

CSCI STEEL CORPORATION INDIA PRIVATE LIMITED



GHG Accounting Ca Report CY-24

ISO 14064-1 & GHG Protocol aligned

Table of Contents

- Message from Leadership
- **Executive Summary**
- Emission Summary
- About CSCI
- Manufacturing Process
- CSCI'S NAVIGATING CLIMATE STRATEGY
- Environmental Stewardship
- Conganizational & Reporting boundry
- **Methodology**
- GHG Inventory
- **Quantification Process**
- Suncertainty Assessment
- & Conclusion
- Emission References



CSCI Steel Corporation India Pvt Ltd, established in 2011, is a leading manufacturer of high-quality electrical steel sheets, specializing in non-oriented silicon steel (CRNO). Based in Vadodara (corporate office) and Dahej, Bharuch (plant office) in Gujarat, India, CSCI serves industries like automotive, home appliances, power, and toys. Committed to sustainability and Total Quality Management (TQM), the company focuses on energy-efficient materials, reducing environmental impact through efficient resource use, waste minimization, and lower emissions, while enhancing customer satisfaction and maintaining a competitive edge in domestic and international markets.

The report offers comprehensive insights into the organization's greenhouse gas (GHG) emissions forming the bedrock of our climate strategy. By accounting for our GHG emissions, we will proceed to identify effective approaches to facilitate the decarbonization of our operations.

As part of their environmental capital, CSCI Steel Corporation India Pvt Ltd is focusing to ensure a positive environmental footprint and thus engaged with DQS India (third-party verification body) to verify their carbon footprint emissions with limited level of assurance for their Dahej location. The base year selected for the Scope-1 & 2 reporting is CY 2018 & for Scope-3 Reporting is CY 2023

4%

SCOPE-1

SCOPE-2 9570.72 tCO₂e

3%



12956.09 tCO₂e

EMISSION SUMMARY FOR CY 2024

ISO 14064-1	GHG Protocol	Emission (MT CO2e.)
Category 1 Direct GHG emissions and removals	Scope 1 – Direct Emissions	12956.09
Category 2 Indirect GHG emissions from imported energy	Scope 2- Indirect Emissions	9570.72
Category 3 Indirect GHG emissions from transportation	Scope-3 - Category 4: (Upstream Transportation and Distribution) Scope-3 - Category 6: (Business Travel) Scope-3 - Category 7: (Employee Commute) Scope-3 - Category 9: (Downstream Transportation	20376
Category 4 Indirect GHG emissions from product used by organization	Scope-3 - Category 1: (Purchased goods and services Scope-3 - Category 2: (Capital goods) Scope-3 - Category 3: (Fuel- and Energy-Related Scope-3 - Activities) Scope-3 - Category 5: (Waste Generated in Operations)	261941.51
Category 5 Indirect GHG emissions associated with use of products from organization	Scope-3 - Category 12: (End-of-Life Treatment of Sold Products)	2812
Total Emissions		307656.82

About Us



CSCI Steel Corporation India Pvt Ltd is a leading manufacturer and supplier of high-quality electrical steel sheets. With a strong commitment to sustainability and innovation, we serve a wide range of industries including automotive, home appliances, power, and toys. Through advanced manufacturing processes and a focus on Total Quality Management (TQM), we aim to enhance customer satisfaction, reduce costs, and continuously improve its competitive edge in both domestic and international markets.

CSCI was incorporated in the year 2011. We have 1 Corporate Office at Vadodara and 1 plant Office at Dahej, Bharuch in Gujarat, India. CSCI specializes in producing non-oriented silicon steel (CRNO) and is dedicated to meeting the growing demand for energy-efficient materials. By prioritizing sustainable practices, CSCI focuses on reducing its environmental footprint through efficient resource use, minimizing waste, and lowering emissions during manufacturing processes. This focus not only supports energy-efficient products but also contributes to reducing overall energy consumption and promoting sustainability in various industries.

The report offers comprehensive insights into the organization's greenhouse gas (GHG) emissions forming the bedrock of our climate strategy. By accounting for our GHG emissions, we will proceed to identify effective approaches to facilitate the decarbonization of our operations.

- Person or entity responsible for the report CSCI Steel Corporation India Pvt Ltd
- Reporting period 01 January 2024 -31 December 2024
- Reporting Frequency -The reporting is produced annually

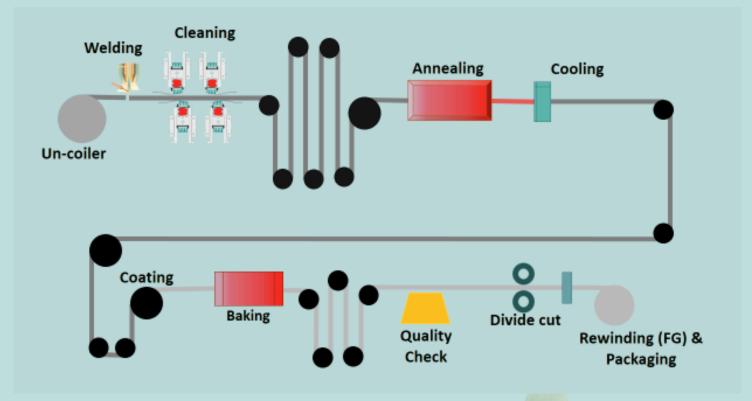
• Intended Users - This report is directed at all stakeholders, including investors, suppliers, and customers, who have an interest in our carbon footprint inventory, and the associated reporting

framework, notation, and explanations.

CSCI's Manufacturing Product:	Electrical Steel Coil
Core Applications:	In EV Motors, Industrial motor, Transformers and Pumps
Unique Feature:	- Uniform electrical and magnetic properties - Most suitable material for rotating machines - Low Hysteresis loss

PRODUCT MANUFACTURING PROCESS

CSCI's advanced production techniques and rigorous quality control ensure that we deliver top-tier electrical steel coils that meet the highest industry standards. The Annealing and Coating Line (ACL) has been meticulously designed to ensure optimal performance and quality. It has been designed to uncoil, weld, clean, anneal, coat, bake & cool, side trim, divide and recoil. The cold rolled steel full hard coils as received from the cold reduction mill are used as input material. The slitting line can match requirement of small size width by manner of hoops.



CSCI's ACL Process Flow chart.

- Uncoil: The coil opener and guide table provided to automatic thread the strip from the payoff reel into the entry pinch roll. The coil opener and guide table are hydraulically extended or retracted. A magnetic conveyor is furnished for the threading of strip.
- Welding: The welder is designed to connect two coils (proceed coil and the next coil), the
 welder shall be a lap seam resistance type complete with strip auto-positioning, entry and
 exit clamps, entry and exit strip centering device, strip shear, welding apparatus, automatic
 wheel dressers manual cutting tools hole punches and auxiliaries.
- Cleaning: The cleaning section has designed to clean the surface of steel strip by removing grease, residual oil and iron, loosen dirt, etc. by using alkaline solution, brush scrubbing & electrolytic process.
- Annealing (Furnace & cooling): The furnace is horizontal type for heat treatment of cold rolled strip. This facility is consisting of four sections heating, soaking, slow cooling, fast cooling.

PRODUCT MANUFACTURING PROCESS



- Coat: The coaters are horizontal type and include No.1 and No.2 coater capable of applying a precise metered amount of coating paint on both sides of strip simultaneously.
- Bake and cool: Oven is designed to thoroughly cure the coating on both sides of the strip and designed with sufficient flow-out time for all products. Hot air circulation method has been applied and then blower the cool the trip down to environment temperature.
- Side trim: The side trimmer is provided to trim the strip edges to meet the required width by means of rotary knives. The material of cutter is ultra-high strength steel.
- Divide and recoil: The tension reel rewinds the strip under tension into a straight-edge tight coil after shear cutting. Strip will be recoiled to match the order weight as product.
- Packing: Finish good packed by automatic walking beam type multi skid packing line equipment, to meet different packing style.

CSCI'S Climate Roadmap: Efficiency to Resilience



Energy Efficiency

Identify and implement energy efficiency measures across all operations to reduce overall consumption



Expanding Renewable Integration

Increasing the Clean energy source instead of conventional energy



Optimizing Resource use

Enhancing raw material use to lower carbon impact & waste generation



Tackling Scope-3 Emission

Evaluating & engaging the value chain to drive emission reduction



Tackling Scope-3 Emission

Proactively managing climate risks with a cost-effective solution



Decarbonization align with SBTi

Set Measurable targets and outline a decarbonization roadmap based on Science Based Targets initiative (SBTi) criteria

Environmental Stewardship

1 Natural Gas Usage Optimization Projects:

We collaboratively implemented an energy saving project by:

- · Installing energy savers in the furnace
- · Adjusting the air-fuel ratio in the furnace
- · Adopting a new cleaning chemical in the cleaning section

We adopted a new cleaning chemical that eliminates the need for heating, resulting in significant energy and cost savings. This initiative will help in reducing Scope 1 emissions.

2

Installation of VFD based Compressor

We replaced the old compressors with new VFD-based ones in utility section, leading to significant energy and cost savings. This upgrade will greatly contribute to reducing the Scope 2 emissions.

3

Entry/Delivery Hydraulic System

By implementing a strategy to operate only one pump at the entry and delivery points of the hydraulic system in the ACL Plant, we have effectively reduced electricity consumption. This upgrade not only optimizes energy usage but also plays a crucial role in minimizing Scope 2 emissions.

4

Installation of VFD based Compressor

We are working to eliminate any remaining length of strip in the Pay-off Reel (POR) to reduce scrap. Currently, the average length remaining in the POR is 18 meters. In Phase 1, we have successfully saved an average of 4.9 meters of strip length in the POR. This reduction has decreased electricity consumption, thereby contributing to a reduction in Scope 2 emissions.

Environmental Stewardship

5

Pneumatic Air (PA) Consumption Reduction

To reduce Pneumatic Air (PA) consumption at the ACL plant, we have ceased air usage at three critical locations: the Entry Seal Roll, the Hot Air Dryer, and TM3. This strategic action has significantly decreased our overall air consumption, resulting in reduced electricity usage.

6

Aeration Tank Blower Automation project in ETP Biological Treatment Process

In the ETP Biological Treatment Process, the utility section has implemented an automation program for the aeration tank blowers. This project has successfully reduced electricity consumption by 120,450 kWh per year. As a result, this initiative has significantly decreased our Scope 2 emissions, contributing to our overall environmental sustainability efforts and helping to minimize our carbon footprint.

Additionally, the CSCI team is continuously striving to increase the share of renewable energy in the company's total energy consumption. This involves exploring and implementing various renewable energy sources such as solar and wind power to reduce reliance on non-renewable energy.

Furthermore, our production team is actively engaged in sustainability initiatives by reusing scrap materials and plastic in the packaging of finished goods. These efforts not only minimize waste but also contribute to a circular economy, showcasing our commitment to environmental responsibility and resource efficiency.



Organizational Boundary

The report includes the following owned and operational plant and office

S. No.	Unit Location	Details	Capacity
1	Brauch Plant	Corporate Registered Office	217800 TPA
2	Bharuch plant + Vadodara Office	Plant+ Corporate Registered Office	250 Employees

Exclusions: The current GHG inventory for CSCI does not include emissions from the residential township.



Reporting Boundary

The present GHG Inventory report is based on ISO 14064-1. Also, it is in line with the Green House Gas Protocol (GHG Protocol). The calculations are based on the Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard.

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

Scope1

Emissions include direct emissions from stationary or mobile combustion sources.

It is calculated for CSCI Bharuch Plant. It includes fuels like diesel, natural gas, and LPG and acetylene gas. Diesel used in D.G sets and Forklifts at our units. Natural gas used in boiler, oven and Annealing furnace. The LPG gas is used in canteen. The acetylene gas is used for welding and fabrication process. The fuel data is captured from the bills. The emission factors are sourced from IPCC 2006 Guidelines for National Greenhouse Gas Inventories. The fugitive refrigerants have also been reported. Other fuel like Hydrogen and Nitrogen are used in Furnace. Also, Nitrogen, Argon and Oxygen are used during welding/ gas cutting work.

- Hydrogen is a clean fuel that does not emit any GHGs during combustion. The remnant of combustion is pure water.
- Argon is an inert gas, which means it does not undergo chemical reactions under normal conditions. As a result, it does not contribute to the greenhouse effect or climate change.
- Nitrogen gas itself does not directly produce greenhouse gas (GHG) emissions. Like argon, nitrogen is an inert gas and does not undergo chemical reactions under normal conditions.
- Oxygen is also considered a clean fuel because it does not produce harmful emissions when burned.

These fuels are considered as clean fuel as produces minimal or no harmful emissions during combustion, compared to traditional fossil fuels like coal, oil, and natural gas. Thereby significantly reducing environmental impact. They contribute less to air pollution and greenhouse gas emissions, thus having a reduced impact on the environment and human health. Therefore, emissions from these fuels are considered in Scope 3 in category 3.

Reporting Boundary

Scope 2

It includes indirect emissions from purchased electricity, steam, heating & cooling for own use. The electricity data is captured from the bills. CSCI's indirect energy sources include purchased electricity from the grid, as well as solar and wind energy. The renewable energy sources are procured through power purchase agreements. The factors are based on the CO2 baseline database for the Indian Power Sector version 20 published by the Ministry of Power, Central Electricity Authority GOI. The carbon emission factor of grid electricity used is exclusive of Renewable Energy.

Scope 3

It includes indirect emissions from value-chain activities. We understand that achieving decarbonization necessitates addressing value true the complete chain. encompassing both upstream and downstream sectors. We actively engaged with all stakeholders involved in both the upstream (fuel and capital goods) and downstream (consumers and customers) aspects of the value chain. To ensure the scientific accuracy and credibility of our decarbonization efforts, we have conducted a comprehensive evaluation of greenhouse gas (GHG) emissions accounting for scope 3 emissions. We have identified total 9 categories out of 15 categories as mentioned below:



Reporting Boundary

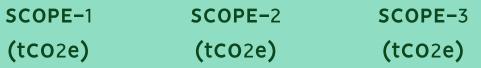
Category Code	Name of Category	Applicability
S3C1	Purchased goods and services	Applicable
S3C2	Capital Goods	Applicable
S3C3	Fuel- and Energy-Related Activities	Applicable
S3C4	Upstream Transportation and Distribution	Applicable
S3C5	Waste Generated in Operations	Applicable
S3C6	Business Travel	Applicable
S3C7	Employee Commute	Applicable
S3C8	Upstream Leased Assets	Not Applicable- We do not considered subsidiaries in reporting boundaries for GHG footprint.
S3C9	Downstream Transportation and Distribution	Applicable
S3C10	Processing of Sold Products	Applicable - but not computed due to unavailability of data.
S3C11	Use of Sold Products	Not Applicable- As the finished goods of CSCI becomes part of a final product across varied sector and applications.
S3C12	End-of-Life Treatment of Sold Products	Applicable
S3C13	Downstream Leased Assets	Not Applicable - As there is no downstream leased assets of CSCI
S3C14	Franchises	Not Applicable - There is no franchises
S3C15	Investments	Not Applicable - There is no investment in any third party ventures/projects

Emission Share CY 2018 (Base Year Scope 1 & 2)

SCOPE-1 SCOPE-2 SCOPE-3

(tCO2e) (tCO2e) (tCO2e)

22488 17517



13685 11845

Emission Share CY 2024

312276

SCOPE-1 SCOPE-2 SCOPE-3 (tCO2e) (tCO2e) (tCO2e)

12956 285130 9571

GHG Emission Intensity (tCO2e/MT Production) CY 2018 CY 2023 CY 2024 (Base Year Scope 1 & 2) 0.230 0.196 (Including Scope 1 & 2) (Including Scope 1 & 2) (Including Scope 1 & 2) 2.596 2.535 (Including Scope 1,2 & 3) (Including Scope 1,2 & 3)





Source wise Emission (Scope -1 & 2)

Source wise Emission	Emissions (MTCO2e.)		
Scope- 1 & 2	CY 2018 (Base Year)	CY 2023	CY 2024
Diesel	10.7	9.76	10.58
Natural Gas	13725.6	13170.67	12459.44
LPG	38.27	40.51	37.78
Acetylene	0.31	0.22	0.22
Purchased Grid (Non RE)	12842	11845	9570.72
Purchased Solar (RE)	-		-
Purchased Wind (RE)			-

Direct GHG Emissions, quantified separately for CO2, CH4, and N2O:

Sauraa	Direct Emissions (MTCO2e.) of CY 2024				
Source	tCO2	tCH4	tN2O	Total	
Diesel	10.44702	0.001153	0.131493	10.58	
Natural Gas	12434.95	18.70055	5.786815	12459.44	
LPG	37.94143	0.033009	0.021036	37.78	

Emissions through refrigerant are accounted from various sources:

Type of Air Conditioning and	Refrigerant	Emis	ssions (MTCO	2e.)
Refrigeration Equipment	Used	CY 2018 (Base Year)	CY 2023	CY 2024
Welder, Chiller, and Instrument Air Dryer	R-407C	0	0	25.47
Split AC & Package AC	R-22	86.7	325.6	254.32
Chiller & water dispenser	R-134 A	0	4.55	5.85
Air Dryer	R-404 A	0	110.4	153.78
Gas insulated Substation	SF6 (Sulfur hexafluoride)	0	23.5	0
Split AC	R410	3.46	0	8.66

Note: Emissions through refrigerant used are included in scope 1 emissions. Besides these, there are no other process emissions directly resulting from production activities. All greenhouse gas (GHG) emissions are categorized under Scope 1(Fuel, Refrigerant), Scope 2 (Purchased Electricity), and Scope 3 are reported accordingly. GHG sinks and GHG removal has not been evaluated and hence is not reported.

Biogenic CO2 Emissions

There is no such emission is reported.

Exclusion of Any Significant GHG Sources or Sinks from the Quantification GHG sinks and GHG removal has not been evaluated and hence is not reported.

Emission Removals

There are no emissions removals to declare in this reporting period.

Indirect GHG Emissions



Purchased Electricity (Non-Renewable) – CSCI Plant

9561.178 Emission tCO₂e



Purchased Electricity (Non-Renewable) – CSCI Baroda Office

9.542 Emission tCO₂e

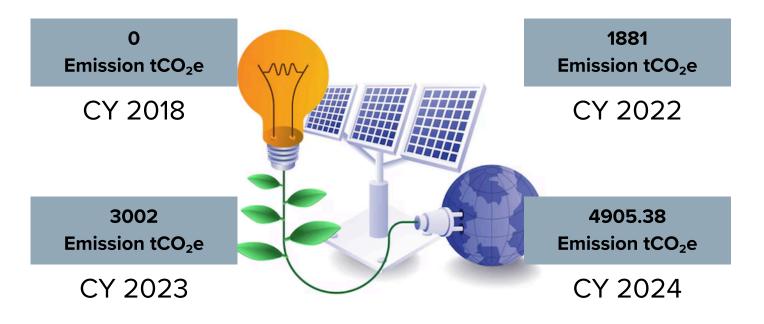
Purchased Electricity (Solar-Renewable) CSCI Plant

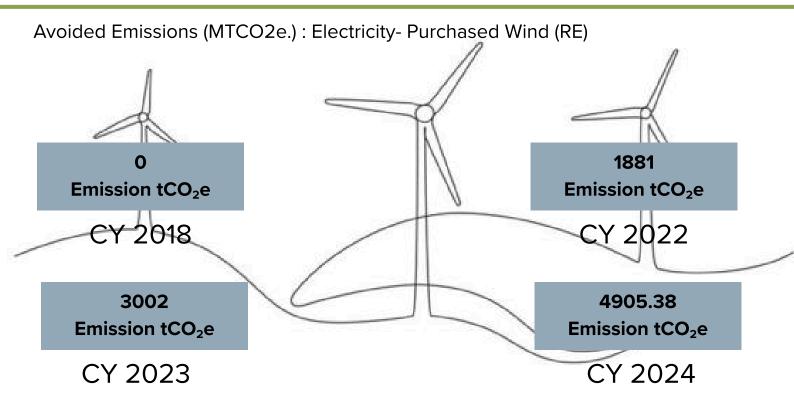
0 Emission tCO₂e Purchased Electricity
(Wind-Renewable) CSCI Plant

0 Emission tCO₂e

Avoided GHG emissions are accounted for the purchased solar and wind Energy:

Avoided Emissions (MTCO2e.): Electricity- Purchased Solar (RE)





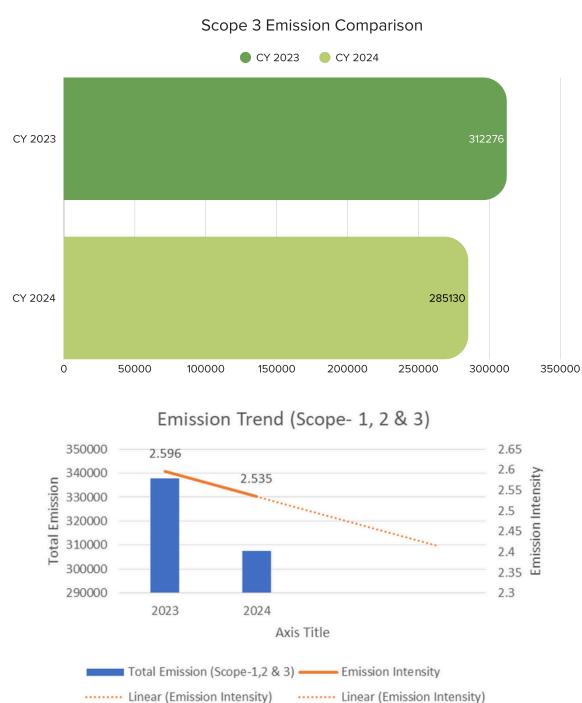
Page 19 GHG Accounting Report CY-24

Scope 3 Emissions - Category Wise Details:

Scope 3 categories	Emission Factor Database	Scope 3 Emission – CY 2024 (MT CO2e.)	Scope 3 Emission – CY 2023 (MT CO2e.) (Base Year)
Category 1: (Purchased goods and services)	EXIOBASE, ECOINVENT	257306	287793.18
Category 2: Capital Goods	EXIOBASE, ECOINVENT	87.89	80
Category 3: Fuel- and Energy-Related Activities	DEFRA, CEA	4455.211	7744
Category 4: Upstream Transportation and Distribution	DEFRA	8231.211	12691
Category 5: Waste Generated in Operations	IPCC, DEFRA	92.71	103
Category 6: Business Travel	DEFRA	109	121
Category 7: Employee Commute	INDIA GHG, IPCC	924.58	928
Category 9: Downstream Transportation and Distribution	ECOINVENT	11111	9731
Category 12: End-of-Life Treatment of Sold Products	DEFRA	2812.08	2739
Total Emission (MT CO2e.)	CY 2024 - 285130	CY 2023 - 312275.99

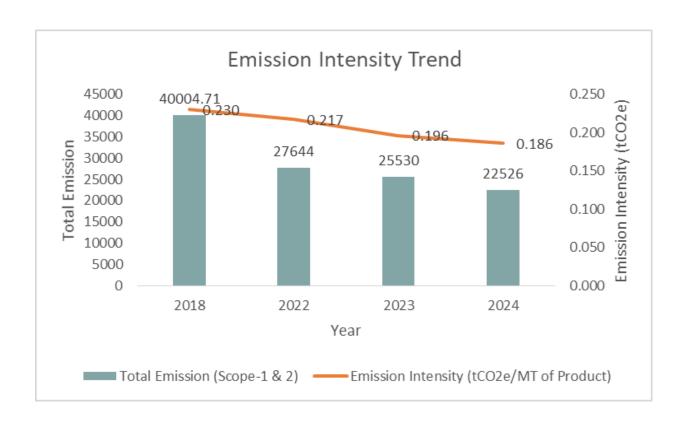
Each segment of the pie chart reflects the proportion of total GHG emissions attributed by these specific categories, providing a representation of their respective impacts on the carbon footprint for the year 2023.

Note: In CY 2023, emissions from raw material cold-rolled electrical steel were not included in Scope 3 Category 1 – Purchased Goods and Services. For CY 2024, we have included this material in our calculations and recalculated our base year emissions, as presented in the table above.



Page 21 GHG Accounting Report CY-24

In the last three years, there has been a notable decrease in greenhouse gas (GHG) emissions and intensities. This downward trend is largely due to the growing use of renewable energy sources, particularly solar and wind energy. The adoption of these cleaner energy alternatives has played a significant role in reducing the carbon footprint. The bifurcation for indirect energy consumption graph clearly illustrates this positive shift, which shows an increasing reliance on renewable energy sources, with a significant rise in the use of solar and wind energy.





Quantification

The CSCI Dahej team is responsible for acquiring activity data from the relevant sources within CSCI's finance, accounts and transport management systems.

Following this data collection phase, CSCI Steel'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 GWP values used in the calculation are taken from Department for Environment, Food and Rural Affairs (DEFRA) 2024, Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6), Central Electricity Authority, Version 20.

A detailed explanation of the methods used for quantification and 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 GHG protocol and 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).

Uncertainty Assessment

For this reporting, we have considered qualitative assessment for uncertainty assessment.

Emission factor from the internationally recognized framework and industry specific standards has been chosen for qualitative assessment.

The available data can exhibit an uncertainty <5%, which arises from the combination of data collection, integration and the selection of emission factors.

On the basis of qualitative analysis of data, we infer that, all data points were assessed for data quality to appraise representativeness in relation to technology, geography, time-period, completeness, and reliability and assigned a score on a scale of 1 to 4 (4 being poor; 1 being very good).

A single data quality score was calculated as a weighted average of all four representativeness categories (applying equal weighting). The quality of the overall dataset was appraised as a percentage of the total carbon footprint result which relies on data that is appraised as 'poor' as follows

Scale	% Total Footprint results from 'poor' data	Scale	Data Quality Category
1	<10%	1	Very Good
2	10% to 30%	2	Good
3	30% to <50%	3	Satisfactory
4	>50 <mark>%</mark>	4	Poor

Scope	Scale	Data Quality Appraisal	
Scope 1	1	Very Good	
Scope 2	1	Very Good	
Scope-3	2	Good	
Overall	1	Very Good	

Conclusion

CSCI recognizes that the impacts of climate change are detrimental to the global economy and that the climate crisis requires urgent attention and concrete actions. CSCI can play a significant role in mitigating these impacts by contributing to the decarbonization of the economy.

CSCI has diligently addressed both direct and indirect emissions, encompassing all applicable categories under Scope 3. This year, CSCI also chose to have its GHG inventory assured by a third-party (M/s. DQS India Pvt Ltd.), ensuring accuracy and reliability in their reporting. In future, CSCI plans to revise its targets and finalize a comprehensive roadmap for further mitigating its carbon footprint. This proactive approach underscores CSCI's commitment to continuous improvement and leadership in sustainability.



Emission Factor Reference

The Reporting considers the following greenhouse gases converted to CO2 equivalents- CO2, CH4, N20

S. No.	Activity	Ref	erences
1	Diesel, NG, LPG consumed in stationary Sources	2006 IPCC Guidelines for National Greenhouse Gas Inventories	IPCC 2006 Guidelines for National Greenhouse Gas Inventories, http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html
2	Acetylene gas used in welding works	Use of Acetylene as an Alternative Fuel in IC Engine (Prabin K Sharma et al.)	
3	Electricity Consumed	CO2 baseline database for the Indian Power Sector- Ministry of Power, CEA 2024	CDM - CO2 Baseline Database - Central Electricity Authority (cea.nic.in)
4	Refrigerant	GHG Protocol -AR5, DEFRA	Microsoft Word - Global- Warming-Potential- Values.docx (ghgprotocol.org)
5	Scope 3	Page. No.10 (Category wise details)	

Abbreviation

BRSR	Business Responsibility and Sustainability Reporting
CO2e	Carbon Dioxide equivalent
ESG	Environment Social Governance
GHG	Green House Gases

GRI	Global Reporting Initiative
ACL	Annealing and Coating Line
ETP	Effluent Treatment Plant
ТРА	Tons per Annum



Register Office:

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Plant Site:

Plot No. D- 2/6, GIDC, Dahej - II, Near Jolva Village, Dahej- 392130, Gujrat, India Tal: +91 9227989880

