JANANI CASHEW INDUSTRY

No.485/4, Keezkha Kuppam Road, Kadambuliyur & Post, Panruti Taluk,
Cuddalore District- 607103, Tamilnadu, India.

GHG EMISSION REPORT

For the Year April 2024 – March 2025

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Prepared by: Mr. GNANAMOORTHY
Designation: GENERAL MANAGING

Janani Cashew Industry Kadampuliyur Panruti

Approved by: Mr. D. PANURANGAN
Designation: MANAGING DIRECTOR

1. Executive Summary

Overview of Organization and Reporting Period

JCI is an Indian manufacturing company engaged in the **processing of cashew kernels, extraction of cashew nut shell liquid (CNSL), production of cashew oil, and development of value-added carbon products from cashew by-products**. The organization integrates **Environmental, Social, and Governance (ESG) principles** into its operational framework. This Greenhouse Gas (GHG) inventory report has been prepared for the **reporting period from 1st April, 2024 to 31st March, 2025** in accordance with **ISO 14064-1:2018 and the GHG Protocol Corporate Standard**.

Key Emission Results

Organizational Boundary

JANANI CASHEW INDUSTRY

No.485/4, Keezkha Kuppam Road, Kadambuliyur & Post, Panruti Taluk, Cuddalore District - 607103, Tamilnadu, India.

Calculation period: April 2024 to March 2025

All values are in MT CO2 e

GHG Emission Reporting Frequency: Annually

Scope	Emissions (tCO_2e)
Scope 1	12.86
Scope 2	70.35
Scope 3	2267.46
Scope 3 Upstream	2187.9
Scope 3 Downstream	79.56
Total Carbon Footprint	**2350.67 tCO_2e**

Scope 3 emissions constitute the **largest portion of emissions**, mainly from **raw material procurement, transportation, and supply chain activities**.

Highlights & Reduction Achievements

Key sustainability initiatives undertaken during the reporting year include:

- Utilization of **cashew shells and by-products as biomass fuel**
- Energy efficiency improvements in **processing equipment**
- Reduction in **solid waste disposal through circular economy practices**
- Increasing focus on **value-added carbon products from cashew waste**
- Supplier awareness initiatives for **sustainable sourcing**

2. Introduction

Purpose of the Report

The purpose of this report is to:

- Quantify greenhouse gas emissions associated with JCI operations
- Establish a **baseline for carbon management**
- Identify **emission reduction opportunities**
- Demonstrate commitment to **sustainability and ESG integration**

Intended Users

This report is intended for:

- Company management
- Customers and supply chain partners
- ESG rating agencies
- Regulatory bodies
- Sustainability auditors
- Investors and stakeholders

Reporting Objectives

The objectives of this report include:

- Compliance with **ISO 14064-1 greenhouse gas accounting requirements**
- Alignment with **GHG Protocol Corporate Accounting Standard**
- Meeting **customer sustainability reporting requirements**
- Supporting **corporate ESG strategy**

3. Organization Description

Company Profile

JCI is engaged in:

- Processing and exporting **cashew kernels**
- Production of **CNSL (Cashew Nut Shell Liquid)**
- Extraction of **cashew oil**
- Manufacturing **value-added carbon products from cashew by-products**

The organization focuses on resource efficiency, waste valorization, and circular economy principles.

Organizational Structure

The organization includes the following key operational functions:

- Raw material procurement
- Cashew processing operations
- CNSL extraction
- Carbon product development
- Packaging and logistics
- Administration and management

Operations, Facilities, and Boundaries

Operations include:

- Cashew processing facility
- CNSL extraction unit
- Storage and packaging facility
- Administrative offices

4. Reporting Boundary

Organizational Boundary

JCI has adopted the **Operational Control Approach** in defining its organizational boundary.

Under this approach, emissions from **operations where JCI has full operational control** are included in the inventory.

Operational Boundary

Emissions are categorized into three scopes:

- **Scope 1:** Direct emissions from owned or controlled sources
- **Scope 2:** Indirect emissions from purchased electricity
- **Scope 3:** Other indirect emissions from the value chain

Entities and Locations Covered

The following locations are included:

- Cashew processing plant
- Storage and packaging units
- Administrative offices

5. Reporting Period

Start Date: **01 April 2024**
End Date: **31 March 2025**

Frequency of Reporting: **Annual**

6. GHG Accounting Methodology

Standards Followed

This GHG inventory was developed in accordance with:

- **ISO 14064-1:2018**
- **GHG Protocol Corporate Accounting and Reporting Standard**
- **IPCC Guidelines for National Greenhouse Gas Inventories**

Calculation Approach

Emissions were calculated using the formula:

GHG Emissions = Activity Data × Emission Factor

Where:

Activity Data examples include:

- Electricity consumption
- Fuel consumption
- Transportation distances
- Raw material quantities
- Waste disposal

Tools Used

- Spread sheet-based GHG accounting model
- Emission factor databases
- Internal production records

7. Emission Sources Identification

Major emission sources identified in JCI operations include:

Direct Sources

- Diesel consumption in generators
- Fuel use in boilers
- Company vehicles
- Refrigerant leakage

Indirect Sources

- Purchased electricity
- Raw material transportation
- Waste disposal
- Employee commuting
- Product distribution

8. GHG Scope Classification

8.1 Scope 1 – Direct Emissions

Sources include emissions from:

Stationary Combustion

- Boilers used in processing
- Diesel generators for backup power

Mobile Combustion

- Company vehicles used for logistics and operations

Fugitive Emissions

- Refrigerant leakage from air-conditioning systems

Process Emissions

- Minor emissions from **CNSL extraction processes**

Total Scope 1 Emissions: **12.86 tCO_2e**

8.2 Scope 2 – Indirect Energy Emissions

Scope 2 emissions arise from **purchased electricity consumed in processing operations**.

Major electricity consumption areas include:

- Processing machinery
- Oil extraction units
- Lighting and ventilation
- Office operations

Total Scope 2 Emissions: **70.35 tCO_2e**

8.3 Scope 3 – Other Indirect Emissions

Scope 3 emissions occur across the value chain.

Total Scope 3 Emissions: **2267.46 tCO_2e**

Upstream Emissions

- Purchased raw materials (cashew nuts)
- Transportation of raw materials
- Packaging materials
- Waste disposal

Total Upstream Emissions: **2187.9 tCO_2e**

Downstream Emissions

- Distribution of finished products
- Product transportation to customers

Total Downstream Emissions: **79.56 tCO_2e**

9. GHG Data Collection & Quality

Data Sources
Data was collected from:

- Electricity bills
- Fuel purchase records
- Transportation logs
- Procurement records
- Waste management documentation

Accuracy & Completeness

The data collected represents:

- Actual operational consumption
- Full coverage of operational activities
- Verified internal records

Data Management Controls

The following controls were implemented:

- Internal cross verification
- Management review
- Standardized data collection templates

10. Emission Factors

Emission factors were sourced from:

- **IPCC Emission Factor Database**
- **DEFRA Conversion Factors**
- **GHG Protocol India Grid Emission Factor**
- **IEA Electricity Emission Factors**

Typical units used include:

- kg CO_2e / kWh
- kg CO_2e / litre fuel
- kg CO_2e / ton transported

11. Calculation Results

11.1 Total GHG Emissions

Scope	Emissions (tCO_2e)
Scope 1	12.86
Scope 2	70.35
Scope 3	2267.46
Scope 3 Upstream	2187.9
Scope 3 Downstream	79.56
Total	**2350.67 tCO_2e**

Gas wise Breakdown (Scope 1)

Gas	Emissions
CO_2	11.95
CH_4	0.65
N_2O	0.26

11.2 Emission Breakdown by Source

Major emission contributors:

Source	Contribution
Raw Material Procurement	High
Electricity Use	Medium
Transportation	Medium
Fuel Combustion	Low

Scope 3 emissions dominate the footprint.

11.3 Emission Intensity Indicators

Assumptions for analysis:

Employees: **24**

Production: **2350.67 tCO_2e tons/year**

Indicators:

Indicator	Value
CO_2e per employee	81.06 tCO_2e / employee
CO_2e per ton production	0.47 tCO2e/ton

12. Base Year & Trend Analysis

Base Year: **FY 2024**

This year has been selected as the base year because:

- First comprehensive GHG inventory completed
- Reliable operational data available

Future inventories will be compared with this baseline.

13. Uncertainty Assessment

Sources of uncertainty include:

- Supplier emission estimates
- Transportation distance assumptions
- Waste management data

Estimated uncertainty range:

±5–10%

Confidence Level:

Moderate to High

14. Data Quality Assessment

Parameter	Rating
Activity Data	High
Emission Factors	Medium
Completeness	High
Consistency	High

Quality checks included:

- Cross-validation with purchase records
- Verification of energy consumption
- Data reconciliation

15. GHG Reduction Initiatives

JCI has implemented several initiatives to reduce emissions.

Energy Efficiency

- Installation of **energy-efficient processing machinery**
- LED lighting in facilities
- Optimization of processing equipment

Waste Utilization

- Use of **cashew shells as fuel**
- Conversion of cashew waste into **value-added carbon products**

Logistics Optimization

- Improved transportation planning
- Supplier engagement for **sustainable sourcing**

Future Sustainability Goals

- Increase renewable energy use
- Improve supply chain sustainability
- Reduce Scope 3 emissions

16. Conclusions

JCI's total carbon footprint for the reporting year is **2350.67 tCO_2e**.

Key observations:

- Scope 3 emissions dominate the footprint
- Energy consumption and supply chain activities are major contributors
- Circular use of cashew by-products provides sustainability advantages

Opportunities include:

- Renewable energy adoption
- Supply chain engagement
- Low-carbon logistics

Plan for Next Reporting Period

- Develop **GHG reduction targets**
- Improve **supplier emission data collection**
- Explore **solar energy installation**
- Implement **energy monitoring systems**