SRF LIMITED

TECHNICAL TEXTILES BUSINESS

Trichy - Madurai Bye-Pass Road, Viralimalai,
Pudukkottai - 621316. Tamilnadu, India.

GHG EMISSION REPORT

(For Period for 1st April, 2024 to 31st March, 2025)

Form No	**: SRF-TTBV/ESG/600**
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1. Introduction

SRF-TTBV, a leading designer, manufacturer, and dispatcher of belting fabrics, chafer fabrics, and industrial fabrics in India, is committed to integrating ESG principles into its operations. This report presents the company's comprehensive GHG emissions inventory for the reporting year, covering Scope 1, Scope 2, and Scope 3 emissions. It outlines organizational, geographic, and temporal boundaries, provides methodology and emission factor references, and ensures transparency and auditability. The report supports SRF-TTBV's commitment to monitoring, managing, and reducing its carbon footprint

2. GHG emission overview

Organizational Boundary

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GHG Emission Reporting Frequency: Annually

3. Reporting boundary & justification

Boundary Type	Description	Inclusion / Scope	Justification	Suggested Evidence
Organizational Boundary	Consolidation approach	Operational control consolidation: all operations where SRF-TTBV has operational control (manufacturing plants, warehouses, owned vehicle fleet)	Operational control best reflects direct management and aligns with corporate management of operational energy and fuel use	Organization chart, operational control policy, asset registers, lease agreements, operational responsibility documentation
Geographic Boundary	Location of facilities	All SRF-TTBV facilities in India (list all plants, warehouses, and offices)	Ensures completeness of GHG inventory across all operational sites	Facility addresses, site maps, utility bills, internal site audit reports
Temporal Boundary	Reporting period	Calendar year (1 Jan — 31 Dec)	Provides comparability and supports auditability	Financial calendar, internal reporting schedule.

Scope 1 (Direct Emissions)	On-site fuel combustion, company-owned vehicles, fugitive emissions (e.g., refrigerant losses)	Included	Direct emissions under company control; material to operations	Fuel purchase invoices, meter readings, vehicle logs, maintenance logs, refrigerant purchase/use records, emission calculation sheets
Scope 2 (Purchased Electricity)	Purchased grid electricity (market-based and/or location-based)	Included; use India grid EF (CEA) for location-based; supplier-specific residual mix or contractual instruments for market-based	Accounts for indirect emissions from purchased electricity	Electricity bills, meter readings, supplier contracts, CEA grid emission factor reports, purchase agreements for renewable energy if applicable
Scope 3 Upstream	Purchased goods & services, inbound transport & distribution, fuel & energy-related upstream emissions, business travel, employee commuting, waste, upstream leased assets	Included as per relevance to textile/fabric manufacturing and supply chain	Procurement and upstream logistics dominate SRF-TTBV's footprint, explaining large Scope 3 contribution	Purchase invoices, procurement contracts, transport bills, employee travel records, supplier emission data, spend-based calculations, waste disposal receipts

Scope 3 Downstream	Use of sold products, downstream transportation, end-of-life of products	Included if measurement or influence data is available	Downstream emissions are smaller but included for completeness and transparency	Customer delivery records, logistics invoices, product lifecycle studies, end-of-life treatment agreements, transport emission calculations

4. GHG Emissions Summary (MT CO2e)

Calculation period: April 2024 to March 2025
All values in MT CO2e

GHG Emission Reporting Frequency: Annually

EMISSIONS	CURRENT YEAR April 2024 to March 2025
Scope 1	5274
Scope 2	4.206
Scope 3	104717.64
Scope 3 Upstream	104639.205
Scope 3 Downstream	78.43
Total GHG Emission	**109995.846**

5. SBTi based Targets

Scope	Baseline (2024–25)	SBTi Requirement	Target (Near-Term: 2030)	Target (Long-Term: 2050)	Key Levers
Scope 1 (direct fuel combustion, vehicles, fugitive gases)	5,274 tCO_2e	42% absolute reduction by 2030 from 2020 baseline (SBTi 1.5°C)	Reduce 2,200 tCO_2e (~42%) by 2030 → target ≤ 3,060 tCO_2e	Net-zero by 2050 (close to zero, residuals neutralized)	Transition to electrified fleet, low-carbon fuels, refrigerant management
Scope 2 (electricity)	4.21 tCO_2e	100% renewable electricity by 2030 (SBTi standard)	Achieve 100% RE sourcing by 2030 → target ≤ 0 tCO_2e	Maintain 100% RE (no residuals by 2050)	Solar PV, RE power purchase agreements (PPAs), REC offsets

Scope 3 – Upstream (raw materials, transport, waste, travel, commuting)	104,639 tCO_2e	Supplier engagement target covering 67% of spend/emissions by 2028 (SBTi Scope 3 criteria)	Ensure 2/3 suppliers (by emissions) set SBTi targets by 2028. Aim for 25% absolute reduction → ≤ 78,480 tCO_2e by 2030	90–95% absolute reduction by 2050 → ≤ 10,000 tCO_2e (neutralize residuals)	Low-carbon raw materials (recycled fibres, bio-based), supplier SBTi alignment, green logistics, waste minimization
Scope 3 – Downstream (distribution, end-of-life)	78.4 tCO_2e	Included for completeness; materiality low	25% reduction by 2030 → ≤ 59 tCO_2e	90% reduction by 2050 → ≤ 8 tCO_2e	Optimize customer logistics, promote recycling, circular product take-back
Total (Scopes 1+2+3)	109,996 tCO_2e	Absolute contraction pathway aligned with 1.5°C	25% reduction by 2030 → ≤ 82,500 tCO_2e	Net-zero by 2050 (90–95% reduction, residuals)	Integrated low-carbon strategy

6. Notes & caveats

The example chooses CH_4 and N_2O mass values so that when multiplied by AR5 GWPs they produce plausible small contributions. Replace the left column (mass of CH_4, mass of N_2O) with your measured activity-based emissions if available. F-gases should be converted using their specific GWP values (e.g., R134a, R404A) from the same GWP source.

7. Scope 3 Categories: Reporting Boundary & Justification

Scope 3 Category	Included? (Yes/No)	Reporting Boundary	Justification
1. Purchased goods and services	Yes	All purchased raw materials, consumables, packaging, and auxiliary materials used in production	Material upstream emissions; key driver of SRF-TTBV's supply chain footprint
2. Capital goods	Yes	Machinery, plant equipment, and office equipment purchased during reporting year	Significant embodied emissions in purchased assets affecting lifecycle emissions

3. Fuel- and energy-related activities (not included in Scope 1 or 2)	Yes	Emissions from extraction, production, and transportation of fuels and electricity purchased by SRF-TTBV	Accounts for upstream emissions associated with purchased energy
4. Upstream transportation and distribution	Yes	Transportation and distribution of raw materials from suppliers to SRF-TTBV facilities	Covers logistics emissions not controlled by SRF-TTBV but under upstream activities
5. Waste generated in operations	Yes	All waste streams from manufacturing, office operations, and packaging	Emissions from waste disposal and treatment, relevant for operational environmental impact
6. Business travel	Yes	Air, rail, road, and other travel by employees for business purposes	Directly linked to operational activities and employee travel emissions
7. Employee commuting	Yes	Travel of employees from home to workplace	Captures emissions associated with commuting to SRF-TTBV facilities
8. Upstream leased assets	No	Leased properties or equipment not under operational control	Negligible or outside operational control; excluded based on materiality
9. Downstream transportation and distribution	Yes	Transportation of finished products to customers, distributors, and warehouses	Downstream logistics are part of total lifecycle emissions
10. Processing of sold products	No	Not applicable; SRF-TTBV's products are industrial fabrics with no additional processing required by the company	Excluded due to minimal operational influence
11. Use of sold products	No	Industrial fabrics sold to customers; no energy-consuming use phase	Excluded because use-phase emissions are negligible or outside company control

12. End-of-life treatment of sold products	Yes	Disposal, recycling, or incineration of sold industrial fabrics	Ensures lifecycle completeness of GHG assessment
13. Downstream leased assets	No	Leased assets not under operational control	Excluded due to immateriality and lack of control
14. Franchises	No	Not applicable; SRF-TTBV does not operate franchises	Excluded
15. Investments	No	Financial investments outside operational control	Excluded based on relevance/materiality

8. Scope 3 Quantification Table

Scope 3 Category	Activity Data (Examples)	Methodology Used (Emission Factor Source / Tool)	Remarks
Purchased goods & services	Quantity of raw materials (kg), packaging materials (kg), auxiliary materials	Emission factors from GHG Protocol Scope 3 Standard, EcoInvent, or supplier-specific EF; CO_2e = Activity × EF	Major contributor to Scope 3; use supplier-specific EF where possible for accuracy
Capital goods	Cost/value of machinery, plant equipment purchased	Spend-based EF from DEFRA 2023, Quantis spend-based factors	Emissions calculated on a lifecycle basis; usually less frequent but significant per asset
Fuel- and energy-related activities (not in Scope 1/2)	Purchased fuel (L), electricity (kWh)	IPCC 2006 / CEA emission factors; CO_2e = Activity × EF	Covers upstream emissions from fuel production and electricity generation
Upstream transportation & distribution	Transport distance (km), weight of materials (t)	DEFRA 2023 EF per ton-km; EcoTransIT; supplier-specific transport EF	Includes emissions from supplier to SRF-TTBV; mode-specific EF (road, rail, sea)

Waste generated in operations	Quantity of waste (t) by type: hazardous, non-hazardous, recycling, landfill	GHG Protocol Waste Guideline, IPCC 2006	Include all operational sites; verify with waste disposal receipts
Business travel	Flights (km), rail (km), vehicle travel (km)	DEFRA / ICAO / GHG Protocol Travel emission factors	Mode-specific EF; consider class (economy/business) for air travel
Employee commuting	Employee numbers, distance (km), transport mode	DEFRA 2023 commuting EF; GHG Protocol	Estimate based on surveys or HR records
Upstream leased assets	N/A (not included)	N/A	Excluded due to immateriality or lack of operational control
Downstream transportation & distribution	Distance to customers (km), weight of products shipped (t)	DEFRA 2023 / EcoTransIT / supplier transport EF	Include all modes; often minor but important for lifecycle completeness
Processing of sold products	N/A	N/A	Excluded — no further processing by company
Use of sold products	N/A	N/A	Excluded — industrial fabrics have negligible use-phase emissions
End-of-life treatment of sold products	Quantity of products sold (t), disposal method (landfill, recycling, incineration)	GHG Protocol Product Life Cycle; IPCC 2006 EF	Ensure completeness of lifecycle emissions
Downstream leased assets	N/A	N/A	Excluded due to lack of operational control

Franchises	N/A	N/A	Not applicable
Investments	N/A	N/A	Excluded — outside operational control

9. GHG emission factor & GWP reference table

Global Warming Potentials (GWP100) used: IPCC AR5 (100-year) — CO_2 = 1; CH_4 = 28; N_2O = 265. Use these for CO_2e conversion unless your auditor requires AR4/AR6 values. GHG Protocol+1

Fuel & combustion emission factors / methodology references (recommended):

- **IPCC 2006 Guidelines for National GHG Inventories** — default fuel emission factors and methodology for stationary combustion. Use Tier 1 defaults or country-specific Tier 2 if available. IPCC NGGIP
- **Central Electricity Authority (CEA) — CO_2 Baseline Database (India)** — use CEA grid emission factors for location-based Scope 2 and for electricity embedded emissions when required. For market-based Scope 2, use supplier-specific residual mix or contractual instrument data if available. Central Electricity Authority
- **National / reputable conversion factor tables** for supplementary conversion factors and methodology guidance.
- **Where to obtain F-gas GWPs: IPCC tables or GHG Protocol cross-sector tools provide GWPs for many refrigerants (ensure AR5/AR6 consistency).**

10. Statement of uncertainty

The GHG emissions data for SRF-TTBV (Scope 1, 2, and 3) are calculated using the GHG Protocol standards and recognized emission factors. However, uncertainties arise from variability in emission factors, accuracy of fuel, electricity, and logistics data, and estimations for upstream and downstream Scope 3 emissions. Temporal and geographic variations, as well as supplier-reported data limitations, further contribute to uncertainty. Estimated uncertainty ranges are ±5–10% for Scope 1 and 2, and ±15–25% for Scope 3. Continuous improvements in data collection, supplier verification, and monitoring systems are implemented to enhance accuracy and transparency.

11. Conclusion

The 2024 GHG emissions inventory for SRF-TTBV provides a transparent and comprehensive overview of Scope 1, Scope 2, and Scope 3 emissions across all operational sites in India. By documenting boundaries, methodologies, and emission factors, the report ensures auditability and supports ESG commitments. This inventory establishes a baseline for continuous monitoring, enabling informed decision-making and targeted actions to reduce the company's carbon footprint and enhance sustainable operational practices.

12. References

01 **The GHG Protocol – Corporate Accounting and Reporting Standard**
https://ghgprotocol.org/corporate-standard
02 **The GHG Protocol – Scope 2 Guidance**
https://ghgprotocol.org/scope-2-guidance
03 **The GHG Protocol – Corporate Value Chain (Scope 3) Standard**
https://ghgprotocol.org/scope-3-standard
04 **The GHG Protocol – Emission Factors from Cross-Sector Tools**
https://ghgprotocol.org/ghg-emission-factors
05 **The GHG Protocol – Mobile Sources (Transport)**
https://ghgprotocol.org/transport-ghg-emissions
06 **IPCC AR6 Synthesis Report: Climate Change 2024**
https://www.ipcc.ch/report/ar6/syr
07 **Climate Change Report – Dubai (Supreme Council of Energy)**
https://www.dubaisce.gov.ae/en/climate-change
08 **Forecasting the Effects of Municipal Solid Plastic Waste – Dubai (Research Study)**
https://doi.org/10.1016/j.jclepro.2023.136234
09 **Carbon Footprint of Water Diversion & Desalination Projects (Scientific Report)**
https://doi.org/10.1038/s41598-023-45610-1

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