life
ECOLOGICAL FOOTPRINT	5.2	3.4	0.8	1.5	<0.1	11 global m²/kg
CARBON FOOTPRINT	2 939	1 151	319	571	2	4 982 gCO_2eq/kg
WATER SCARCITY	10 647	983	288	<0.1	<0.1	11 917 litres eq/kg

Compared to the last EPD, in this section the Water Scarcity indicator has substituted the Virtual Water Content, previously reported, to improve coherence with the indicators section.

13. ENVIRONMENTAL RESULTS

PESTO ALLA GENOVESE WITHOUT GARLIC

USE OF RESOURCES data referred to1 kg of product		UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
PRIMARY ENERGY RESOURCES - RENEWABLE data in MJ	Used as energy carrier	1.95E+01	1.98E+00	1.04E+00	3.12E-03	5.93E-04	**2.25E+01**
	Used as raw materials*	0.00E+00	1.56E-01	0.00E+00	0.00E+00	0.00E+00	**1.56E-01**
	Total	**1.95E+01**	**2.13E+00**	**1.04E+00**	**3.12E-03**	**5.93E-04**	**2.26E+01**
PRIMARY ENERGY RESOURCES - NON RENEWABLE data in MJ	Used as energy carrier	2.21E+01	1.54E+01	5.00E+00	1.97E+00	1.20E-02	**4.45E+01**
	Used as raw materials	0.00E+00	2.69E-01	0.00E+00	0.00E+00	0.00E+00	**2.69E-01**
	Total	**2.21E+01**	**1.57E+01**	**5.00E+00**	**1.97E+00**	**1.20E-02**	**4.48E+01**
Secondary Material (g)		0.00E+00	2.84E+02	0.00E+00	0.00E+00	0.00E+00	**2.84E+02**
Renewable secondary fuels (MJ. net calorific power)		0.00E+00	9.66E-03	0.00E+00	0.00E+00	0.00E+00	**9.66E-03**
Non-renewable secondary fuels (MJ. net calorific power)		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Net use of fresh water (liters)		3.26E+02	2.44E+01	6.38E+00	4.19E-02	1.92E-03	**3.57E+02**

OUTPUT FLOWS data referred to1 kg of product	UPSTREAM		CORE	DOWNSTREAM		TOTAL
	Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
Waste to animal feed or similar (g)	0.00E+00	0.00E+00	3.60E+01	0.00E+00	0.00E+00	**3.60E+01**
Components for reuse (g)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Materials for recycling (g)	5.35E+00	1.07E+02	1.26E+02	1.64E+01	6.62E+02	**9.17E+02**
Materials for energy recovery (g)	0.00E+00	0.00E+00	1.00E+00	5.09E+00	4.56E+00	**1.06E+01**
Exported energy, electricity (MJ)	0.00E+00	0.00E+00	0.00E+00	1.10E-03	2.20E-04	**1.32E-03**
Exported energy, thermal (MJ)	0.00E+00	0.00E+00	0.00E+00	2.30E-03	4.60E-04	**2.76E-03**

Secondary energy resources and recovered energy flows do not show relevant contributions.

**The biomasses transformed into the product are not considered.*

13. ENVIRONMENTAL RESULTS

PESTO ALLA GENOVESE WITHOUT GARLIC

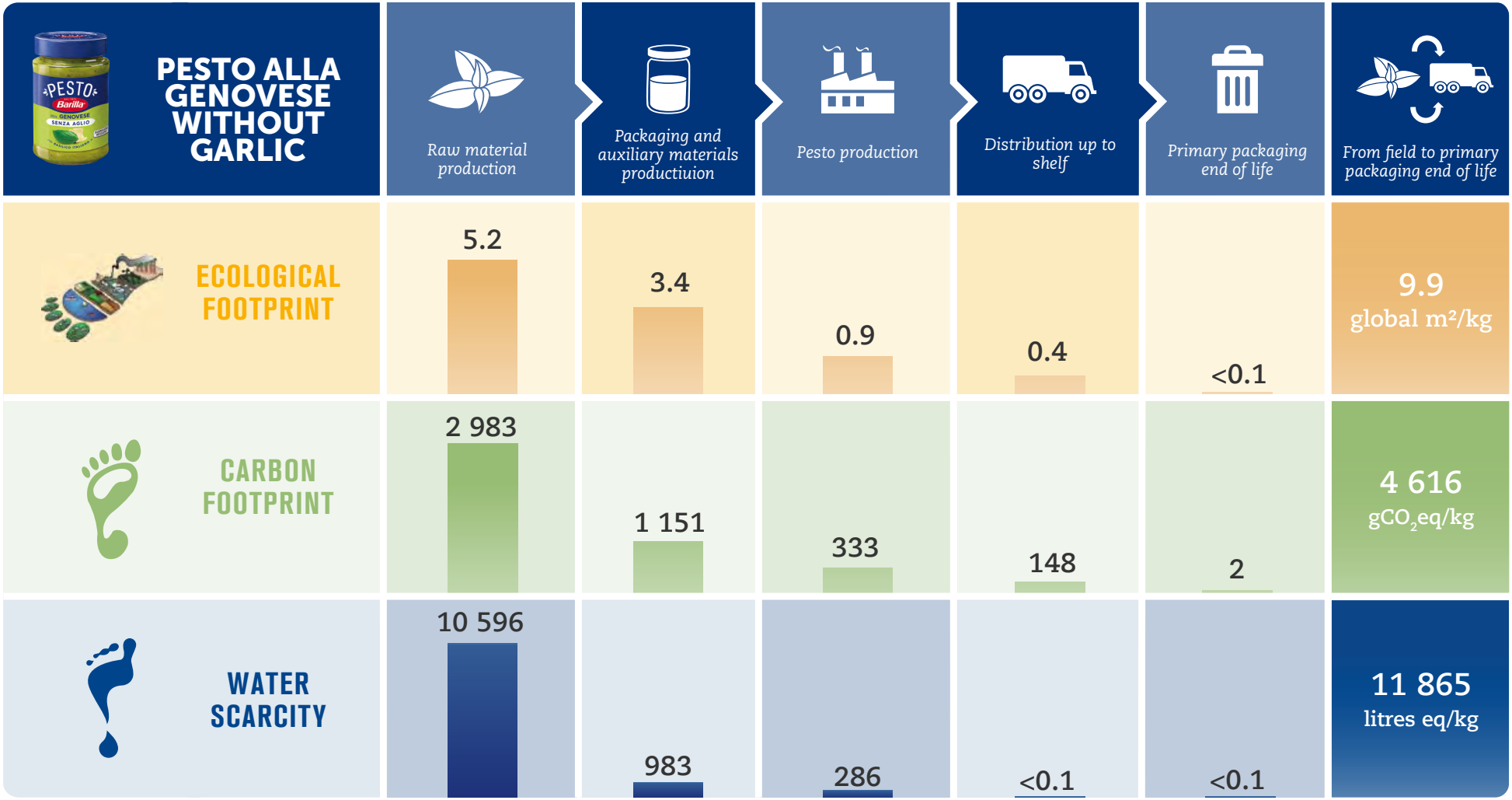
POTENTIAL ENVIRONMENTAL IMPACTS data referred to1 kg of product		UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
GLOBAL WARMING POTENTIAL - GWP ($g\ CO_2$ eq)	Fossil	1.85E+03	1.13E+03	3.28E+02	1.47E+02	1.04E+00	**3.45E+03**
	Biogenic	6.80E+02	5.93E+00	4.83E+00	1.11E+00	6.23E-01	**6.93E+02**
	Land use and land transformation	4.54E+02	1.68E+01	3.67E-03	1.24E-03	4.78E-04	**4.71E+02**
	Total	**2.98E+03**	**1.15E+03**	**3.33E+02**	**1.48E+02**	**1.67E+00**	**4.62E+03**
Acidification Potential - $g\ SO_2$ eq.		3.37E+01	6.59E+00	9.97E-01	7.13E-01	7.51E-03	**4.20E+01**
Eutrophication Potential - $g\ PO_4^{---}$ eq.		1.61E+01	1.03E+00	1.51E-01	1.07E-01	1.46E-03	**1.73E+01**
Photochemical Oxidant Formation Potential - g NMVOC eq.		1.32E+01	3.73E+00	1.11E+00	8.34E-01	7.58E-03	**1.89E+01**
Abiotic Depletion Potential - Elements g Sb eq.		3.47E-03	3.69E-02	7.54E-06	6.25E-06	9.07E-08	**4.04E-02**
Abiotic Depletion Potential - Fossil fuels - MJ, net calorific value		1.86E+01	1.51E+01	4.99E+00	1.97E+00	1.15E-02	**4.06E+01**
Water scarcity potential, m3 eq.		1.06E+01	9.83E-01	2.86E-01	-2.80E-04	5.97E-05	**1.19E+01**

WASTE PRODUCTION* data referred to1 kg of product	UPSTREAM		CORE	DOWNSTREAM		TOTAL
	Raw material production	*Packaging and auxiliary materials production*	*Production*	*Distribution up to shelf*	*Primary packaging end of life*	
Hazardous waste disposed	7.49E-04	2.93E-02	0.00E+00	0.00E+00	0.00E+00	**3.0E-02**
Non-Hazardous waste disposed	7.68E+00	2.40E+00	0.00E+00	0.00E+00	0.00E+00	**1.0E+01**
Radioactive waste disposed	6.47E-05	3.69E-05	4.18E-06	9.10E-07	1.48E-07	**1.1E-04**

The biogenic contribution to Global Warming Potential refers only to biogenic methane.
The contribution given by biogenic CO_2 is equal to zero, since the absorbed amount is equal to the emitted biogenic CO_2 within the reference 100 years period.

* *Only flows coming from processes under direct Barilla control were considered, if not associated to a treatment whose environmental impact is considered. Flows generated by secondary data were excluded (since already accounted for their environmental burden).*

14. PRODUCT ENVIRONMENTAL PERFORMANCE



Compared to the last EPD, in this section the Water Scarcity indicator has substituted the Virtual Water Content, previously reported, to improve coherence with the indicators section.

15. DIFFERENCES VERSUS PREVIOUS VERSIONS OF EPD

The differences versus previous EPD versions are due mainly to the use of updated emission factors for the energy mixes, updated packaging materials weight and updated recipes of the product. For raw material production, primary data for basil and secondary data for other raw materials (from updated version of LCA databases) were updated.

Moreover, the product Environmental performances section has been modified with the substitution of Virtual Water Content with Water Scarcity indicator.

16. ADDITIONAL INFORMATION

REFERENCES

- International EPD Consortium, General Programme Instructions (EPD), ver. 3.01 of 18/09/2019;
- WWF, Global Footprint Network, Zoological Society of London, Living Planet Report 2008, WWF (2008);
- PCR 2010:19 CPC 23995: Sauces; ver. 3.12 of 01/09/2019;
- CONAI Report, relazione sulla gestione e Bilancio, 2020
- Eurostat database for waste management, latest version (2018)

Environmental declarations published within the same product category, though originating from different programs. may not be comparable. This declaration and further information in regards are available at www. environdec.com

As EPD owner, Barilla has the sole ownership, liability and responsibility for the EPD.

EPD PROCESS CERTIFICATION

Product category Rules (PCR) review conducted by:
Technical Committee of the International EPD® system.
Chair Filippo Sessa
Contact via info@environdec.com

Program operator:
EPD International AB
Box 210 60, SE-100 31 Stockholm, Sweden
info@environdec.com

EPD® ENVIRONMENTAL PRODUCT DECLARATION

EPD PROCESS CERTIFICATION

Independent verification of the declaration and data, according to ISO 14025:

- [x] EPD process verification
- [ ] EPD verification- Third party verifier

PROCESS INTERNAL VERIFICATION

Procedure for follow-up of data during EPD validity involves third part verifier:

- [ ] Yes
- [x] No

Third party verifier: **Bureau Veritas Certification Sweden AB,** Accredited by: **SWEDAC**

Process internal verifier: **Ugo Pretato,** Approved by: **The International EPD® System**

STUDIOFIESCHI & SOCI

CONTACTS

Barilla G. e R. Fratelli- Società per Azioni, via Mantova 166, 43122, Parma, Italy. www.barillagroup.com
For additional information relative to the activities of the Barilla Group or in regards to this environmental declaration, please contact:
Laura Marchelli - laura.marchelli@barilla.com

Technical support and grafic design: **Life Cycle Engineering SpA - Italy www.lcengineering.eu**

17. GLOSSARY

ECOLOGICAL FOOTPRINT

The ecological footprint measures the area of biologically productive land and water required to provide the resources used and absorb the carbon dioxide waste generated along the entire life cycle. It is measured in standard units called global hectares (gha).

www.globalfootprint.org

CARBON FOOTPRINT

A product carbon footprint is the total amount of greenhouse gases produced along the entire life cycle. It is expressed in equivalent mass of carbon dioxide (CO_2-eq).
In agriculture a significant contribution is given by the emission of nitrous oxide (N2O) due to the fertilizers use. It is also known as Global Warming Potential (GWP).

www.ipcc.ch

WATER SCARCITY

Water scarcity measures the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met. This method builds on the assumption that the potential to deprive another user of water is directly proportional to the amount of water consumed and inversely proportional to the available water remaining per unit of surface and time in a region (watershed).

www.wulca-waterlca.org

ACIDIFICATION (AP)

It is a phenomenon for which precipitation is unusually acidic, meaning that it has substandard levels of pH. It can have harmful effects on plants, aquatic animals and infrastructure. Acid rain is caused by emissions of SO_2. NO_x and NH_3. The acidification potential is measured in mass of sulphur dioxide equivalent (SO2-eq).

EUTROPHICATION (EP)

It is an abnormal proliferation of vegetation in the aquatic ecosystems caused by the addition of nutrients into rivers. lakes or ocean. which determinates a lack of oxygen. The eutrophication potential is mainly influenced by emission into water of phosphates and nitrates. It is expressed in mass of $PO_{4.}^{--}$equivalent.

PHOTOCHEMICAL OXIDANT FORMATION POTENTIAL (POFP)

Production of compounds that, under the light effect, are able to promote an oxidation reaction leading to ozone production in the troposphere.
The indicator is mainly influenced by VOCs (Volatile organic compounds) is usually expressed in mass of VOCs equivalent (g NMVOC - equivalent).