



GHG INVENTORY ACCOUNTING CARBON FOOTPRINT

JAN 2023 – DEC 2024

Pal Fashions Pvt. Ltd.

E49 MIDC Tarapur Industrial Area,
Boisar West, Dist Palghar - 401506



PAL FASHIONS PVT. LTD.
E49, E49/1 & E49/2 MIDC, Tarapur, Tal. & Dist. Palghar
Tel. No. 8149688766

1. UAN NO

2. PRODUCT

3. QUANTITY

4. VALID UPTO

:MPCB-CONSENT-0000224972/CR/2412000142

:YARN & TEXTILE PROCESSING UNITS OF GREY ART SILK SYNTHETIC FABRICS

:800000 METERS / MONTH

:30/11/2029

A) EFFLUENT DISCHARGE DETAILS

TYPE	QUANTITY	DISPOSAL
1) INDUSTRIAL EFFLUENT	600 CMD	MIDC DRAINAGE
2) DOMESTIC EFFLUENT	20 CMD	
3) INDUSTRIAL COOLING / BOILER	03 CMD	
4) GARDENING	10 CMD	

B) AIR EMISSION DETAILS

SOURCE	TYPE OF FUEL	SULPHUR CONTENT Ppm SO2	STANDARD
BOILER	BRIQUETTE	0.06	9.3 Kg/Day
THERMOPACK	BRIQUETTE	0.06	6.2 Kg/Day
D.O SET(800 KYA)	HSD	1.00	48 Kg/Day

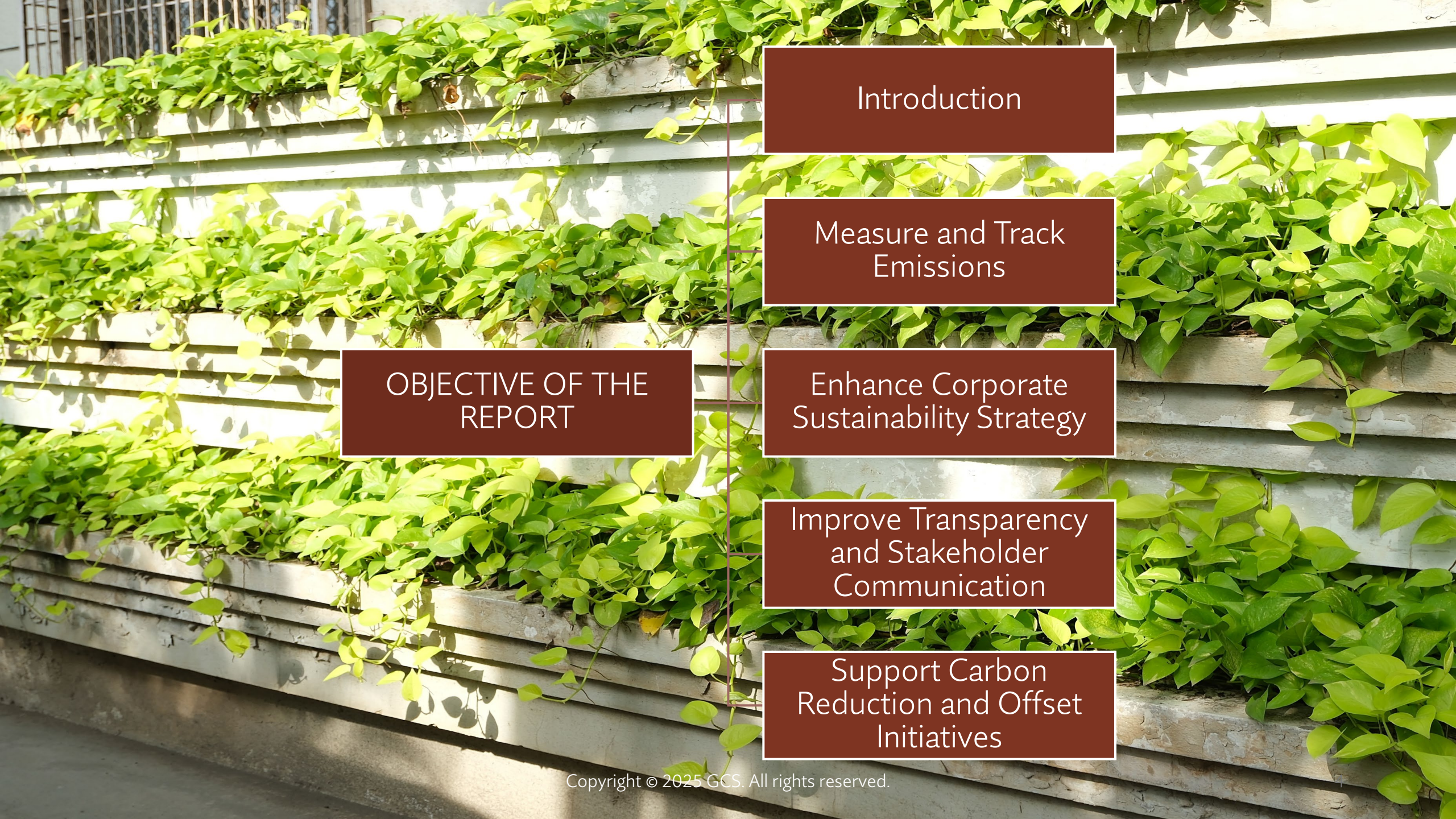
C) HAZARDOUS WASTE

CATEGORY	TYPE	QUANTITY	DISPOSAL
35.3	ETP SLUDGE	90 KG/ DAY	CHWTSDF TALOJA

D) HAZARDOUS CHEMICAL HANDLES

CATEGORY	QUANTITY
NIL	NIL





Introduction

Measure and Track
Emissions

OBJECTIVE OF THE
REPORT

Enhance Corporate
Sustainability Strategy

Improve Transparency
and Stakeholder
Communication

Support Carbon
Reduction and Offset
Initiatives

Company Profile

Pal Fashions Pvt Ltd, established in 1980, is a leading textile manufacturer based in Tarapur, India. With over four decades of expertise, the company specializes in Schiffli embroidery, multi-head embroidery, dyeing, and waterless digital printing, serving global markets across 26+ countries. Pal Fashions operates a vertically integrated facility equipped with advanced machinery sourced from Switzerland, Germany, Japan, and other global leaders.

Monthly production capacity includes:

- 1 million meters of processed textiles
- 0.5 million meters of embroidery or 300 million stitches

The company is committed to sustainable manufacturing, holding the distinction of being **India's first GreenCo Gold-rated textile enterprise**.

Its operations emphasize:

- Waterless digital printing to reduce water consumption
- Energy-efficient wet processing
- GHG emissions tracking and reduction across Scope 1, 2, and 3

Pal Fashions continues to innovate in low-impact textile production, aligning with national and international climate goals while delivering high-quality products to global clients.

Management's Vision & Mission Statement:

Our Vision is to empower global fashion through innovative textiles, Embroidery, Wet Processing and Printing sustainability, quality, and creativity into every fabric, inspiring timeless elegance and functionality for generations to come.

Our mission is to revolutionize the textile industry by delivering exceptional quality fabrics sustainably sourced and produced. We strive to foster creativity, collaboration, and integrity in every aspect of our operations, ensuring customer satisfaction, environmental stewardship, and social responsibility.

Sardar Ascharj Singh Ahuja
Founder



Arvinder Singh Ahuja
Chairman cum Managing Director



Charan Singh Ahuja
Managing Director



Arjun Singh Ahuja
Managing Director



The background of the image is a dense, out-of-focus pattern of green leaves, likely from a plant like basil, creating a natural and organic feel. The leaves are in various shades of green, from dark forest green to lighter, sunlit greens, with some veins clearly visible.

CARBON FOOTPRINT REPORT

What is A Carbon Footprint?

A carbon footprint refers to the total amount of greenhouse gas (GHG) emissions—mainly carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)—generated throughout the lifecycle of clothing production, from raw material extraction to end-of-life disposal.

Key Sources of Carbon Footprint:



Energy Consumption – Use of fossil fuels for electricity, heating, and industrial processes.



Transportation – Emissions from vehicles, airplanes, and logistics.



Manufacturing & Production – Industrial activities, including raw material extraction and processing.



Waste Management – Landfills, incineration, and wastewater treatment.



Supply Chain Activities – Emissions from goods and services used in operations.

Carbon Emission in Textile Industry

The textile and apparel industry's emissions stem from a complex, resource-intensive supply chain that includes raw material cultivation, manufacturing, transportation, and disposal.

10% of total global carbon emissions

~ 5 billion tonnes in carbon emissions per year

Targets to reduce GHG emissions by 45% by 2030



IMPORTANCE OF GHG REPORTING

1. Climate Change Mitigation

Carbon emissions, particularly CO₂, are the primary drivers of climate change. Transparent reporting helps businesses, governments, and individuals track their environmental impact and take measures to reduce it.

2. Regulatory Compliance

Many countries and regions have laws requiring businesses to disclose their emissions. Compliance with these regulations helps avoid penalties and ensures alignment with national and international climate goals.

3. Corporate Responsibility & Reputation

Consumers and investors are increasingly favoring environmentally responsible companies. Transparent reporting enhances credibility, attracts eco-conscious customers, and strengthens brand reputation.

4. Risk Management & Cost Savings

Understanding emission levels helps organizations identify inefficiencies, reduce energy consumption, and cut costs. This also prepares businesses for future carbon taxes and regulatory changes.

5. Investor & Stakeholder Expectations

Many investors and stakeholders demand Environmental, Social, and Governance (ESG) transparency. Carbon reporting allows companies to showcase their commitment to sustainability, making them more attractive for investment.

6. Benchmarking & Goal Setting

By reporting emissions, organizations can set clear sustainability goals, track progress, and compare their performance against industry standards or competitors.

7. Supply Chain Accountability

Large corporations are increasingly requiring suppliers to disclose carbon emissions to ensure their entire supply chain is aligned with sustainability targets.

8. Contribution to Global Initiatives

Carbon reporting aligns with international agreements like the **Paris Agreement** and **Net-Zero Initiatives**, helping nations and industries work collectively toward a sustainable future.

A photograph of a multi-story white building with balconies, partially obscured by lush greenery including palm trees and other tropical plants. A red fire extinguisher is visible on the right side of the building. A large text box is overlaid on the bottom half of the image.

ABOUT THE ORGANISATION

PAL FASHIONS PVT. LTD.

Innovation inspired from culture, nature, tradition and forecasting, has led the culture of Pal Fashions in the direction of Design Thinking. The deep emphasis on development and innovation has made Pal Fashions a Trend Setter for the rest of the industry for embroidery design and process innovation.

End-to-end solutions of Automatic Weaving, Modern Wet Processing, Digital Printing, Schiffli and Multi-Head Embroidery as well as Apparel Manufacturing for multiple leading brands including our own brand NAARI; while ensuring Unmatched Delivery Speed.

Compliance of global norms is achieved through concurrent testing in the company's well-equipped laboratory.

Superior standards of quality met through Swiss precision.



The background features a soft, abstract composition of pastel colors: a light blue-grey at the top left, a pale pink at the bottom left, and a light beige at the bottom right. A large, semi-transparent white rectangle is positioned in the center, serving as a backdrop for the text. On the right side, a portion of a dark green monstera leaf with characteristic splits is visible, partially overlapping the white rectangle.

DYEING



















PRINTING



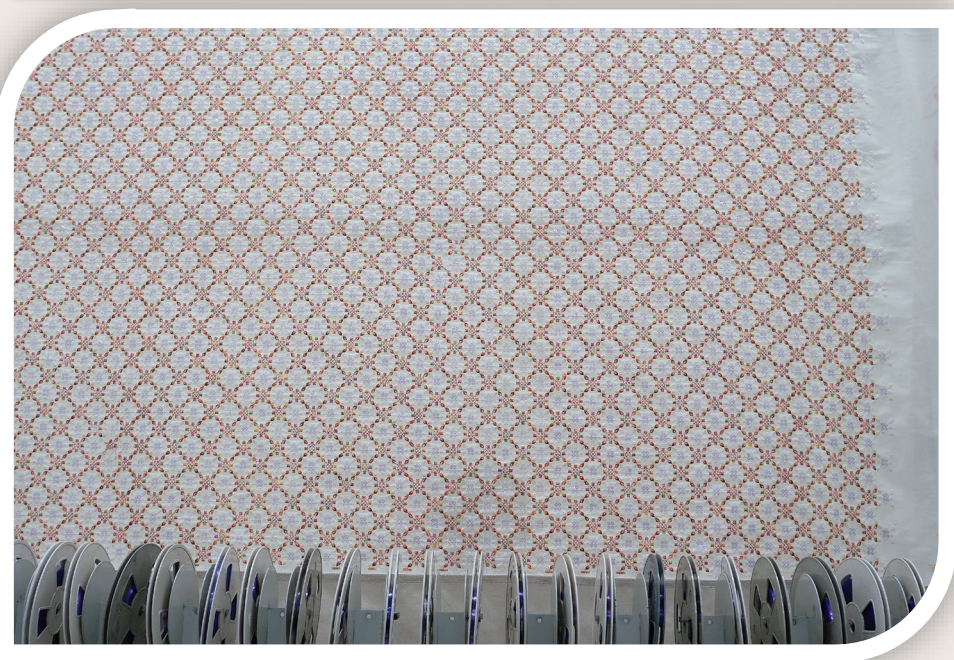
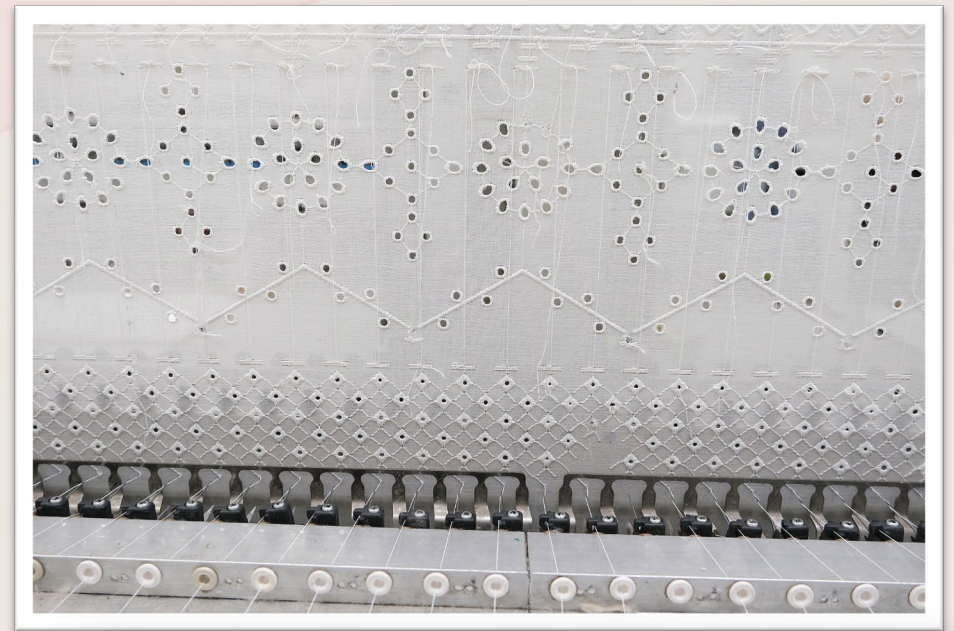
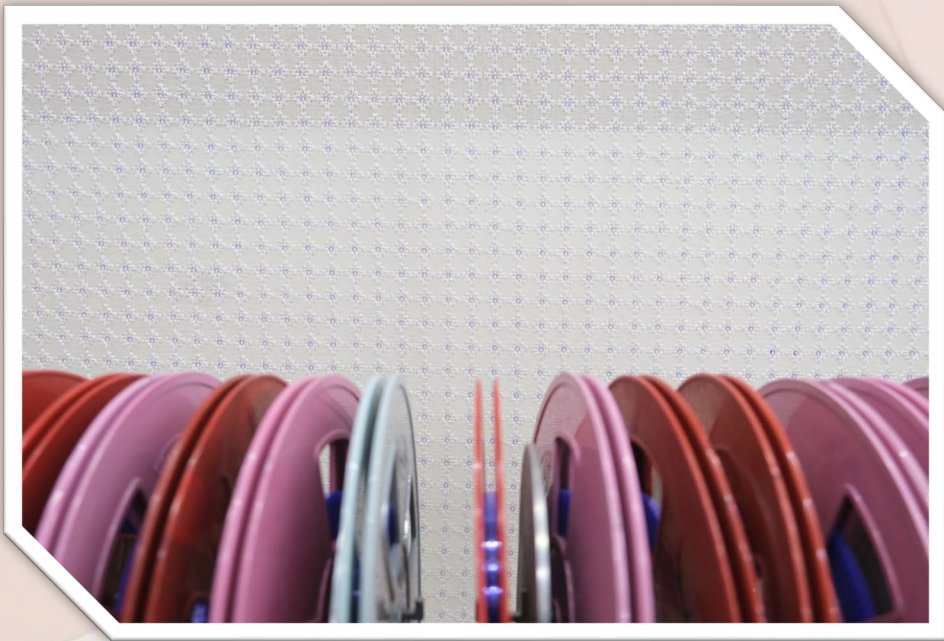




EMBROIDERY

















UTILITY & MACHINERY













The background image shows a tropical campus scene. In the foreground, there is a paved area with a row of parked motorcycles and bicycles on the left. A person in a pink and blue sari is walking towards the left. In the middle ground, there is a white gate with a sign on it, and a person in a yellow shirt is walking through the gate. Behind the gate is a white building with large windows. The background is filled with tall palm trees and other lush greenery. The sky is overcast.

ABOUT THE REPORT

PAL FASHIONS PVT. LTD.
GHG REPORT

About the Report



The company has conducted a **Greenhouse Gas (GHG) accounting study** for its operations from **January 1, 2023, to December 31, 2024**. The following methodologies and standards were used for assessment:

1. GHG Protocol Corporate Accounting and Reporting Standard – Greenhouse Gas Protocol
2. Corporate Value Chain (Scope 3) Accounting and Reporting Standard – Greenhouse Gas Protocol



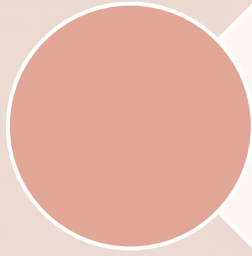
The study follows **ISO 14064-1 & ISO 14064-2** for GHG accounting, covering **Scope 1, Scope 2, and Scope 3 emissions** (direct, energy indirect, and other indirect emissions). The GHG inventory report is prepared to enhance transparency and ensure compliance with stakeholder communication.



This report also includes necessary data assumptions, exclusions, and explanations for any deviations from methodologies. The scope includes all emissions within the operational boundaries of **Pal Fashions Pvt. Ltd., Boisar**.



The facility holds all applicable pollution consents and operates under government regulations. The study involved collecting and analyzing data as per the above standards, ensuring full compliance with environmental regulations.



Organizational Boundary:

Establishing an **organizational boundary** is essential for accurate greenhouse gas (GHG) emissions reporting.



Period of Validity:

This report remains valid until it is superseded by a future revision or until the Company publishes a report that modifies the approach and calculation methodology outlined herein.



Frequency of the Report:

The unit plans to assess its GHG performance annually. This report covers data from January 1, 2023, to December 31, 2024, inclusive of both dates.



Contents:

The report includes data collected method from various sources, and details of emission factors & proper calculation.

Intended Use & Users of the Report

This report is a voluntary communication to various stakeholders of **Pal Brothers Pvt. Ltd**, including customers, management, investors, government agencies, and the public. It serves to monitor GHG emissions performance and to establish a basis for future GHG reduction targets. Stakeholders can track the company's GHG performance over time and refer to this report for future verification of carbon performance, if applicable.

Scope covered: Scope 1, Scope 2 and Scope 3

Management Details:

Mr. Arvinder Singh Ahuja | Chairman cum Managing Director

Mr. Charan Singh Ahuja | Managing Director

Mr. Arjun Singh Ahuja | Managing Director

Verifier: Mr. Rajiv Chaturvedi

Verifier Certificate: ISO 14064-1 & ISO 14064-2

Certificate No.: 117874925 / 165946641:

Issued by: SGS India Pvt. Ltd.

Accounting & Reporting by: Green Compliance Services

List of Emission Factors

Fuel Type	NCV (GJ/ton)	CO ₂ Emission Factor (EF) (kg CO ₂ /GJ)	Source
Solid Fuels			
Coal (Bituminous)	25.0 - 29.3	94.6	IPCC 2006
Lignite	10.0 - 15.0	101	IPCC 2006
Peat	9.0 - 12.0	106	IPCC 2006
Liquid Fuels			
Diesel	42.5	74.1	IPCC 2006
Petrol (Gasoline)	44.3	69.3	IPCC 2006
Jet Fuel (Kerosene)	43	71.5	IPCC 2006
Heavy Fuel Oil (HFO)	40.2	77.4	IPCC 2006
Gaseous Fuels			
Natural Gas	48	56.1	IPCC 2006
Liquefied Petroleum Gas (LPG)	46.1	63.1	IPCC 2006
Refinery Gas	45	60	IPCC 2006
Biomass & Biofuels			
Wood (Dry)	15.6	109.6	IPCC 2006
Bagasse	8.5	97	IPCC 2006
Ethanol	26.9	71.4	IPCC 2006
Biodiesel	37.5	70.8	IPCC 2006

Carbon Footprint – GHG Inventory Reporting

Quantification of GHG emissions and removals

GHG emissions are quantified following the GHG Protocol, but removals are not quantified due to lack of verifiable data. No biogenic fuel is used within the operational boundary.

Calculation steps:

- Identification of GHG sources/sinks
- Selection of quantification methodology
- Selection and collection of GHG activity data
- Selection or development of GHG emission factors
- Calculation of GHG emissions



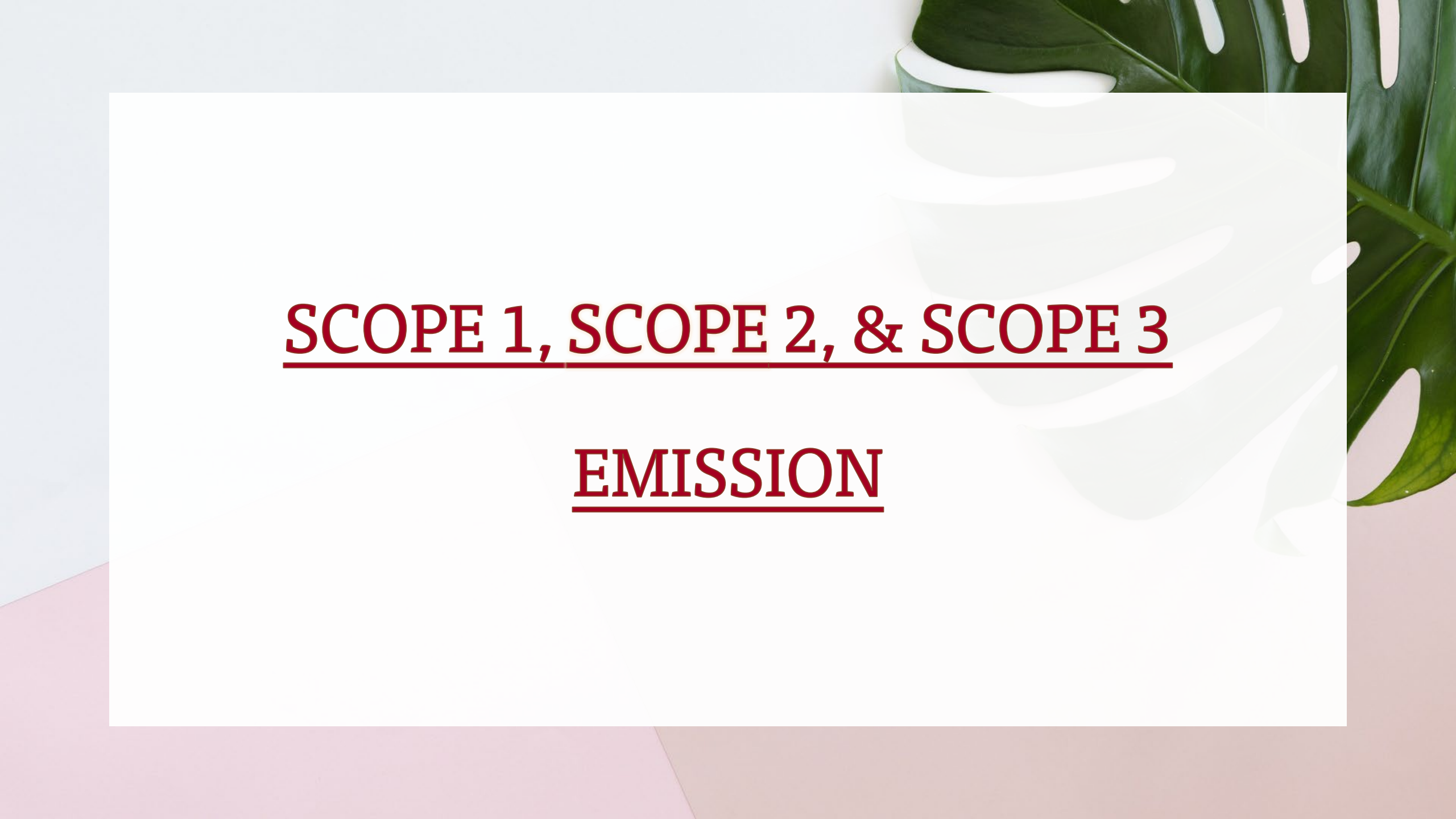
Recycled



Natural



Carbon friendly



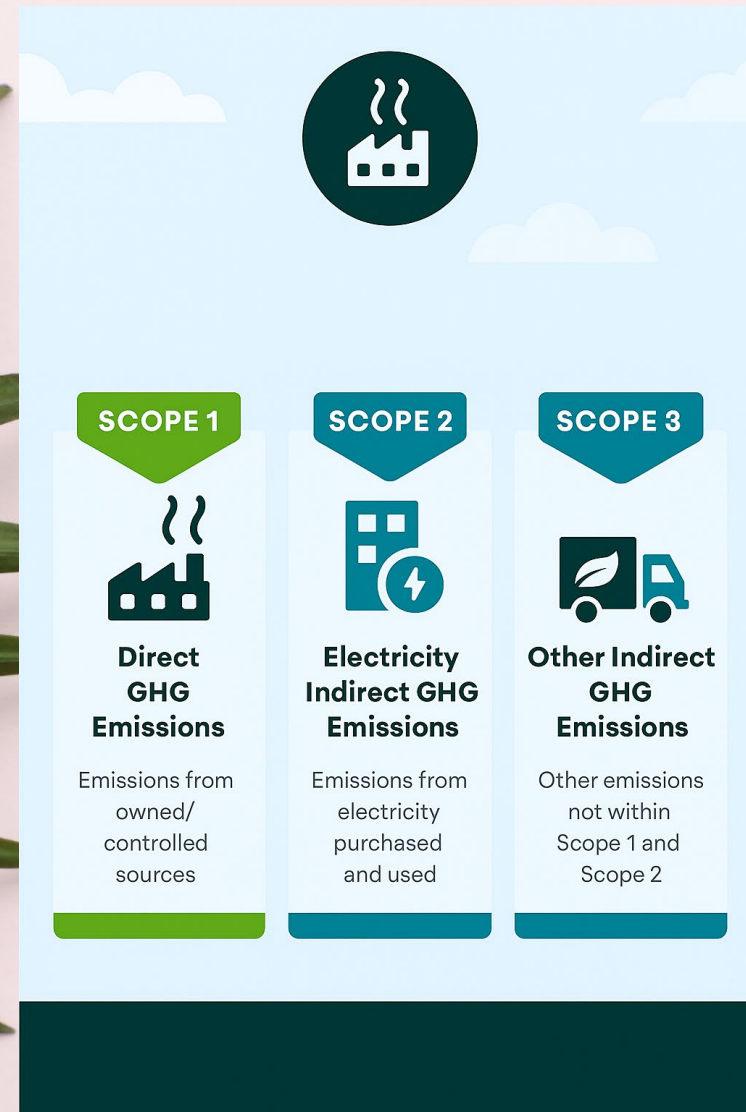
SCOPE 1, SCOPE 2, & SCOPE 3

EMISSION

Direct emissions: Include fossil fuel consumption, PNG gas in DG sets, HFC replenishment in ACs, and fuel use in vehicles under direct administrative control of the unit.

Energy indirect emissions: Result from the electricity purchased from the grid.

Other indirect emissions: Arise from fuel consumption in vehicles used for material transportation, final product dispatch, and employee commutation.



Identification of GHG Sources and sinks

Source GHG Unit			
Scope 1 (Direct Emissions)			
Combustion Sources	Stationary combustion in diesel generators	CO ₂	tCO ₂
	Stationary combustion in boiler	CO ₂	tCO ₂
	Refrigerant loss	CO ₂	tCO ₂
	LPG used in canteen	CO ₂	tCO ₂
Mobile Emissions	Fossil fuel consumption in company-owned vehicles	CO ₂	tCO ₂
Scope 2 (Energy Indirect Emissions)			
Purchased electricity from grid	Emissions associated with power generation in the power plants connected to the regional grid	CO ₂	tCO ₂
Scope 3 (Other Indirect Emissions)			
Transportation & Employee Commutation	Fossil fuel consumption in third party vehicles	CO ₂	tCO ₂

Pal Forest is a relevant GHG sink for the emissions for this unit.



Stationary Combustion

Activity	Activity Data Required	Units	Equations
CO₂ emissions from fossil fuel (diesel) Consumption	Diesel Consumed	Litres	Litres of fuel consumed × Density of fuel × NCV of fuel × EF × 10 ⁻⁶
	Density of diesel	Kg/lit	
	NCV of diesel	TJ/Gg	
	Emission factor of diesel(EF)	tCO ₂ /TJ	
CO₂ emissions from fossil fuel (PNG) Consumption	PNG Consumed	kg	kg of fuel consumed × NCV of fuel × EF × 10 ⁻⁶
	NCV of PNG	TJ/kT	
	Emission factor of PNG (EF)	tCO ₂ /TJ	
CO₂ Emissions from LPG Consumption	Amount of LPG used	kg	amount of LPG used × NCV of fuel × EF × 10 ⁻⁶
	NCV of LPG	TJ/Gg	
	Emission factor of LPG	tCO ₂ /TJ	

Remarks:

Density of diesel assumed as 0.82 kg/lit

Other Emission Sources

Emission Source	Activity Data Required	Units	Equations
HFC emission from refrigerant top up	Amount of HFC top up	Metric tonnes	Amount of HFC top up multiplied by GWP_{HFC}

Energy Indirect Emissions

Emission Source	Activity Data Required	Units	Equation
Purchase of grid electricity	Electricity imported from the grid	kWh	Electricity Imported from grid × Emission factor of grid ×10 ⁻³
	Emission factor of grid	tCO ₂ /kWh	

Remarks:
 Emission factor of grid is taken as 0.82

Mobile Combustion

Emission Source	Activity Data Required	Units	Equation
Emissions due to mobile combustion	Fuel Consumed	Litres	Litres of fuel consumed × Density of fuel × NCV of fuel × EF × 10 ⁻⁶
	Density of the fuel	Kg/lit	
	NCV of the fuel	TJ/Gg	
	Emission factor of fuel	tCO ₂ /TJ	

Other Indirect Emissions

Emission Source	Activity Data Required	Units	Equations
Emissions due to mobile combustion	Fuel Consumed in third party vehicles	Litres	Litres of fuel consumed × Density of fuel × NCV of fuel × EF × 10 ⁻⁶
	Density of fuel	Kg/lit	
	NCV of fuel	TJ/Gg	
	Emission factor of fuel	tCO ₂ /TJ	

The waste data is not considered in GHG accounting as the unit has a legal agreement with a Waste Management Company to responsibly recycle/upstream the waste.

The background of the slide features a close-up, slightly blurred photograph of a potted plant. The plant has long, narrow, dark green leaves that fan out from a central point. It is housed in a light-colored, textured pot, possibly made of wood or stone. The lighting is soft and natural, creating a calm and organic atmosphere.

SCOPEWISE EMISSION YEAR 2023

S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Diesel consumed in DG set (600 kVA)	Scope 1	Ltr	500	500	2250	850	800	1150	1050	350	1450	2400	1900	1100	14300
2	Biomass Pellets (Soyabean)	Scope 1 (Carbon Neutral)	Kg	547670	458777	508858	415443	440426	455244	486152	430290	349660	408998	405795	485211	5392524
3	Company Owned Vehicle (Petrol)	Scope 1	Ltr	89	82	85	89	89	85	92	89	82	89	82	89	1040
4	LPG (Canteen)	Scope 1	Kg	209	190	133	247	190	228	247	209	190	190	209	285	2527
5	Referigerent AC R22	Scope 1	Kg	32.0	32.5	51.0	1.5	40.0	25.5	0.0	24.0	16.0	40.3	0.0	0.0	263
6	Referigerent AC 410 A	Scope 1	Kg	0.0	0.0	6.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	12
7	Referigerent AC R32	Scope 1	Kg	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	10

NOTE: Soybean biomass, primarily derived from agricultural residues such as straw and stalks, presents a renewable alternative to fossil fuels in energy production. When combusted, it emits **biogenic CO₂**, which is typically considered carbon-neutral under international GHG accounting frameworks—provided the biomass is sustainably sourced and regrown. Soybean biomass has a calorific value of approximately **3281.65 kcal/kg**, with low moisture content (<10%), making it suitable for thermal applications. Its use contributes to circular economy goals by valorising agricultural waste.

Scope	Emission source category		t CO2e
Scope 1	Direct emissions	Fuels	82.97
		Passenger Vehicles	1.85
		Refrigerants	762.44
	Total Scope 1		847.26

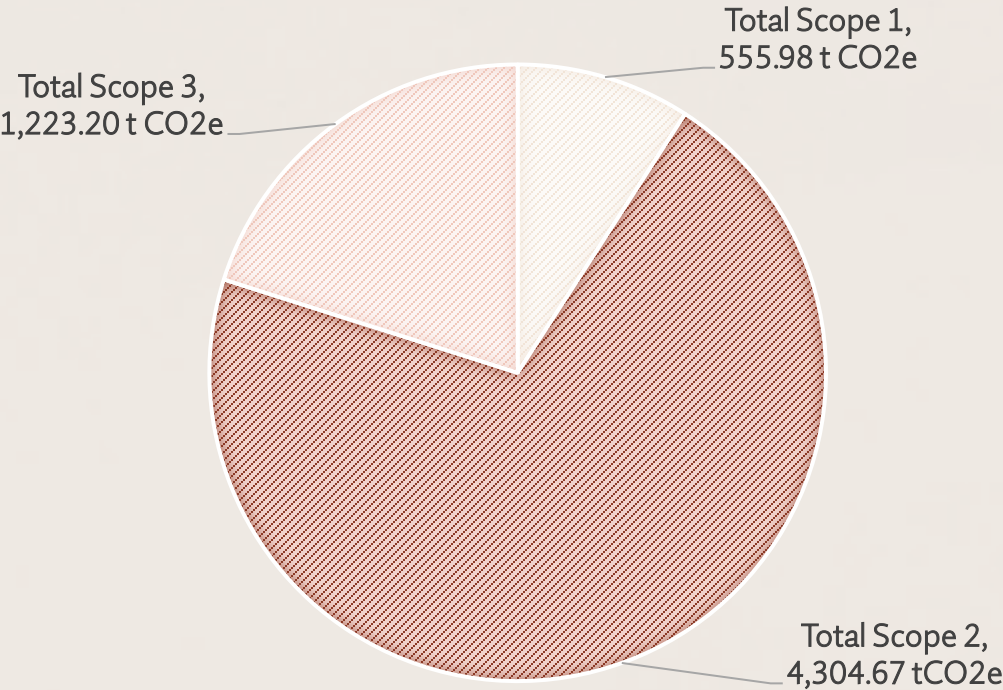
S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Government Grid Electricity	Scope 2	KwH	457670	426220	468280	428870	444560	439580	433070	448735	427730	457490	420375	461835	5314415

Scope	Emission source category		t CO2e
Scope 2	Emissions from the generation of purchased electricity	Generation emissions	3,773.23
		T&D losses	531.44
	Total Scope 2		4,304.67

S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Shipping Distance Kms (By Diesel 40' Truck)	Scope 3	Km	91760	69321	64234	44439	54910	109765	57589	72755	61028	100485	176792	143891	1046969
2	Employee Commute By Motorcycle Petrol	Scope 3	Km	62400	57600	60000	62400	62400	60000	64800	62400	57600	62400	57600	62400	732000

Scope	Emission source category		t CO2e
Scope 3	Indirect Emissions	Freighting goods	1,142.41
		Employees commuting	80.79
		Total Scope 3	1,223.20

Scope	Category	t CO ₂ e
Scope 1	Direct Emissions	555.98
Scope 2	Energy Indirect Emissions	4304.67
Scope 3	Other Indirect Emissions	1223.20
Total Emissions		6083.85





SCOPEWISE EMISSION YEAR 2024

S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Diesel consumed in DG set (600 kVA)	Scope 1	Ltr	1400	700	2500	1950	950	14500	1200	1600	550	1700	950	100	28100
2	Biomass Pellets (Soyabean)	Scope 1 (Carbon Neutral)	Kg	581120	500643	478090	422627	396358	360687	426030	428951	432029	422208	408417	476843	5334003
3	Company Owned Vehicle (Petrol)	Scope 1	Ltr	92	85	85	89	85	89	92	89	85	89	82	92	1053
4	LPG (Canteen)	Scope 1	Kg	133	190	266	152	171	247	228	209	228	190	171	152	2337
5	Referigerent AC R22	Scope 1	Kg	26	87	32	32	27	24	16	16	32	24	16	35	364
6	Referigerent AC 410 A	Scope 1	Kg	0	0	0	5	0	5	15	0	5	10	8	0	48
7	Referigerent AC R32	Scope 1	Kg	0	0	0	0	0	0	0	5	0	0	0	0	5

NOTE: Soybean biomass, primarily derived from agricultural residues such as straw and stalks, presents a renewable alternative to fossil fuels in energy production. When combusted, it emits **biogenic CO₂**, which is typically considered carbon-neutral under international GHG accounting frameworks—provided the biomass is sustainably sourced and regrown. Soybean biomass has a calorific value of approximately **3281.65 kcal/kg**, with low moisture content (<10%), making it suitable for thermal applications. Its use contributes to circular economy goals by valorising agricultural waste.

Scope	Emission source category		t CO ₂ e
Scope 1	Direct emissions	Fuels	46.31
		Passenger Vehicles	1.83
		Refrigerants	507.84
	Total Scope 1		555.98

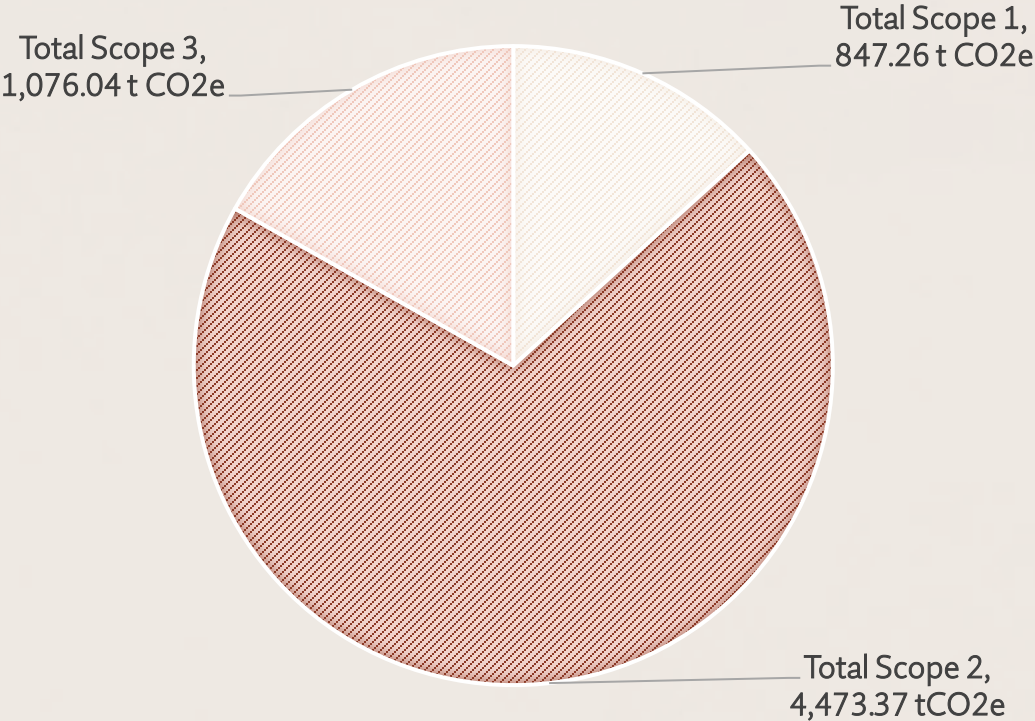
S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Government Grid Electricity	Scope 2	KwH	495035	451210	460365	472785	476035	382920	454640	448865	451885	482145	462155	484635	5522675

Scope	Emission source category		t CO2e
Scope 2	Emissions from the generation of purchased electricity	Generation emissions	3921.10
		T&D losses	552.67
	Total Scope 2		4473.37

S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Shipping Distance Kms (By Diesel 40' Truck)	Scope 3	Km	79854	101912	68744	74788	74188	65124	66870	62614	60726	64786	72891	112299	904796
2	Employee Commute By Motorcycle Petrol	Scope 3	Km	64800	60000	60000	62400	60000	62400	64800	62400	60000	62400	57600	64800	741600

Scope	Emission source category		t CO2e
Scope 3	Indirect Emissions	Freighting goods	994.28
		Employees commuting	81.76
		Total Scope 3	1076.04

Scope	Category	t CO ₂ e
Scope 1	Direct Emissions	847.26
Scope 2	Energy Indirect Emissions	4473.47
Scope 3	Other Indirect Emissions	1076.04
Total Emissions		6396.67



The background of the slide features a close-up, slightly blurred photograph of a potted plant. The plant has long, thin, arching leaves that are a vibrant green color. It is housed in a light-colored, textured pot, possibly made of ceramic or stone. The lighting is soft and natural, highlighting the texture of the leaves and the pot.

GHG EMISSIONS SINK – PAL FOREST

PAL Forests is a pioneering sustainability initiative by Pal Fashions Pvt Ltd, transforming industrial land in Tarapur into dense native forests using the Miyawaki method. With over 25,000 surviving trees, the project aims to achieve carbon neutrality and eventually carbon-negative status.

PAL Forests is the flagship ecological restoration initiative by Pal Fashions Pvt Ltd, located at MIDC Tarapur, Palghar. Inspired by the **Miyawaki method**—a Japanese afforestation technique that fosters rapid, dense growth of native species—the project has successfully cultivated **over 25,000 surviving trees** on plot OS-20, transforming it into a thriving “oxygen bank.”

This effort began on **5th November 2016**, commemorating the birth anniversary of Sardarni Kulwant Kaur Ahuja, with an initial plantation of 2,500 saplings. Since then, the forest has expanded dramatically, achieving a **96% survival rate**, thanks to meticulous planning and biodiversity-focused planting.

The initiative complements PAL’s broader sustainability journey:

- **Zero fossil fuel use since 2008**, with boilers running on bio-waste briquettes
- **Waterless printing and green manufacturing** innovations
- **30% reduction in water consumption** through recycling and reuse
- Eligibility for **carbon credits** due to significant GHG emission reductions

By creating the “**Lungs of Tarapur**,” PAL is not only offsetting its operational emissions but also setting a benchmark for industrial greening. The long-term goal is to become **carbon negative**, reinforcing PAL’s commitment to regenerative sustainability.



Other Afforestation & Complementary Projects Pal Fashions Collaborated:

1. Tarapur Environment Protection Society (Tarapur) – 5000 trees planted
2. Tata Steel Wires Division (MIDC, Boisar) – 11500 trees planted
3. Future Enterprises (Tarapur) – 800 trees planted
4. GIDC (Surat) – 1600 trees planted
5. TMRCT (Boisar) – 4500 trees planted
6. Light of Life Trust (Karjat) – 4500 trees planted
7. Tata Steel (Kurgaon) – 4500 trees planted
8. Viraj Project (Tarapur) – 3000 trees planted
9. Treeevolutions Lungs of Boisar (in collaboration with HDFC Bank) – 114532 saplings planted on the sea bank using Miyawaki method
10. Paper waste is recycled to make inhouse stationary, notebooks for schools
11. Water waste is donated to GOONJ to make sanitary pads for underprivileged girls, bags and clothes

PAL FORESTS

Breathing Life into Tarapur

PAL Fashions Pvt Ltd transforms Plot OS-20, M/DC Tarapur, Palgar into an "oxygen bank" by planting over 25,000 native trees using the Miyawaki method.



5 Nov 2016
Project
launch date



25,000+
Trees



96%
Survival
rate

COMPLEMENTARY INITIATIVES



Zero fossil
fuel use
since
2008



Waterless
printing



30% water
reduction



Carbon
credits
eligibility

FOREST CREATORS HDFC BANK PARIVARTAN											
treevolution NURTURING A GREEN FUTURE CELEBRATING OUR LANDMARK INITIATIVE LUNGS OF BOISAR											
Sr.No	Tree Name	Botanical Name	Qty	Sr.No	Tree Name	Botanical Name	Qty	Sr.No	Tree Name	Botanical Name	Qty
1	Behda	Terminalia bellica	1820	20	Jamun	Syzygium cumini	2560	39	Parigi	Hydnorhiza stenocarpa	730
2	Khar	Besleria calcutta	500	21	Shisham	Dalbergia sissoo	3000	40	Tecoma	Tecoma stans	1000
3	Ajyal	Tamarindus indica	4200	22	Kashid	Cassia siamea	3000	41	Chandni	Alseodermis diorhiza	1000
4	Bersali	Mimosa pudica	3737	23	Neem	Azadirachta indica	1680	42	Karonda	Carissa carandas	1000
5	Shewat	Smilax china	840	24	Kadamb	Nelumbica cactata	2000	43	Gudhal	Hibiscus Rosa Sinensis	1000
6	Kanchhar	Bauhinia variegata	3000	25	Pikhan	Ficus virens	1800	44	Banyan	Ficus bengalensis	1000
7	Palash	Butea monspeliensis	2280	26	Azhoka	Saraca asoca	1920	45	Kamoi	Murraya paniculata	1000
8	Karaj	Milletia pinnata	6600	27	Siris	Albizia lebbbeck	3500	46	Jungle Jalki	Pinocellulium fulva	2200
9	Bamboo	Bambusa nana	2700	28	Matanem	Melia azadirachta	2000	47	Chidli	Helicteres integrifolia	1000
10	Patranjiva	Pyrenees foetida	1250	29	Paras Pipli	Cassia fistula	2000	48	Saru	Cassipouira equisetifolia	5000
11	Aritha	Sapindus mukorossi	200	30	Amaltas	Prosopis juliflora	2000	49	Dill Chandan	Unguis- Catli	1150
12	Mahagony	Bauhinia macrophylla	3500	31	Chukrasia	Chukrasia tabularis	1000	50	Black Ficus	Ficus benjamina	400
13	Kaju	Ascarifus acutifolia	100	32	Sag	Anacardium occidentale	1000	51	Ficus Panda	Ficus religiosa	400
14	Amli Big	Phyllanthus emblica	4500	33	Salmalia	Bombax ceiba	1000	52	Red cherry	Promus padus	1000
15	Statil	Annona squamea	500	34	Khali Imli	Tamarindus indica	1000	53	Rosy Trumpet	Tabebuia rosea	2050
16	Piru	Palour pargua	1800	35	Jackfrail	Artocarpus heterophyllus	1125	54	Gaja Nimba	Citrus Maxima	500
17	Mango	Mangifera indica	1000	36	Anaar	Punica granatum	500	55	Balaji Lemon	Citrus limon	1530
18	Saptaparni	Adiantum ochrolepis	3500	37	Bliva patra	Aegle marmelos	1500	56	Pumai	Colophyllum napthylum	900
19	Sindoor	Bixa orellana	200	38	Kaner	Cassiaia thevetia	1000	57	Ramphal	Ammonia reticulata	300
TOTAL - 114532											
Planted on November 2024 ECF MIYAWAKI FOREST No. 120											





Date: 12th Feb. 2022

Managing Director,
M/s. Pal Fashions Pvt. Ltd.
E-49, Tarapur, MIDC
Palghar, Maharashtra

Sub: Appreciation for providing support for developing Miyawaki Forests in Tarapur

Dear, Mr. Charan Ahuja

We appreciate you and your team for providing support and expertise in developing Miyawaki Forest at our plant, at our officer's colony and at TMRCT Hospital.

Your team helped us throughout the project, right from procurement of tree saplings to plantation as well as training our personnel in the Miyawaki methodology.

These projects have shown exceptional results and are also being replicated in other locations.

Thanks for your support.

B. K. Satish
15/2/22
Satish Kr
Chief of Operations
Tata Steel Limited

TATA STEEL LIMITED

Global Wires - India
Plot No F-8 MIDC Tarapur Industrial Area District Palghar 401 506 India
Tel 91 2525 295000 website www.tatawire.com
Registered Office Bombay House 24 Homi Mody Street Mumbai 400 001 India
Tel 91 22 6665 8282 Fax 91 22 6665 7724
CIN L27100MH1907PLC000260



On 5th June 2017, World Environment Day our Hon'ble Chief Minister Shri Devendra Fadnavis Ji presented the Vasundhara Special Appreciation Award for Tree Plantation to **Pal Fashions Private Limited**.

Pal Fashions Pvt. Ltd. has collaborated to create nearly 11 forests, including the Pal Forest – Lungs of Tarapur. These forests have nearly 60,000 mature trees that contribute to significant GHG emissions sink. It is eligible for carbon credits as the reduction amount is significant.

- The Miyawaki method promotes dense, fast-growing native forests.
- Species selection and soil enrichment may lead to **above-average sequestration rates**.

Calculations:

- 1 mature tree with hardwood may sequester up to 50 kg CO₂/year
- 60000 trees * 50 = 3000000 kg = **3000 t CO₂e**

Metric	Value
Estimated CO ₂ absorption per tree	50 kg/year (conservative)
Total offset from 60,000 trees	≈3000 tCO ₂ e/year
2024 emissions	6,396.67 tCO ₂ e
% Offset Achieved	≈46.9%

NORMALIZED DATA
BASED ON CURRENT DATA

YEAR 2023

YEAR 2023																
S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Shipment	Yearly	m	1067253	758711	748510	568872	723983	813561	864659	1039826	789001	834626	615240	979880	9804122
2	Shipment	Yearly	Kg	190400	147312	132649	99591	133762	150025	158001	199655	141958	174538	116853	190140	1834884
3	Working Days	Yearly	Number	26	24	25	26	26	25	27	26	24	26	24	26	305

GHG Emission (per kg Shipping) - 2023

Total Shipment - 1834884 kg				
Absolute	Scope 1 tCO2e	Scope 2 tCO2e	Scope 3 tCO2e	Total Scope tCO2e
Year 2023	555.98	4304.67	1223.20	6083.85
Normalised	Scope 1 tCO2e Per Kg	Scope 2 tCO2e Per Kg	Scope 3 tCO2e Per Kg	Total Scope tCO2e Per Kg
Year 2023	0.00030	0.00235	0.00067	0.00332

GHG Emission (per meter Shipping) - 2023

Total Shipment - 9804122 m				
Absolute	Scope 1 tCO2e	Scope 2 tCO2e	Scope 3 tCO2e	Total Scope tCO2e
Year 2023	555.98	4304.67	1223.20	6083.85
Normalised	Scope 1 tCO2e Per meter	Scope 2 tCO2e Per meter	Scope 3 tCO2e Per meter	Total Scope tCO2e Per meter
Year 2023	0.00006	0.00044	0.00012	0.00062

NORMALIZED DATA
BASED ON CURRENT DATA

YEAR 2024

YEAR 2024																
S.No.	Description	GHG Scope	Unit	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Shipment	Yearly	m	1024385	1020648	1809180	861035	839728	1094675	786360	1080399	1045133	903339	915579	921133	12301594
2	Shipment	Yearly	Kg	196878	206327	327443	159595	170652	222639	156712	201515	189776	158890	169502	167008	2326937
3	Working Days	Yearly	Number	27	25	25	26	25	26	27	26	25	26	24	27	309

GHG Emission (per kg Shipping) - 2024

Total Shipment - 2326937 kg				
Absolute	Scope 1 tCO2e	Scope 2 tCO2e	Scope 3 tCO2e	Total Scope tCO2e
Year 2024	847.26	4473.37	1076.04	6396.67
Normalised	Scope 1 tCO2e Per Kg	Scope 2 tCO2e Per Kg	Scope 3 tCO2e Per Kg	Total Scope tCO2e Per Kg
Year 2024	0.00036	0.00192	0.00046	0.00275

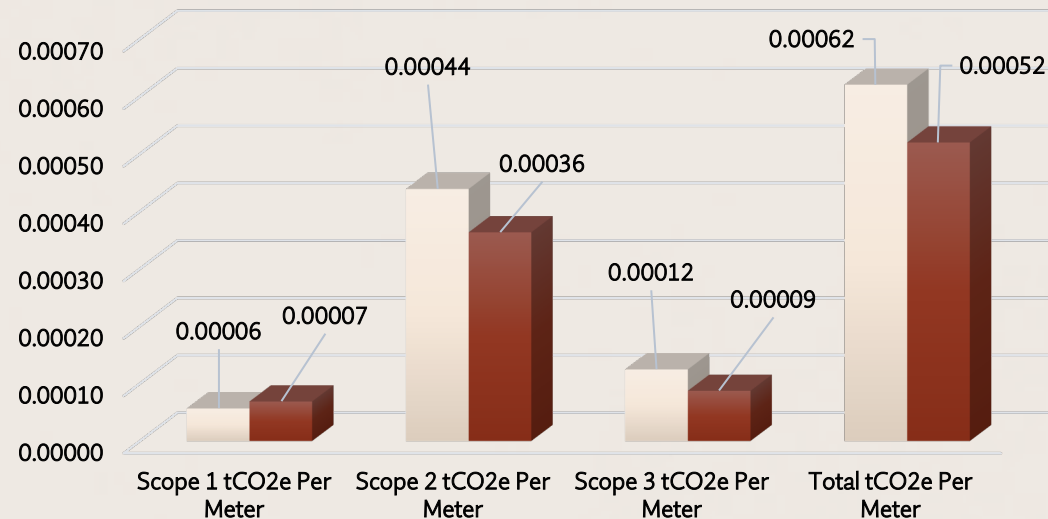
GHG Emission (per meter Shipping) - 2024

Total Shipment - 9804122 m				
Absolute	Scope 1 tCO2e	Scope 2 tCO2e	Scope 3 tCO2e	Total Scope tCO2e
Year 2024	847.26	4473.37	1076.04	6396.67
Normalised	Scope 1 tCO2e Per meter	Scope 2 tCO2e Per meter	Scope 3 tCO2e Per meter	Total Scope tCO2e Per meter
Year 2024	0.00007	0.00036	0.00009	0.00052

PERFORMANCE - 2024
BASE YEAR 2023

Shipment (Meter)				
Year 2023	9804122			
Year 2024	12301594			
Absolute	Scope 1 tCO2e	Scope 2 tCO2e	Scope 3 tCO2e	Total tCO2e
Year 2023	555.98	4304.67	1223.20	6083.85
Year 2024	847.26	4473.37	1076.04	6396.67
Normalised	Scope 1 tCO2e Per Meter	Scope 2 tCO2e Per Meter	Scope 3 tCO2e Per Meter	Total tCO2e Per Meter
Year 2023	0.00006	0.00044	0.00012	0.00062
Year 2024	0.00007	0.00036	0.00009	0.00052
%Performance (- Decrease & + Increase)	Scope 1 tCO2e Per Pc	Scope 2 tCO2e Per Pc	Scope 3 tCO2e Per Pc	Total tCO2e Per Pc
Year 2023	Base Year	Base Year	Base Year	Base Year
Year 2024	21.4521	-17.1787	-29.8903	-16.2041

GHG Inventory- normalised





Confederation of Indian Industry

CII-Green Products and Services Council

hereby certifies that

Cotton Fabric

(GPPFL669001)

Manufactured by **Pal Fashions Private Limited** at **Mumbai, Maharashtra** meets the requirements of GreenPro Ecolabel. The carbon footprint of the product is **19.05 kg CO₂ eq / kg of cotton fabric** based on the Life Cycle Impact Assessment Study (Cradle to Gate) conducted as per IS 14040/14044 standards.

This certification is valid till **December 2027**

Jamshyd N Godrej
Chairman, CII-Godrej GBC

A R Unnikrishnan
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes



Confederation of Indian Industry

CII-Green Products and Services Council

hereby certifies that

Polyviscose Fabric

(GPPFL669002)

Manufactured by **Pal Fashions Private Limited** at **Mumbai, Maharashtra** meets the requirements of GreenPro Ecolabel. The carbon footprint of the product is **10.56 kg CO₂ eq / kg of polyviscose fabric** based on the Life Cycle Impact Assessment Study (Cradle to Gate) conducted as per IS 14040/14044 standards.

This certification is valid till **December 2027**

Jamshyd N Godrej
Chairman, CII-Godrej GBC

A R Unnikrishnan
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes





CII-Green Products and Services Council

hereby certifies that

Viscose Fabric

(GPPFL669003)

Manufactured by **Pal Fashions Private Limited** at **Mumbai, Maharashtra** meets the requirements of GreenPro Ecolabel. The carbon footprint of the product is **6.6 kg CO₂ eq / kg of viscose fabric** based on the Life Cycle Impact Assessment Study (Cradle to Gate) conducted as per IS 14040/14044 standards.

This certification is valid till **December 2027**

Jamshyd N Godrej
Chairman, CII-Godrej GBC

A R Unnikrishnan
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes



CII-Green Products and Services Council

hereby certifies that

Polyester Fabric

(GPPFL669004)

Manufactured by **Pal Fashions Private Limited** at **Mumbai, Maharashtra** meets the requirements of GreenPro Ecolabel. The carbon footprint of the product is **10.59 kg CO₂ eq / kg of polyester fabric** based on the Life Cycle Impact Assessment Study (Cradle to Gate) conducted as per IS 14040/14044 standards.

This certification is valid till **December 2027**

Jamshyd N Godrej
Chairman, CII-Godrej GBC

A R Unnikrishnan
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes





Confederation of Indian Industry

CII-Green Products and Services Council

hereby certifies that

Polycotton Fabric

(GPPFL669005)

*Manufactured by **Pal Fashions Private Limited** at **Mumbai, Maharashtra** meets the requirements of GreenPro Ecolabel. The carbon footprint of the product is **10.63 kg CO₂ eq / kg of polycotton fabric** based on the Life Cycle Impact Assessment Study (Cradle to Gate) conducted as per IS 14040/14044 standards.*

*This certification is valid till **December 2027***

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A R Unnikrishnan
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes



Suggestions to Reduce Emissions

Consider switching to air conditioners with R-32 refrigerant gas.

Update to BS6 technology genset.

Shift to solar energy to reduce the consumption of grid energy, eventually reducing Scope 2 emission.
Every 1,000 kWh from solar avoids ~800–1,000 kg CO₂e.

Consolidate shipments significantly improve Scope 3 emissions.

This could reduce the impact by 10-15% annually.

Factory-owned vehicles should be switched to CNG or Electric. This will reduce the Scope 1 emissions.

Further, to reduce Scope 2 emissions the unit should consider investing in RECs.

Shift to cargo vehicles with cleaner fuels to reduce Scope 3 emissions. For longer distances, rail could be considered.



END OF THE REPORT