

FILATURA PAPI FABIO

Carbon Footprint data 2025

A background image showing rows of spinning spindles in a textile factory, with a dark overlay. The spindles are arranged in multiple rows on a wooden frame, and the image is dimly lit with a dark overlay.

The company: objectives, boundaries, collected data

The company

Filatura Papi was founded in 1890 in Faenza; following a devastating fire, the company relocated to the Emilian Apennines, specifically to Gaggio Montano, Bologna, where it is still based today. For more than 130 years Filatura Papi has used increasingly valuable raw materials to produce yarns requested by highly qualified clients in the fashion sector. This is enabled by plants and machinery, located both in Gaggio Montano and external sites, which are the result of constant, cutting-edge research and continuous investments aimed at improving quality and production efficiency.

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Objectives of the study

The study was made with the aim of:

- ✓ Analyze and report greenhouse gas emissions for 2025, in order to measure the company's total environmental footprint Climate Change.
- ✓ Track and quantify emissions related to internal activities, in order to identify company priorities and best practices for reduction and efficiency to be implemented in the new plant



Phases of the study

The creation of the inventory of greenhouse gas emissions by Filatura Papi Fabio involved the following phases:

1. definition of organizational and operational boundaries
2. inventory development through the identification of contributions to direct (Scope 1) and indirect emissions (Scope 2, 3)
3. greenhouse gas emission calculation and removals
4. drafting of emission GHC reports



Boudaries of the study

Filatura Papi Fabio has calculated its own GHG emissions and removal in terms of organization according to the control approach

The organization accounts for all emissions and/or removals of GHG over which it has financial and operational control.

The organizational boundaries of this study, in line with the financial reporting perimeter, consider all internal processes and consumption relating to the Filatura Papi Fabio plant Località Vivalle, 193, 40041 Gaggio Montano BO and Via Amalfi, 35, 59013 Montemurlo PO

Data collection

All data collected for each production plant are direct data, regarding:

- consumption of methane gas for combustion and heat generation
- fuel consumption, diesel and petrol, for company fleet vehicles
- refrigerant gas leaks
- electricity consumption from the grid





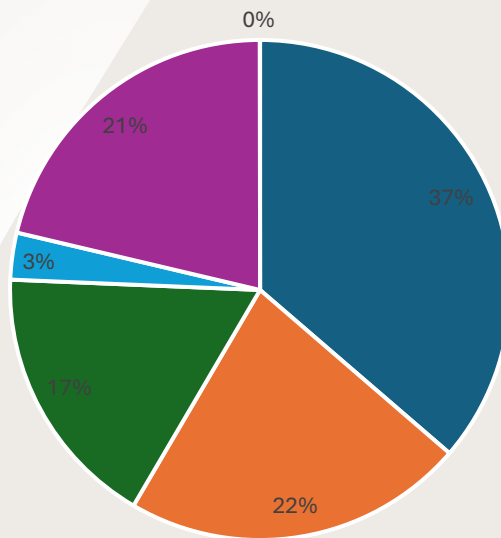
KPI *Key Performance Indicators*

Energy performance indices 2025

Energy KPI 2025 PRIMARY ENERGY TEP

Please see below energy consumption of 2025:

- electricity consumption from the grid = 1.182.152 kWh
- self-consumption from photovoltaic = 456.007 kWh
- methane gas (boilers) = 62.431 smc
- company vehicle fleet (fuel) = 23.849 litres.



- ENERGIA ELETTRICA DA RETE kWh
- ENERGIA ELETTRICA - 100% RINNOVABILE kWh
- ENERGIA ELETTRICA DA FOTVOLTAICO kWh
- GAS NATURALE Sm3
- ENERGIA ELETTRICA DA RETE_SEDE MONTEMURLO kWh
- METANO_SEDE MONTEMURLO Sm3



The background of the slide is a photograph of a textile factory. It shows multiple rows of spinning spindles, which are large, cylindrical bobbins of white thread mounted on a dark metal frame. The spindles are arranged in neat rows, creating a sense of depth and repetition. The lighting is somewhat dim, giving the image a moody, industrial feel. The text 'GHG Emissions Inventory' is overlaid in the center-left of the image.

GHG Emissions Inventory

Inventario delle emissioni GHG

Emissions reporting according to 3 different methods:

1. STANDARD ISO 14064-2019
2. GHG PROTOCL in the fashion supply chain
3. 4s PLANET method

Two different scenarios are analysed for each method:

1. **Location based:** Emissions associated with purchasing electricity from the grid are quantified using the emission factor specific to the average national generation mix. The factors are those published by ISPRA.
2. **Marked based:** Emissions associated with purchasing electricity from the grid are quantified using the emission factor of the supplier's own generation mix



Analysis based on categories

Category 1: Direct emissions – combustion

FILATURA PAPI FABIO	kgCO2e	Peso %
Methane gas	131.691	0,93%
Diesel (automotive)	212.204	1,50%
TOTAL	343.896	



Category 2: Indirect emissions for energy purchase

Location Based approach

FILATURA PAPI FABIO	kgCO2e	Peso %
electricity consumption from the grid_Gaggio	149.420	1,08%
electricity consumption – 100% GO	91.029	0,65%
self-consumption from fotovoltaic_Gaggio	-	
electricity consumption from the grid_Montemurlo	87.608	0,63%
self-consumption from fotovoltaic-Montemurlo	-	
TOTAL	328.057	2,35%

Market Based approach

FILATURA PAPI FABIO	kgCO2e	Peso %
electricity consumption from the grid_Gaggio	328.786	2,32%
electricity consumption – 100% GO	-	
self-consumption from fotovoltaic_Gaggio	-	-
electricity consumption from the grid_Montemurlo	192.774	1,36%
self-consumption from fotovoltaic-Montemurlo	-	
TOTAL	521.560	



Category 3-4: Indirect emissions

FILATURA PAPI FABIO	kgCO2e	Peso %
Upstream transport – by truck/by boat	95.035	0,67%
Upstream transport -production processes	23.858	0,17%
Raw material purchases	13.034.939	91,94%
Packaging and chemical products and water consumption	87.523	0,62%
Wastes	1.975	0,01%
Supply Chain	68.730	0,48%
TOTAL	14.177.518	



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CARBON INTENSITY

Carbon Intensity

Carbon intensity is an index that qualifies the equivalent CO₂ emissions per product unity produced in the year under analysis.

In 2024 Filatura Papi Fabio's production was **672.442** kg

Making a comparison with the above mentioned value and quantities of two different approaches (Location & Market Based, of 13.883.004 kg.CO₂e and of 14.177.518 kg.CO₂e) we obtain the following result:

Method	kgCO ₂ e/kg
Location Based	20,65
Market Based	21,08



Carbon Footprint FILATURA PAPI FABIO

Carbon Footprint Summery reporting

A dark, industrial background featuring a large roll of paper being processed by machinery. The paper is light-colored and has a blue letter 'R' printed on it. The machinery consists of metal frames and rollers, creating a complex geometric pattern of lines and angles.

Carbon Footprint FILATURA PAPI FABIO

ISO 14064

ISO 14064

Location Based

	TOTAL	
Category	kgCO ₂ e	%
Cat. 1 Direct emissions	343.896	2,5%
Cat. 2 Electricity	328.057	2,4%
Cat. 3&4	13.243.332	94,3%
Supply Chain	58.748	0,42

Market Based

	TOTAL	
Category	kgCO ₂ e	%
Cat. 1 Direct emissions	343.896	2.43%
Cat. 2 Electricity	521.560	3,68%
Cat. 3&4	13.243.332	93,06%
Supply Chain	68.730	0,48



Carbon Footprint FILATURA PAPI FABIO

GHG PROTOCOL

GHG PROTOCOL

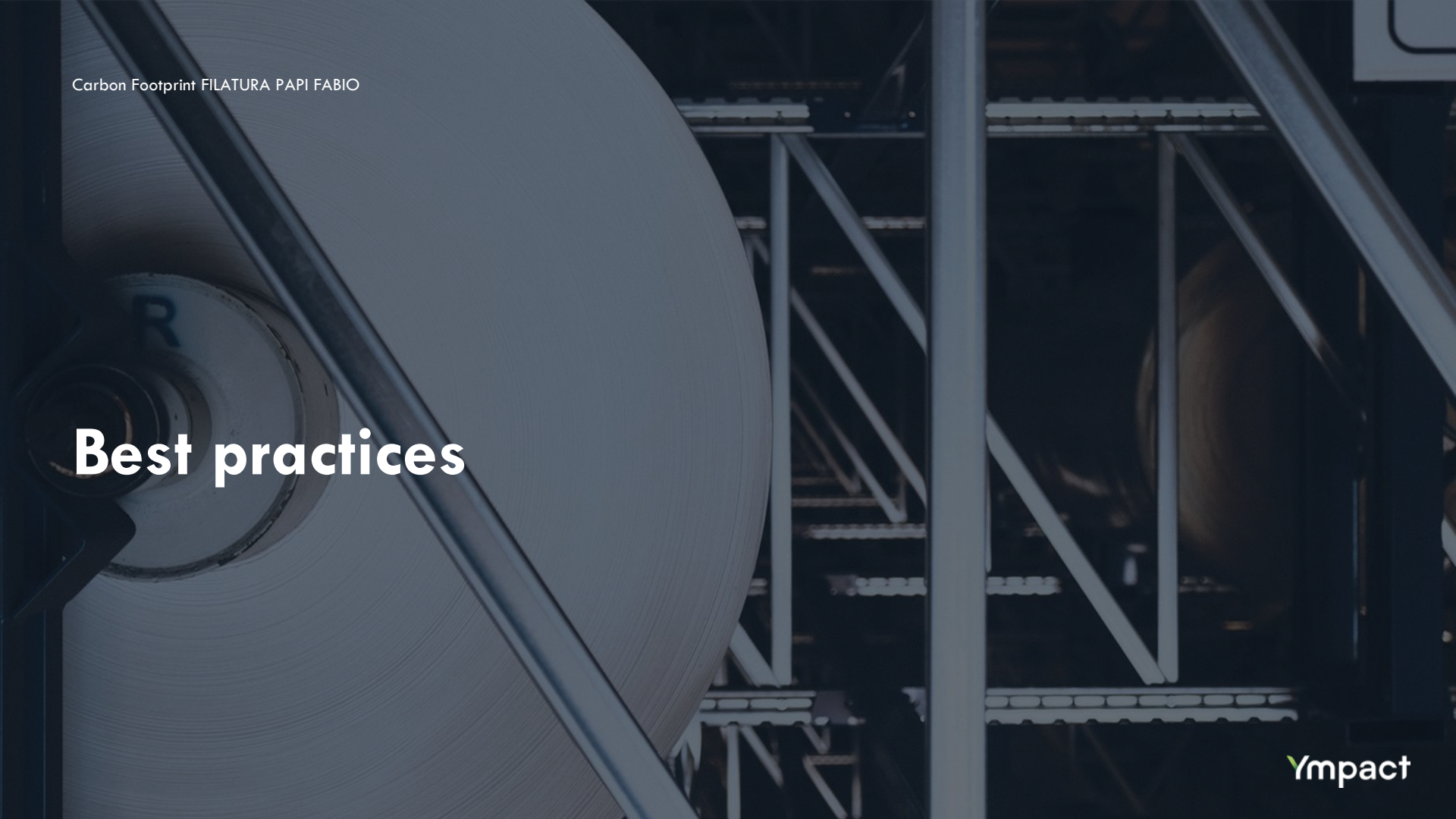
Location Based

SCOPE	TOTALE	
	kgCO2e	%
Scope 1	343.896	36.6%
Scope 2	328.057	34,9%
Scope 3	208.393	22.2%
Supply Chain	58.748	6.3%

Market Based

SCOPE	TOTALE	
	kgCO2e	%
Scope 1	343.896	30,1%
Scope 2	521.560	45,6%
Scope 3	208.393	18,2%
Supply Chain	68.730	6,0%



A dark, industrial background featuring a large roll of paper being processed by machinery. The paper has a blue 'R' marked on its inner core. The machinery consists of various metal frames, rollers, and structural beams, creating a complex geometric pattern.

Carbon Footprint FILATURA PAPI FABIO

Best practices

Best practices

Toward an efficient with low-emissions production plant

In the context of the ecological transition and the growing attention to environmental sustainability by brands and consumers, energy efficiency and the reduction of GHG emissions represent fundamental strategic levers also for manufacturing companies such as Filatura Papi Fabio.

The goal is to make the existing production site increasingly sustainable, efficient and competitive through targeted interventions on systems and energy supplies.

Suggested solutions have the aim to.

- reduce Scope 1 and Scope 2 emissions
- increase energy efficiency
- promote the self production of energy from renewable sources
- promote 100% renewable energy use
- optimize operating costs in the middle to long term
- strengthen corporate reputation and the possibility of accessing green incentives



Best practices

	Compressor replacement	Photovoltaic system in Montemurlo	Boiler replacement	Renewable electricity purchase
Description	Compressors replacement with new generation, high efficiency models, reducing electric consumption and energy losses.	Photovoltaic system installation for the self-production of renewable energy and the reduction of dependence on the electricity grid	New boiler installation at high efficiency in order to optimize natural gas use and to reduce thermal consumptions	Switching to purchasing 100% guaranteed electricity from renewable sources with Guarantees of Origin (GO)
Year	2023	2024	2025	2026/2028
Expected saving	The adoption of new-generation compressors allows for more efficient management and reduced energy losses. In the short term , this results in savings on electricity consumption and improved operational control, while in the medium term , the investment translates into lower service costs and greater system reliability.	Photovoltaic system reduces dependence on the electricity grid and guarantees a stable amount of energy from renewable source. In the short term it allows to reduce the electricity bill costs, in the medium term it strengthens the company's production autonomy and economic resilience to energy price fluctuations.	The new high-efficiency boiler allows for a more rational use of natural gas and a reduction in direct emissions. In the short term , it improves thermal efficiency and system safety, while in the medium term , it helps contain energy costs and reduce the environmental impact of production activities.	The decision to source exclusively from renewable sources consolidates Filatura Papi Fabio's commitment to low-emission production. In the short term , it represents a strategic decision in line with customer and market expectations, while in the medium term , it will become a cornerstone for the overall de-carbonization of the plant.



Year comparison

Year comparison

GHG PROTOCOL	2025	2024	2023	2022	Delta 2025/2024	Delta 2025/2022
Scope 1	343.896	464.659	444.785	291.760	-26%	18%
Methane gas consumption	131.691	110.491	133.806	128.484	19%	2%
Fuel consumption	212.204	354.168	310.979	163.276	-40%	30%
Scope 2	521.560	696.577	989.756	898.394	-25%	-42%
Electric energy from grid consumption	521.560	696.577	965.191	870.161	-25%	-40%
Photovoltaic consumption	-	-	24.565	28.234		-100%
Scope 1 + 2	865.455	1.161.236	1.434.541	1.190.154	-25%	-27%
Scope 3	208.393	251.787	264.532	409.351	-17%	-49%
Scope 3_Lav c/t	68.730	269.576			-75%	
TOTALE	1.142.579	1.682.599	1.699.074	1.599.505	-32%	-29%



Year comparison on annual production

GHG PROTOCOL	2025	2024	2023	2022	Delta 2025/2024	Delta 2025/2021
Scope 1	0,51	0,73	0,66	0,39	-30%	31%
Scope 2	0,78	1,09	1,48	1,21	-29%	-36%
Scope 3	0,31	0,39	0,40	0,55	-22%	-44%
Scope 3_Lav c/t	0,10	0,42				
TOTALE	1,60	2,22	2,54	2,15	-28%	-26%



Tracing Fashion to a Responsible Future



Firenze | Via Antonio Da Noli, 4-6
Tel: +39 055 461947

Arzignano (VI) | L.go Danieli 9
Tel: +39 0444 451789

www.ym pact.xyz