Letter of Conformance of Organizational Greenhouse Gases Emissions

It is hereby confirmed that the company

OCCL Limited

14th Floor, World Trade Tower, Sec-16, Noida - 201301 (UP), India

Organizational Carbon Footprint is Verified and Validated by DQS India.

Verification Statement:

Verification Criteria: ISO 14064-3:2019 - Specification with guidance for the verification and validation of greenhouse gas statements

Organization Boundary: OCCL Limited, India

1. Head Office - 14th Floor, World trade tower, Sec-16, Noida-201301 (UP) India.
2. Dharuhera – Plot No. 3 & 4, Industrial Complex, Phase-1, Dharuhera-123106, District: Rewari, Haryana, India.
3. Mundra - Survey No. 141, Paiki of Mouje Mundra SEZ, Village Mundra, Taluka Mundra, District: Kutch 370421, Gujarat, India.

Verified emission in the reporting period: 1 April 2024 – 31 March 2025

The scope of the assessment included the verification of quantity GHG emissions for the above organization and found to be in accordance with the requirements of the standard ISO 14064-1, in limited assurance level with emission details as below:

Scope	FY 2024-25
Scope 1 Emissions (tCO_2e/annum)	19,896
Scope 2 Emissions (tCO_2e /annum)	20,288
Scope 3 Emissions (tCO_2e /annum) *	60,105
Total GHG Emissions (tCO_2e /annum)	1,00,289
Total Production (MT)	1,22,540
Total GHG Emission Intensity (tCO_2e/Ton of production)	0.82

Verification registration no. 50256507

Date of Verification 30 June 2025

DQS India

Dr. Murugan Kandasamy
CEO & Managing Director

Annexure I – Scope 3 Emissions

Scope	GHG Emissions (tCO_2e/annum)
Cat 1 - Purchase Goods & Raw Material	38,310.50
Cat 2 - Capital Goods	202.66
Cat 3 - Fuel and Energy Related Activities	10,872.59
Cat 4 - Upstream Transportation	2,182.58
Cat 5 - Waste	147.41
Cat 6 - Business Travel	48.63
Cat 7 - Employee Commute	214.79
Cat 9 - Downstream Transportation	8,124.36
Cat 13 - Downstream Leased Assets	1.31
Total	**60,104.83**

Annexure II – Scope 3 Emissions from historical years

Scope 3	GHG Emissions for 22-23 (tCO_2e/annum)	GHG Emissions for 23-24* (tCO_2e/annum)
Cat 1 - Purchase Goods & Raw Material	29,122.93	30,506.68
Cat 2 - Capital Goods	982.75	315.56
Cat 3 - Fuel and Energy Related Activities	10,418.70	11,464.16
Cat 4 - Upstream Transportation	1,911.01	1,820.59
Cat 5 - Waste	131.97	135.39
Cat 6 - Business Travel	306.48	101.08
Cat 7 - Employee Commute	178.77	249.56
Cat 9 - Downstream Transportation	8049.61	7,751.06
Cat 13 - Downstream Leased Assets	72.9	1.29
Total	**51,175.12**	**52,345.37**

*The FY 2023–24 emission data has been corrected following identification of a calculation error.

Annexure III – Scope 1 & 2 Emissions from historical years

Scope 1	GHG Emissions for 20-21 (tCO_2e/annum)	GHG Emissions for 21-22 (tCO2e/annum)	GHG Emissions for 22-23 (tCO2e/annum)	GHG Emissions for 23-24 (tCO2e/annum)
Scope 1 Emission	23,864	24,641	22,087	21,150
Scope 2 Emission	23,955	25,393	24,461	21,464
Intensity (tCO_2e /t)	**0.74**	**0.67**	**0.53**	**0.42**

OCCL LIMITED

Carbon Footprint Report

April 2024-March 2025

CONTENTS

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LIST OF ABBREVIATIONS

DA - Dissolved Acetylene

HSD – High Speed Diesel

LDO – Light Diesel Oil

LPG - Liquefied Petroleum Gas

PNG – Piped Natural Gas

EXECUTIVE SUMMARY

Carbon footprint is becoming a widely used measure of an organization's contribution to climate change. Calculating a carbon footprint helps organization to understand the link between how they operate and what they consume in terms of energy and fuels and the impact on the environment through carbon emissions.

The assessment quantifies GHG emissions associated with the operations of **OCCL Limited** (hereby referred to as 'OCCL') during the financial year 2024-25, i.e., **01 April 2024 – 31 March 2025**. This report presents the results of a greenhouse gas (GHG) inventory conducted in accordance with the **Greenhouse Gas Protocol** – A corporate Accounting and Reporting Standard and **ISO 14064-1**. The study aims to establish a baseline and identify emission hotspots in alignment with organizational sustainability goals.

The scope of the carbon footprint assessment includes both direct and indirect emissions. The organizational boundary is defined using the **Operational Control Approach**, and the operational boundary covers Scope 1, Scope 2 and Scope 3 emissions. This assessment covers 3 locations – Dharuhera, Mundra and Noida (Head Office).

The total emissions have been mentioned in the table below. The GHG intensity estimated is **0.82 tCO_2e/MT**.

Scope	GHG Emissions (tCO_2e)	% of total Emissions
Scope 1	19,896	20%
Scope 2	20,288	20%
Scope 3	60,105	60%
Total Emissions	**1,00,289**	**100%**

1 INTRODUCTION: OCCL LIMITED

Established in 1978, OCCL Limited (hereby referred to as 'OCCL') is part of the JP Goenka Group of Companies, with Mr. JP Goenka serving as the Chairman.

The Company is a globally respected manufacturer of Insoluble Sulphur. They possess more than 25 years of experience in manufacturing this product. Over the years, their knowledge has translated into the ability to manufacture customised and value-added grades for their customers. These grades have helped them address the demanding requirements of some of the largest global quality-driven tyre manufacturers.

The Company is driven by a profound sense of customer service. Their service mindset reflects in proactive investments in people, plant & processes, to deliver quality product. They are focused on Interactive technical services with their clients and this ability has enabled them to provide holistic solutions to their customer.

OCCL provides an extensive array of Insoluble Sulphur grades in powder form. The organization produces Commercial-grade, Battery-grade sulphuric acid, and Oleum. This product serves as a dehydrating agent, catalyst, and active participant in various chemical processes, as well as in solvents and absorbents. Battery Grade is used in storage batteries, rayon, dye, acid slurry and pharmaceutical applications. Commercial Grade is used in the manufacturing of steel, heavy chemicals and super-phosphates.

Dharuhera Unit

Mundra Unit

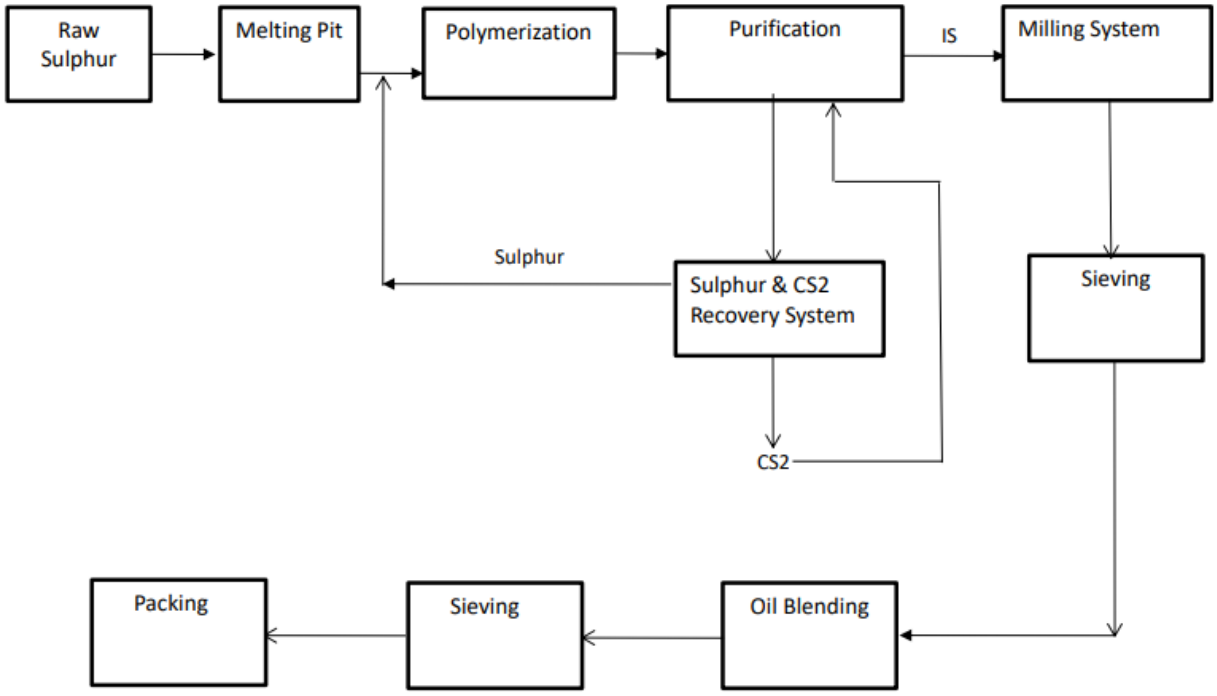

Figure 1 Process Flow Diagram For The Manufacturing Of Insoluble Sulphur

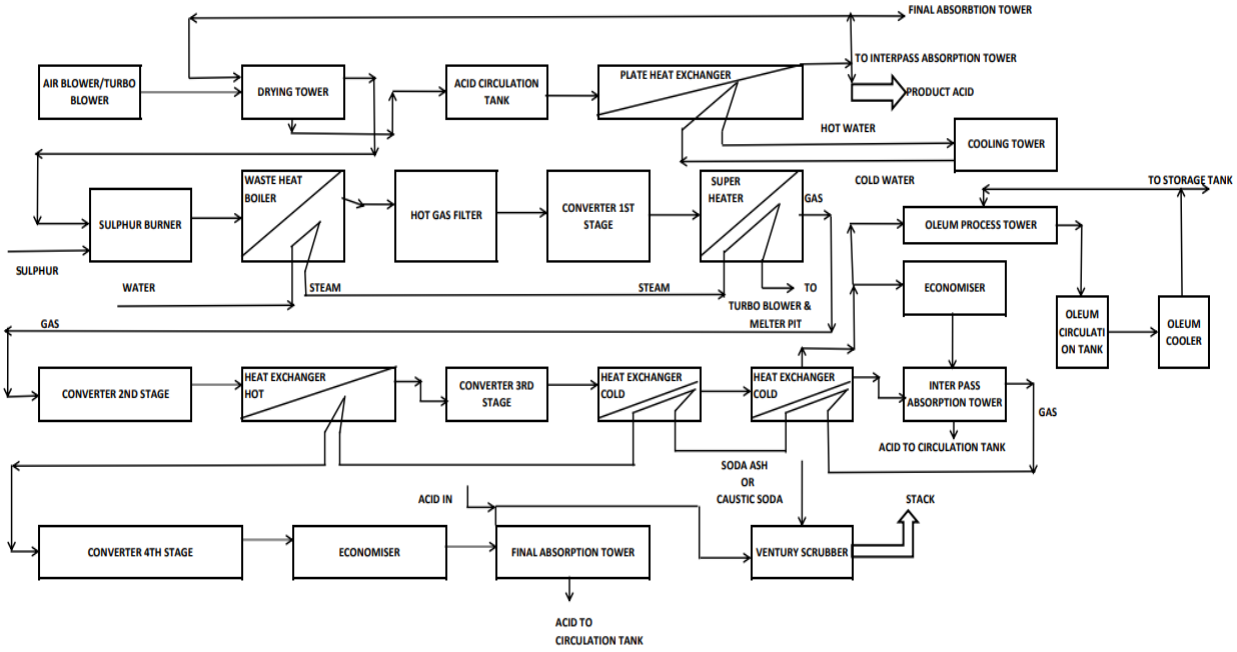

Figure 2 Manufacturing Process Flow Diagram - Sulphuric Acid Plant

Locations covered in the boundary –

1. Head Office - 14th Floor, World trade tower, Sec-16, Noida-201301 (UP) INDIA
2. Dharuhera – Plot No. 3 & 4, Industrial Complex, Phase-1, Dharuhera-123106, District: Rewari, Haryana, India.
3. Mundra - Survey No. 141, Paiki of Mouje Mundra SEZ, Village Mundra, Taluka Mundra, District: Kutch 370421, Gujarat, India.

Person or entity responsible for the report – Mr. Prakash Kumar, Tech & Management System

The Reporting period is from **1 April 2024 – 31 March 2025.**

2 ORGANIZATIONAL BOUNDARY

The initial stage in establishing a carbon footprint involves delineating the organizational boundaries. This process recognizes that companies exhibit diversity not only in their legal framework but also in their organizational structure, encompassing activities ranging from in-house operations to alliances, subcontractors, and various other forms of engagement. Through the definition of organizational limits, a company chooses a method to aggregate its greenhouse gas (GHG) emissions.

The company has chosen **Operational Control Approach** and under this framework, the company holding control over an operation but not necessarily financial control, whether directly or through one of its subsidiaries, must account for 100% of the emissions generated by that operation. It's important to note that this doesn't imply the company has the ability to make every decision regarding the operation, but rather signifies its responsibility for the emissions associated with it.

3 REPORTING BOUNDARY

The company has criteria determined by the organization to define significant emissions.

Scope 1 emissions (direct emissions): emissions that result from the activities that the organisation controls.

Scope 2 emissions (indirect emissions): emissions of the organisation due to the use of electricity sourced from outside.

Scope 3 emissions (other indirect emissions): emissions of the products and services of the organisation. They are induced by the activities of the company, but they occur in sources that are not owned or controlled by the company.

Table 1 Reporting Boundaries of Scope 1

Category as per ISO 14064:2018 Scope	Category as per GHG protocol	Description of Categories	Data Sources
Category 1- Direct GHG emissions and removals	Scope 1-Direct Emission	Combustion in Stationary sources	Coal (MT), LDO (KL), PNG (Kg), LPG (kg), Propane (Kg), DA (Kg)
Category 1- Direct GHG emissions and removals	Scope 1-Direct Emission	Combustion in mobile sources	HSD (KL), Diesel (L) and Petrol (L) consumed in company owned vehicles
Category 1- Direct GHG emissions and removals	Scope 1-Direct Emission	Combustion in fugitive sources	R22 (kg), R32 (kg) and Dissolved Acetylene (DA)

Table 2 Reporting Boundaries of Scope 2

Category as per ISO 14064:2018	Scope Category	Description of Categories	Data Sources
Category 2- Indirect GHG emissions from imported energy	Scope 2 - Indirect Emission	Purchased electricity	Company uses electricity and tracks it through supplier metering and internal metering (MWh).

Table 3 Reporting Boundaries of Scope 3

Category as per ISO 14064:2018	Scope 3 Category	Description of Categories	Data Sources
Category 4- Indirect GHG emissions from products used by the organisation	Category 1	Purchased Goods and Services	Purchase data (Quantity in tonnes (T) and value in INR) with finance team
Category 4- Indirect GHG emissions from products used by the organisation	Category 2	Capital Goods	Capital expenditure data INR by category of expense with finance team
Category 3- Indirect GHG emissions from transportation	Category 3	Fuel- and Energy-related Activities	Same as scope 1 and 2 data
Category 3- Indirect GHG emissions from transportation	Category 4	Upstream Transportation	Shipment wise weight (T) and distance (km) from inward register
Category 4- Indirect GHG emissions from products used by the organisation	Category 5	Waste	Waste category wise generation (T) and disposal method from EHS compliances
Category 3- Indirect GHG emissions from transportation	Category 6	Business Travel	Mode of transport wise Pax-Km data from HR admin records
Category 3- Indirect GHG emissions from transportation	Category 7	Employee Commute	Mode of transport wise km data from HR admin records
Category 3- Indirect GHG emissions from transportation	Category 9	Downstream Transportation	Shipment wise weight (T) of finished goods and distance (km) from outward register
Category 5 - Indirect GHG emissions associated with the use of products from the organization	Category 13	Downstream Leased Assets	Warehouse which only has Electricity consumption associated (kWh)

4 EXCLUSION OF ANY SIGNIFICANT GHG SOURCES OR SINKS FROM THE QUANTIFICATION

The emissions sources listed below have been identified but are not included in the emissions inventory. These sources are considered insignificant or immaterial to stakeholders, the inventory's context, and/or are currently not feasible or practical to calculate.

Table 4 Emission Source Exclusions

Emission Source	Methodology & Materiality
Category 10, 11, 12	The product manufactured has a lot of variability in its downstream value chain, hence these categories are not possible to track. That is why they have been omitted in accordance with GHG Protocol.

5 TOTAL GHG EMISSIONS OF OCCL

OCCL Limited's carbon footprint in FY 2024-25 is **1,00,289 MTCO₂e**. Scope 1 accounts for 20% (19,896 MTCO₂e), Scope 2 accounts for 20% (20,288 MTCO₂e) and Scope 3 accounts for 60% (60,105 MTCO₂e) of the total emissions. The GHG intensity estimated is **0.82 tCO₂e/MT**.

Table 5 Total GHG Emissions for FY 2024-25

Scope	GHG Emissions (tCO₂e)	% of total Emissions
Scope 1	19,896	20%
Scope 2	20,288	20%
Scope 3	60,105	60%
Total Emissions	**1,00,289**	**100%**

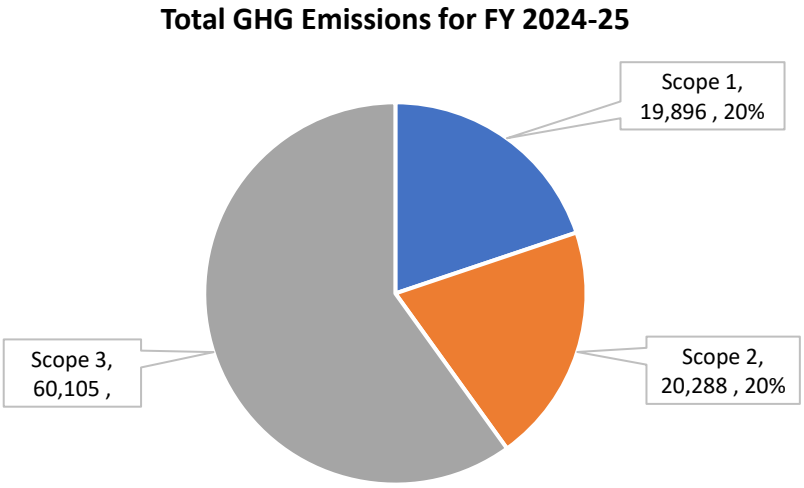

Figure 3 Scope 1, Scope 2 & Scope 3 GHG Emission for FY 2024-25

6 DIRECT GHG EMISSIONS

Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from fuel burned in stationary equipment like DG sets, mobile equipment like vehicles and fugitive emission like refrigerant & fire extinguisher.

Activity data are those that are associated with the consumption of energy or consumables of the organisation. These must be precise, transparent, complete, reliable, accurate in terms of information, consistent and reproducible. Activity data is collected at the site level by OCCL.

The collection of data has been prioritised so that they are of the highest possible quality, with the aim of reducing the uncertainty of the calculations. The data for GHG emissions from OCCL has been derived

directly from purchased order bills, electricity bills /meter readings of Electricity Board and then conversion factors are employed to convert into GHG reporting metrics. The uncertainty lies in the conversion factors.

OCCL Limited's Scope 1 emissions for FY 2024-25 is **19,896 MTCO2e.**

Table 6 Scope 1 Emission Distribution for FY 2024-25

Sub-category	Activity Source	Fuel/Gas Used	CO_2 Emissions (tCO_2e)	CH_4 emissions (tCO_2e)	N_2O emissions (tCO_2e)	Total Emissions (tCO_2e)
Stationary Combustion	Boiler	LDO	252.07	0.03	3.17	255.27
	Boiler	Coal	17478.96	50.93	74.48	17604.37
	Boiler/Thermic fluid unit	PNG	670.25	1.01	0.31	671.57
	Domestic/Boiler/ Thermic fluid unit	LPG	245.24	0.21	0.14	245.59
	Canteen	LPG	32.74	0.03	0.02	32.78
	Thermic fluid unit	Propane	324.80	0.28	0.18	325.26
	Welding	Dissolved Acetylene (DA)	21.12	-	-	21.12
Mobile Combustion	Vehicles	HSD	423.85	0.05	5.33	429.24
	Company owned vehicles	Diesel	8.88	0.001	0.11	8.99
		Petrol	3.25	0.01	0.01	3.27
		CNG	1.87	0.003	0.001	1.87
Fugitive Combustion	Split AC	Refrigerant - R22	234.22	-	-	234.22
	Split AC	Refrigerant – R32	62.76	-	-	62.76
		TOTAL	**19,760.01**	**52.55**	**83.75**	**19,896.31**

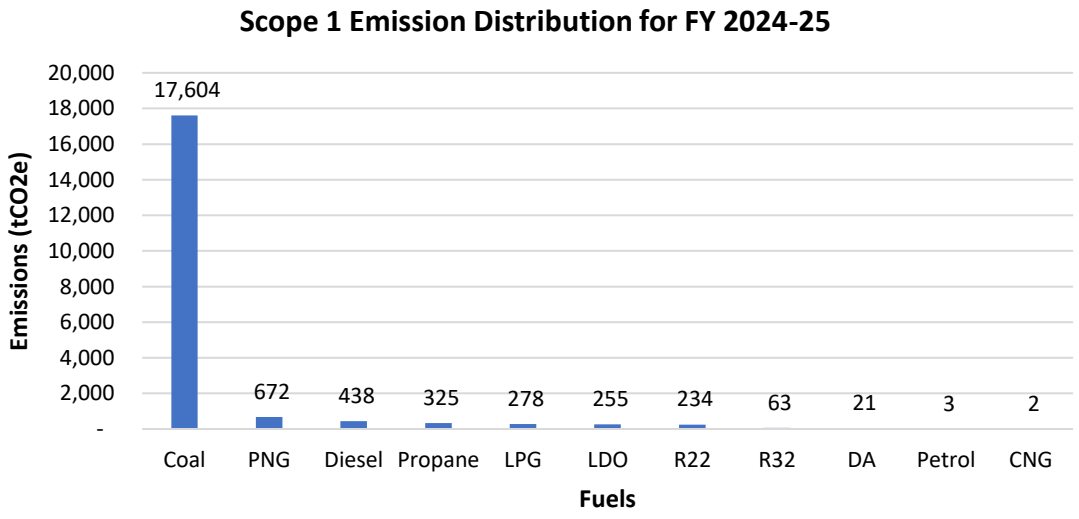

Figure 4 Scope 1 Emission Distribution for FY 2024-25

7 BIOGENIC CO_2 EMISSIONS

Groundnut shell is used as a solid biomass and the biogenic emissions is **45.33 tCO_2e.**

8 INDIRECT GHG EMISSIONS

8.1 SCOPE 2: Electricity Indirect GHG Emissions

Scope 2 accounts for GHG emissions from the purchased electricity consumed by a company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occurs at the facility where electricity is generated.

OCCL Limited's Scope 2 emission for FY 2024-25 is **20,288 tCO_2e**.

Table 7 Scope 2 Emission for FY 2024-25

S. No	Emission Sources	Unit of Measurement	Activity data	Total Emission in tCO_2e
1	Electricity	KWh	2,79,05,856	20,288

8.2 SCOPE 3: Other Indirect GHG Emissions

These are emissions of the products and services of the organisation. They are induced by the activities of the company, but they occur in sources that are not owned or controlled by the company.

OCCL Limited's Scope 3 emission for FY 2024-25 is **60,105 tCO_2e**.

For OCCL, the Scope 3 emission sources considered are emissions from the following categories:

Table 8 Scope 3 Emission Distribution for FY 2024-25

Category	Total Emissions (tCO_2e)
Category 1 - Purchased Goods and Services	38,310.50
Category 2 - Capital goods	202.66
Category 3 - Fuel- and energy-related activities	10,872.59
Category 4 - Upstream transportation and distribution	2,182.58
Category 5 - Waste generated in operations	147.41
Category 6 - Business Travel	48.63
Category 7 - Employee commuting	214.79
Category 9 - Downstream transportation and distribution	8,124.36
Category 13 - Downstream leased assets	1.31
TOTAL	**60,104.82**

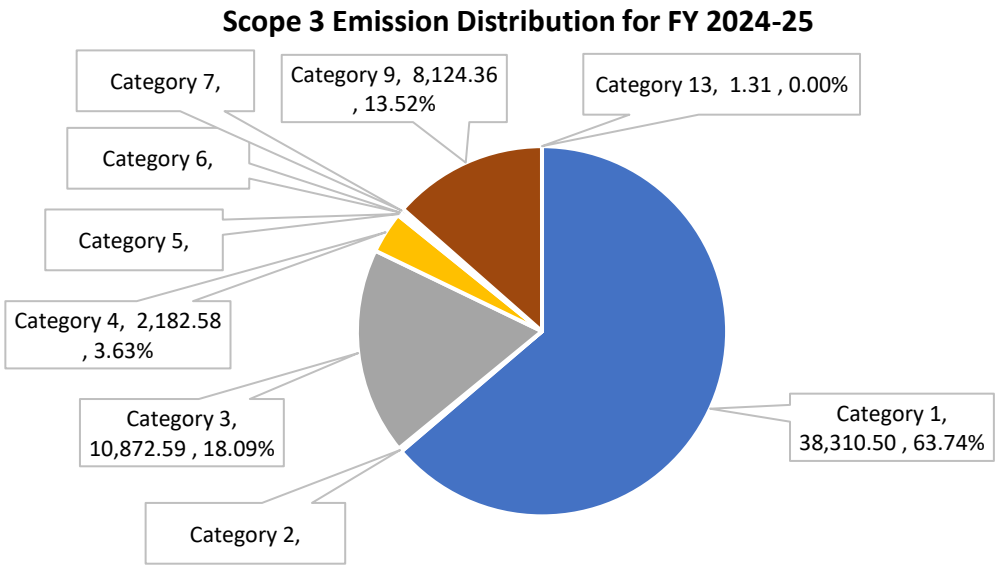

Figure 5 Scope 3 Emission Distribution for FY 2024-25

9 THE HISTORICAL BASE YEAR SELECTED AND THE BASE-YEAR GHG INVENTORY

The financial year 2020-2021 has been chosen as the inaugural base year for Scope 1 & 2 emissions and base year for scope 1, 2 & 3 emissions is FY 2023-24. The emissions of the base year as well as the current year is presented below:

Table 9 Comparison of Scope 1 & 2 Emissions of OCCL in all historical year

	Scope 1	Scope 2	Total Emissions	Total Production (MT)	Intensity (tCO_2e (tCO_2e /t)
FY 2020-21	23,864	23,955	47,819	64723.62	0.74
FY 2021-22	24,641	25,393	50,034	74,155	0.67
FY 2022-23	22,087	24,461	46,548	87311.17	0.53
FY 2023-24	21,150	21,464	42,614	102493.3	0.42
FY 2024-25	19,896	20,288	40,184	1,22,540	0.33
%increase/decrease	-17%	-15%	-16%	89%	-56%

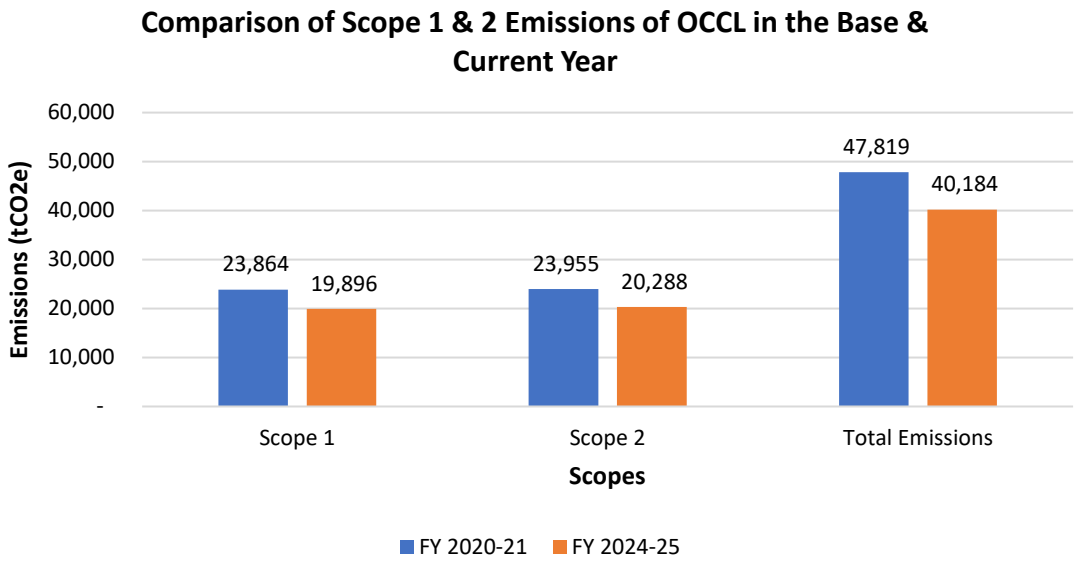

Figure 6 Comparison of Scope 1 & 2 Emissions of OCCL in the Base & Current Year

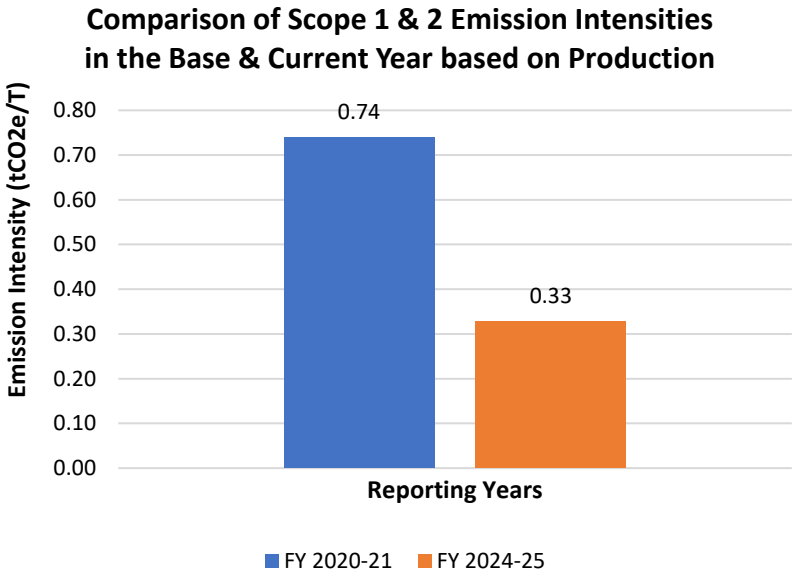

Figure 7 Comparison of Scope 1 & 2 Emission Intensities in the Base & Current Year based on Production

FY 2023-24 has been chosen as the base year for total emissions including Scope 3 and the comparison between base & current years are given below:

Table 10 Comparison of Scope 1, 2 & 3 Emissions of OCCL in the Base & Current Year

	Scope 1	Scope 2	Scope 3	Total Emissions	Total Production (MT)	Intensity (tCO2e /t)
FY 2022-23	22,087	24,461	97,651	1,44,199	87311	1.65
FY 2023-24	21,150	21,464	52,345*	94,959	1,02,493	0.93
FY 2024-25	19,896	20,288	60,105	1,00,289	1,22,540	0.82
%increase/decrease	-6%	-5%	15%	6%	20%	-12%

*The FY 2023–24 emission data has been corrected following identification of a calculation error.

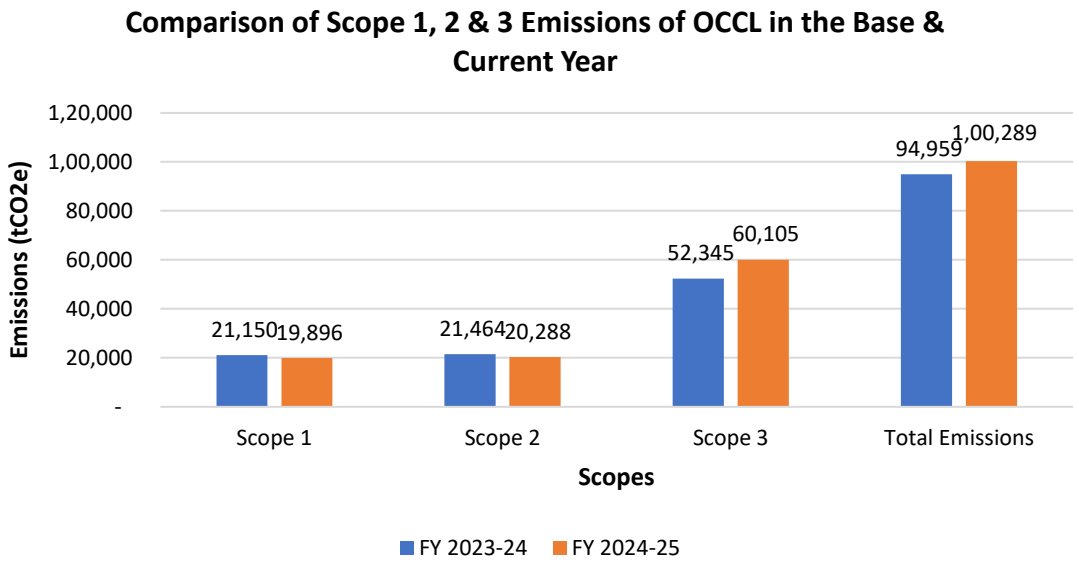

Figure 8 Comparison of Scope 1, 2 & 3 Emissions of OCCL in the Base & Current Year

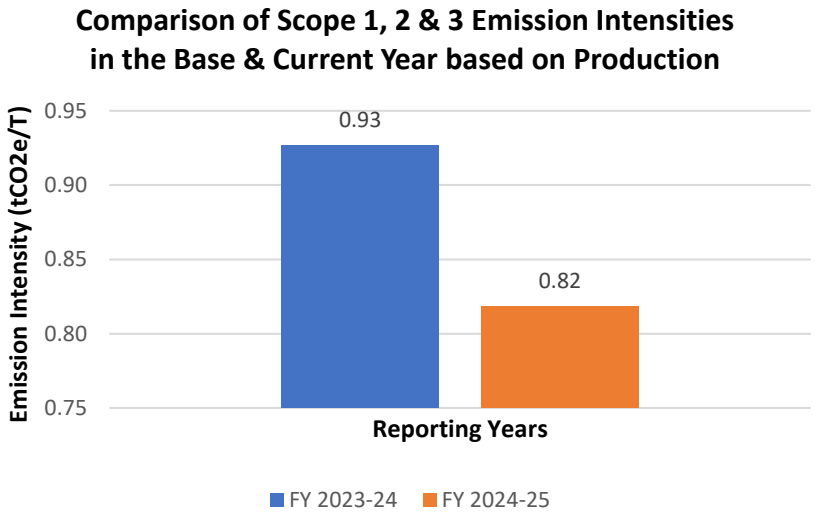

Figure 9 Comparison of Scope 1, 2 & 3 Emission Intensities in the Base & Current Year based on Production

10 QUANTIFICATION PROCESS

The regional team located in the head office is responsible for acquiring activity data from the relevant sources within OCCL's finance, accounts and transport management systems.

Following this data collection phase, OCCL's dedicated team takes charge of meticulously reviewing and consolidating the data. Their responsibility extends to the compilation of the GHG inventory and the preparation of the associated report.

Furthermore, this GHG report meticulously addresses the following key elements:

- A comprehensive identification of both the organizational and reporting boundaries.
- A meticulous process for selecting and scrutinizing GHG sources and sinks.

The emission factor methodology is considered for quantification of direct emissions from fuel combustion and indirect emissions. Here activity data is collected from the site for all calculations and suitable emission factors, taken from reputed and authorized sources, are used to convert the activity data to emission data.

Refill method is used to estimate the refrigerant release from freezers, air conditioners and chillers. Latest GWP values from Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6), were used for converting the refilled Greenhouse gas to emission data.

The emission factors used in the calculation are taken from Department for Environment, Food and Rural Affairs (DEFRA) 2024 (official site of UK govt.), Central Electricity Authority of India, Version 19.

A thorough exposition of the quantification methodologies employed, with an unwavering commitment to ensuring their consistent application. The emissions summary reflects the utmost effort to consolidate and standardize emissions data while furnishing a comprehensive estimation of the methodologies employed for calculation and estimation, aligning with the ISO 14064-1:2018 standard.

This document has been prepared in conformance with the GHG Protocol Corporate Accounting and Reporting Standard prepared by the World Business Council on Sustainable Development (WBCSD) and the World Resources Institute (WRI). It also suitably refers to the ISO 14064:2018 standard and comply to its requirements.

11 UNCERTAINTY ASSESSMENT

Table 11 Emission Sources with their Uncertainty Level

Scopes	Emissions (tCO2e)	Categories	Data at site	Approach	Accuracy
Scope 1	**19,896.31**	Direct Emission	Company owned vehicles Diesel (L), Petrol (L), Coal (MT), Briquette (MT), LDO (KL), HSD (KL), PNG (Kg), LPG (kg), Propane (Kg), DA (Kg) consumption found in site logs. R22 (Kg) and R32 (Kg) refrigerant also used.	Emission factors are taken from IPCC and DEFRA 2024	Very good

Scope 2		**20,287.56**	Indirect Emissions - Purchased electricity	Electricity from grid and renewables tracked in KWH with bills and logs.	Emission factors from CEA Vrs 19	Very good
Scope 3	Cat 1	38,310.50	Purchased Goods and Services	Purchase data Quantity (T) and value INR) with finance team	Emission factors from average industry data- Ecoinvent and selected reputed research sources	Good
	Cat 2	202.66	Capital Goods	Capital expenditure data INR by category of expense with finance team	Emission factors from USEEIO using parity conversion of expense and spend based approach	Satisfactory
	Cat 3	10,872.59	Fuel- and Energy-related Activities	Same as scope 1 and 2 data	DEFRA 2024 WTT factors for fuels and T&D loss factors from CEA of India	Good
	Cat 4	2,182.58	Upstream Transportation	Shipment wise weight (T) and distance (KM) from inward register	DEFRA 2024 T.Km emission factors by size of vehicle	Good
	Cat 5	147.41	Waste	Not Material- Waste category wise generation (T) and disposal method from EHS compliances	DEFRA 2024 emission factors by waste category and disposal method	Good
	Cat 6	48.63	Business Travel	Not Material- Mode of transport wise Pax-Km data from HR admin records	DEFRA 2024 emission factors by mode of travel	Good
	Cat 7	214.79	Employee Commute	Not Material- Mode of transport wise Km data from HR admin records	DEFRA 2024 emission factors by mode of travel	Satisfactory
	Cat 8	NA	Upstream Leased Asset	No upstream leased assets	NA	NA
	Cat 9	8,124.36	Downstream Transportation	Shipment wise weight (T) and	DEFRA 2024 T.Km emission	Good

				distance (KM) from inward register	factors by size of vehicle	
	Cat 10	NA	Processing of Sold Products	The product manufactured has a lot of variability in its downstream value chain, hence these categories are not possible to track	NA	NA
	Cat 11	NA	Use of Sold Products			
	Cat 12	NA	End-of-life Treatment of Sold Products			
	Cat 13	1.31	Downstream Leased Assets	Warehouse which only has Electricity consumption associated (KWH)	Emission factors from CEA of India	Very good
	Cat 14	NA	Franchises	No franchises	NA	NA
	Cat 15	NA	Investments	Subsidiary- Duncan Engg. - These emissions are not included in the GHG inventory of OCCL as this unit will be demerged from OCCL this year.	IPCC AR6 and DEFRA 2024 factors for fuels and T&D loss factors from CEA of India	Excluded

Table 12 Uncertainty Analysis with Accuracy scale

S.No.	Accuracy data	Accuracy
1	Satisfactory	Site survey-based activity data and EF from International source
2	Good	Site based measured activity data and EF from international reputed source
3	Very good	Site based measured activity data and EF sourced from reputed and authorised source, also updated version used

12 PROJECTS & INITIATIVES FOR GHG EMISSION REDUCTION

As part of our commitment to reducing our carbon footprint and improving energy efficiency, several initiatives have been identified and implemented across operations and the value chain. These projects focus on optimizing energy use, improving process efficiency, integrating renewable energy, and reducing supply chain emissions. The expected impact of these initiatives is presented in terms of energy savings, fuel reduction, and GHG emission reductions.

Key projects undertaken/planned include:

1) **ETP Sludge Drying –** Reduction in Scope 3 emissions by reducing sludge quantity (~63 $MTCO_2e$ annual savings).
2) **Compressor Power Consumption Reduction –** Optimization of compressor operation and GN consumption (~693,500 kWh annual savings).
3) **Condensing Turbine & Steam System Optimization –** Increased condensing turbine generation capacity (530 kW to 600 kW) using steam saved from reduced consumption in IS plants, insulation of transfer lines, and steam trap optimization (~554,400 kWh annual savings).
4) **Hot Water Pump Replacement (ISP-2) –** Replacement with high-efficiency pump (~20,000 kWh annual savings).

5) **TFU Temperature Reduction –** Reduction in LPG consumption (~21,765 kg annual savings).
6) **Captive Solar Power Plant (Dharuhera) –** Installation of 3.2 MWh capacity solar plant by Dec 2025 (~3,400 $MTCO_2e$ annual savings).
7) **Improved Insulation in CFB & Utility Section –** Reduction of coal consumption and energy losses (~50 $MTCO_2e$ annual savings).
8) **Supply Chain Emission Reduction (Downstream) –** Modal shift from road to multi-modal transportation from Chennai (~500–800 $MTCO_2e$ annual savings).

13 CONCLUSION

OCCL Limited's environmental action plan covers all its direct and indirect emissions for the year FY 2024-25, and it is considered as a current year for OCCL Limited. The base year considered for OCCL Limited's Scope 1 & 2 emissions is FY 2020-2021 and for Scope 1,2 & 3 it is FY 2024-25.

OCCL Limited's organizational carbon footprint is **1,00,289 $MTCO_2e$** for the year FY 2024-25 and are determined to help industry-wide transition to a low-carbon economy; that is why OCCL Limited plans to reduce their carbon footprint in the future.

14 REFERENCES

For the purpose of calculating and reporting GHG emissions, the following standards and protocols are applicable:

1. Greenhouse Gas Protocol on Corporate Accounting and Reporting by World Resource Institute (WRI) / World Business Council for Sustainable Development (WBCSD)
2. ISO 14064-1:2018 Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
3. India GHG Protocol for Business travel of employees, local travel, emissions from bus commuting
4. UNFCCC methodologies, AMS I.C Thermal energy production with or without electricity --- Version 20.0
5. UNFCCC methodologies AMS I.F Renewable electricity generation for captive use and mini-grid --- Version 3.0
6. UNFCCC methodologies AMS-III.B, Switching fossil fuels --- Version 18.0
7. UNFCCC methodologies AMS I.D, version 18.0: Grid connected renewable electricity generation --- Version 18.0
8. Defra Greenhouse Gas Protocol https://ghgprotocol.org/Third-Party-Databases/Defra
9. Central Electricity Authority, Version 20 https://cea.nic.in/cdm-co2-baseline-database/?lang=en
10. IPCC AR6 https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf

15 ANNEXURE

15.1 Scope 1 - Direct Emissions – Emission Factors

Fuel/ Gas Used	EF for CO2	EF for CH4	EF for N2O	EF (kgCO2e/unit)	Source of Emission factor
Diesel	2.628	0.000	0.033	2.662	DEFRA 2024
Petrol	2.340	0.008	0.006	2.354	DEFRA 2024
LDO	2.628	0.000	0.033	2.662	DEFRA 2024
HSD	2.628	0.000	0.033	2.662	DEFRA 2024
Coal	1.939	0.006	0.008	1.953	IPCC, calculated with given Calorific value
PNG	2.041	0.003	0.001	2.045	DEFRA 2024
LPG	2.935	0.003	0.002	2.939	DEFRA 2024
LPG-Canteen	2.935	0.003	0.002	2.939	DEFRA 2024
Propane	2.993	0.003	0.002	2.998	DEFRA 2024
Dissolved Acetylene (DA)	3.143	-	-	3.143	Rounded/Conservative Factor calculated from molecular EF
Refrigerant - R22	1960			1960	IPCC, AR 6
Refrigerant – R32	771			771	IPCC, AR 6

15.2 Scope 2 - Indirect Emissions

S.No	Emission Sources	Emission Factor (tCO_2/unit)	Source of Emission factor
1	Electricity	0.727 $kgCO_2e$/MWh	Central Electricity Authority of India, v.20