

Carbon Emissions Report (Scope 1 & 2) for the FY 2024-25

1. Objective

Balark monitors, quantifies, and reports greenhouse gas (GHG) emissions to:

- Identify major emission sources
- Track year-on-year performance
- Implement emission reduction initiatives
- Demonstrate transparency and continuous improvement

2. Reporting Standard & Methodology

- **Standard Used:**
GHG Protocol – Corporate Accounting & Reporting Standard
- **Boundary Definition:**
Operational Control Approach
- **Coverage:**
Entire manufacturing operations at the Jamnagar facility, including utilities and company-owned vehicles
- **Data Sources:**
 - Electricity bills
 - Diesel & petrol issue registers
 - DG set logbook
 - Solar inverter generation reports

3. Emission Sources Covered

Category	Source Included
Energy Consumption	Grid electricity
Fuel Consumption	Diesel (DG set), Petrol (vehicles), Diesel (Vehicles)
Renewable Energy	300 kVA on-site solar power
GHG Emissions	Scope 1 & Scope 2

4. Scope Definition

Scope 1 – Direct Emissions

- Diesel consumed in the standby DG set
- Petrol, Diesel consumed by company-owned vehicles

Scope 2 – Indirect Emissions

- Purchased electricity from the state grid
- On-site solar power (reported as renewable energy & emission avoidance)

5. Emission Factors Applied

Source	Emission Factor
Grid Electricity (India)	0.82 kg CO ₂ e / kWh
Diesel	2.68 kg CO ₂ e / litre
Petrol	2.31 kg CO ₂ e / litre
Solar Power	0 kg CO ₂ e / kWh

Emission factors are aligned with Central Electricity Authority (CEA), IPCC, and GHG Protocol references.

6. Activity Data Summary

Energy Source	Unit	Annual Consumption
Purchased Electricity	kWh	6,07,069
Diesel – DG Set	Litres	4,403
Petrol – Vehicles	Litres	470
Diesel – Vehicles	Litres	3,526
Solar Power Generation (300 kVA)	kWh	3,36,000

7. GHG Emissions Calculation

7.1 Scope 2 – Purchased Electricity

- Emissions = Electricity (kWh) × Emission Factor
- $6,07,069 \times 0.82 = 497,796 \text{ kg CO}_2\text{e}$
- **Total: 497.79 tCO₂e**

7.2 Scope 1 – Diesel (DG Set)

- $4,403 \times 2.68 = 11,800 \text{ kg CO}_2\text{e}$
- **Total: 11.80 tCO₂e**

7.3 Scope 1 – Petrol (Vehicles)

- $470 \times 2.31 = 1,085 \text{ kg CO}_2\text{e}$
- **Total: 1.08 tCO₂e**

7.4 Renewable Energy – Solar Power (Emission Avoidance)

- Avoided emissions = Solar generation × Grid EF
- $3,36,000 \times 0.82 = 2,75,520 \text{ kg CO}_2\text{e avoided}$
- **Total Avoided: 275.52 tCO₂e**

8. Consolidated Emissions Summary

Category	Emissions (tCO ₂ e)
Scope 1 – Diesel	11.80
Scope 1 – Petrol	1.08
Scope 2 – Electricity	497.79
Gross Emissions	510.67
Renewable Energy Offset	-275.52
Net Emissions	235.15

9. Emission Reduction Measures

Measure	Description	Status
Solar Power Installation	300 kVA rooftop solar system	Implemented
DG Usage Reduction	DG is used only during power outages	Ongoing
Energy Efficiency	LED lighting & energy-efficient machines	Ongoing
Preventive Maintenance	Optimised fuel and energy performance	Ongoing

10. Targets & Continuous Improvement

Area	Target
Scope 1 Emissions	10% reduction by FY 2026
Renewable Energy	Use of 80% renewable electricity by increasing solar installation capacity from 300 KVA to 600 KVA by 2028.
Monitoring	Annual carbon footprint review

11. Monitoring & Review Mechanism

- Monthly tracking of electricity and fuel consumption
- Solar generation monitored via inverter reports
- Annual review by management
- Corrective actions are initiated where deviations are identified

HSE Coordinators are responsible for implementation, monitoring, and reporting.

12. Evidence Available for Verification

- ✓ Electricity bills
- ✓ Fuel purchase & issue records
- ✓ DG logbooks / Diesel consumption Bills
- ✓ Solar generation reports
- ✓ Management review minutes

13. Declaration

Balark confirms that the information provided in this document is accurate to the best of its knowledge and prepared in alignment with recognised GHG accounting principles. The organisation is committed to reducing its environmental footprint and continuously improving its sustainability performance.

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