Chromewell Engineering Private Limited

GHG Emissions Inventory Report 2025-2026

Version: 1.6 | Date: 27-05-2026

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1. Organization Details

Organization Name	Chromewell Engineering Private Limited
Organization Address	S.No. 882/1, Pune Nagar Road, Tal, opp. Kimberly Clark Co Shirur, Sanaswadi
Region	Asia
Country	India
City	Pune, Dewas
Pin code	412208
No. of Sub-Organizations/ Units	7
Reporting Period	1st Apr 2025 - 31st Mar 2026
Primary Contact	Risha Naik risha.naik@chromewell.in
Secondary Contact	Meghna Hazra meghna.hazra@chromewell.in

2. Executive Summary

Chromewell Engineering Private Limited (CEPL) is a renowned global manufacturer of sheet metal components, known for delivering superior quality products to global customers. With expertise in sheet metal stampings, deep draw and fabrications catering to the automobile and off-road vehicle sector including Safety related parts and are OEM to leading MNC's and domestic manufacturers.

CEPL offers a comprehensive range of services, encompassing of metal fabrication , R.O.P.S (Roll-Over protective Structures), brake pedals, steering columns, deep drawn parts, welded front axles, brake discs, and tubular and wire forms.

With manufacturing plants in Pune and Dewas, Chromewell have a state of the art set up with Press shop and Fabrication capabilities, including in-house Laser cutting, CNC pipe bending and Robotic welding.

A well-qualified team professionals manage its day to day affairs and help maximize production efficiently and to ensure the highest quality control capabilities while also constantly creating a vision for the future.

Chromewell is on a journey of continuous improvement, learning and adapting new technologies to diversify its product range and offer an end to end solution. A one stop shop for everything sheet metal.

3. About this Report

The Greenhouse Gas Emissions Report (“GHG Emissions Report” or “Report”) is being furnished for **Chromewell Engineering Private Limited** (collectively, with its subsidiaries, unless the context indicates otherwise, referred to as the “Company,” or the “firm”). All data in this report is presented for the reporting year **2025-2026** unless otherwise specified.

This report is generated by the **ClimeUp GHG** platform based on data entered by the users. While **ClimeUp GHG** facilitates the calculation and reporting of GHG emissions according to established methodologies, the accuracy of the results is dependent on the quality and completeness of the user-supplied data. This report is intended for informational purposes and is subject to external audit and verification.

4. GHG Emissions Reporting Protocols

The GHG Protocol, a Corporate Accounting and Reporting Standard (Revised Edition), was collaboratively established by non-governmental organizations, governments, and stakeholders under the guidance of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

This protocol provides a consistent standard and guidance for companies to measure and report their greenhouse gas (GHG) emissions. **Chromewell Engineering Private Limited** utilizes the WRI and WBCSD Greenhouse Gas Protocol for (Scope 1 and 2) to measure and report GHG Emissions from corporate operations. Additionally, the WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain addresses (Scope 3) Emissions, providing a standard for measuring and reporting on the broader corporate value chain.

5. Emission Factors

The calculation of GHG emissions in this report relies on emission factors, which represent the average rate of emissions released per unit of activity. These factors are used to convert activity data, such as liters of fuel burned or kilowatt-hours of electricity consumed, into corresponding GHG emissions. **ClimeUp GHG** uses emission factors from reputable sources like **IPCC**, **US EPA**, **UK DEFRA**, **INDIA GHG**, etc and regularly updates these factors to reflect the latest scientific understanding and regulatory guidelines. And the platform allows the users to select the most appropriate factors based on the user’s specific context. However, it’s important to note that emission factors are often averages and may not perfectly reflect the specific conditions of each user’s operations.

6. Emission Factor Accuracy

The accuracy of GHG emissions calculations depends not only on the activity data but also on the selection of appropriate emission factors. **ClimeUp GHG** provides a range of emission factors from recognized sources to facilitate this process. However, users are responsible for ensuring that the chosen emission factors accurately reflect their specific circumstances, fuel types, geographic location, and other relevant factors. **ClimeUp GHG** accepts no liability for discrepancies arising from the use of unsuitable emission factors. And it is recommended to consult with GHG emission accounting experts to validate the emission factors selection and mapping before publishing the report.

7. Level of Assurance and Qualifications

Chromewell Engineering Private Limited leveraged the **ClimeUp™** GHG platform to perform a quantification, reporting and review engagement on management's assertion that the GHG Emissions Report for the year **2025-2026**, is presented in accordance with the GHG Protocol. Any information relating to periods prior or after the period **2025-2026**, and information relating to forward-looking statements, targets, goals, and progress against goals, were not subject to the review and, accordingly, and Hereby **ClimeUp™** does not express a conclusion or any form of assurance on such information.

- Limited Assurance: (Scope 1, Scope 2 and Scope 3)
- Materiality Threshold: ±5%

8. Important Notes and Limitations

This report presents non-financial metrics subject to measurement uncertainties due to inherent limitations in nature and methodologies employed. Varied but acceptable measurement techniques, including estimation, may yield materially different results, and their precision can differ. Some information relies on third-party sources deemed reliable by **ClimeUp™**. Inclusion in this report does not imply a characterization of materiality or financial impact. All statements, excluding historical facts, may be forward-looking, covering aspects such as **Chromewell Engineering Private Limited**, climate, and sustainability-related strategies, plans, developments, targets, goals, and expectations.

9. Reporting Period

1st Apr 2025 - 31st Mar 2026

10. Reporting Boundaries

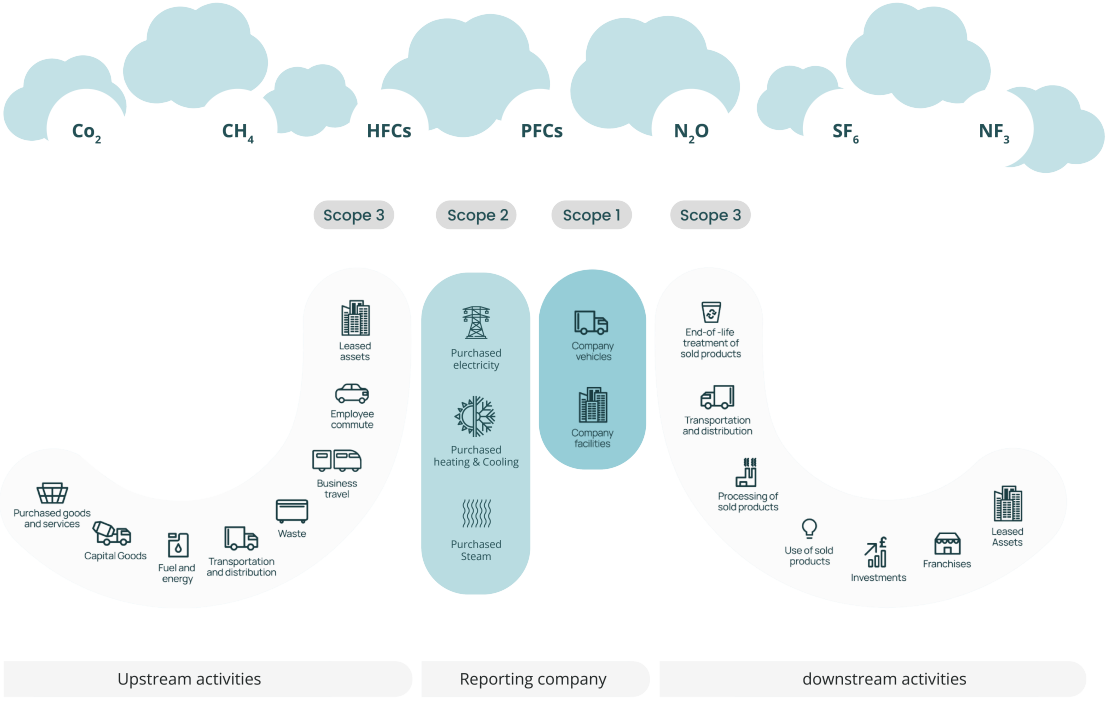
S.No	Reporting Boundaries	Registered Address
1	1001 - Pune	S.No. 882/1, Pune Nagar Road, Tal, opp. Kimberly Clark Co, Shirur, Sanaswadi, Pune, Maharashtra, India, 412208
2	1002 - Dewas	Khasra No. 108/2, Village khatamba, Amarpura Road, Dewas, Madhya Pradesh, India, 455001
3	CCI - Dewas	Khasara No. 108/1, Village Khatamba, Amapura Road, Dewas, Madhya Pradesh, India, 455001
4	Ambition Warehouse	PAP-S-105, Opposite line of Schindler Pvt Ltd, Bambholi, Phase II, Tal Khed Dist., Pune, Maharashtra, India, 412208
5	Marc Warehouse	Gate No. 143, Sanswadi Tal, Shirur Dist., Pune, Maharashtra, India, 412208
6	1003 - Pune 2	Gat No -1055/2, Pune Nagar Road, Near Dongar Wasti, BPCL Plant, Shirur, Sanaswadi, Pune, Maharashtra, India, 412208
7	1004 - CEPL Paintshop	GAT No. 1058, 1059, 1060, 1061, 1062, 1063, Shirur, Sanaswadi, Pune, Maharashtra, India, 412208

11. Greenhouse Gas (GHG) Quantification Methodology

ClimeUp™ has implemented the GHG quantification process for **Chromewell Engineering Private Limited** in conformance to the requirements outlined in ISO 14064-1:2018 Standard. This document has been auto generated by **ClimeUp™** GHG Management Software which uses the methodology that is aligned with the GHG Protocol Corporate accounting and reporting standard.

In order to establish the operational boundary, **ClimeUp™** has diligently identified and assessed the sources of emissions associated with **Chromewell Engineering Private Limited**'s operations, focusing on the major Greenhouse Gases (GHGs) such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

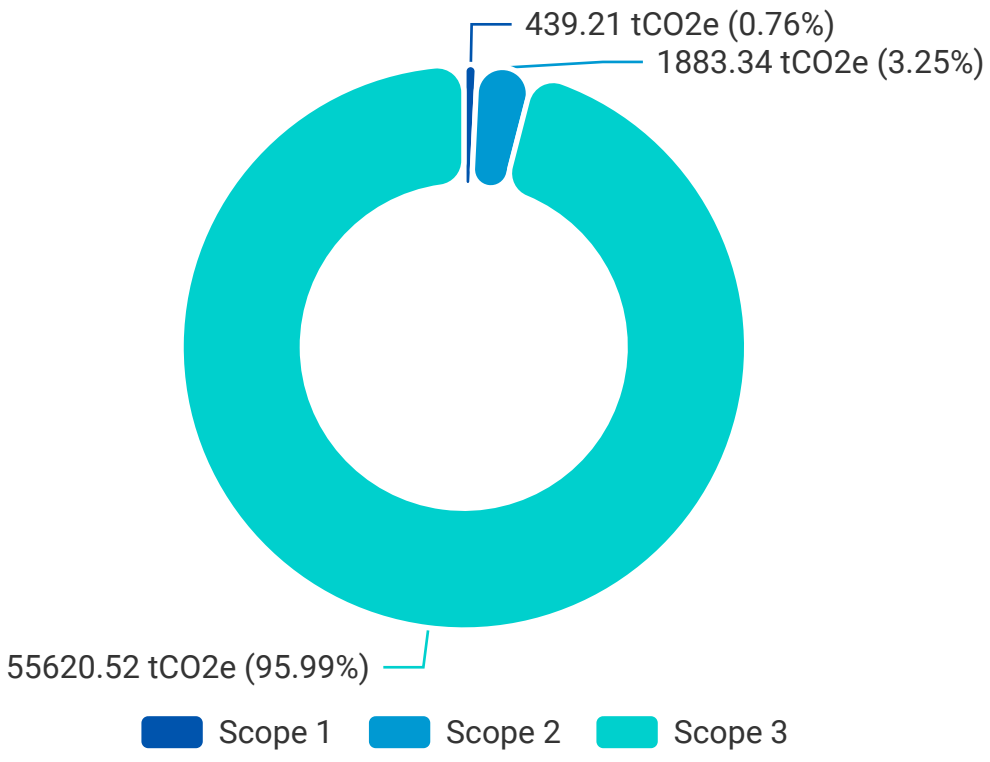
To accurately categorize emissions, **ClimeUp™** follows the GHG Protocol corporate standard, which classifies emissions into three distinct scopes:



12. GHG Emissions Overview

The total calculated GHG emissions for **Chromewell Engineering Private Limited** is **57943.079** **tCO_2e**. The summary of emissions for the reporting year 1st Apr 2025 - 31st Mar 2026 is as below:

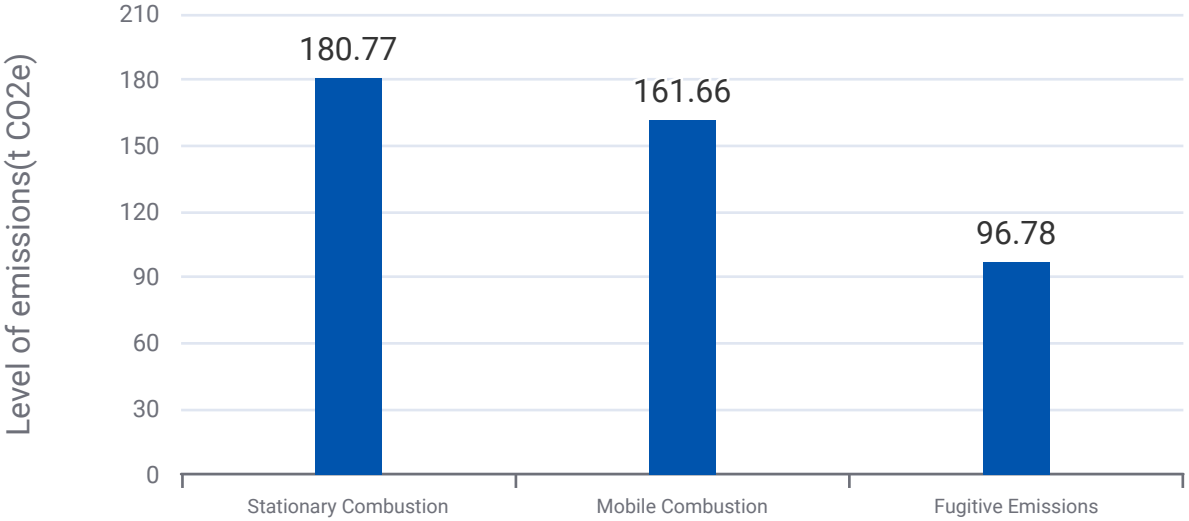
Scopes	Total Emissions (tCO_2e)	Distribution (%)
Scope 1 (Direct Emission)	439.21	0.76
Scope 2 (Indirect Emission within organization boundary)	1883.34	3.25
Scope 3 (Indirect Emission outside organization boundary)	55620.52	95.99
Total	**57943.079**	**100**



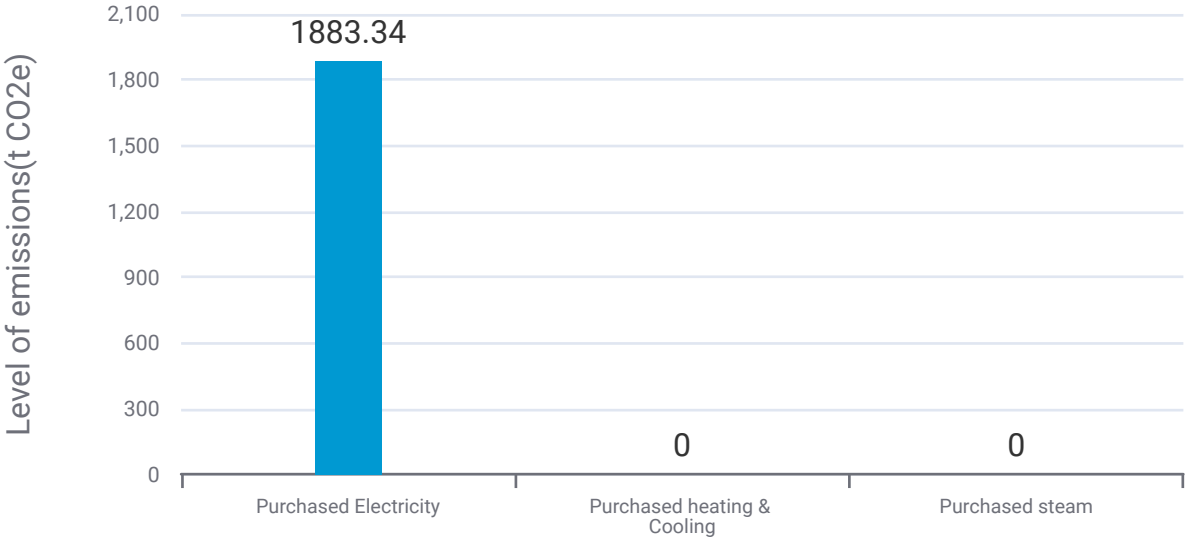
13. Emissions By Scope

Overall emissions: 57943.079 tCO_2e

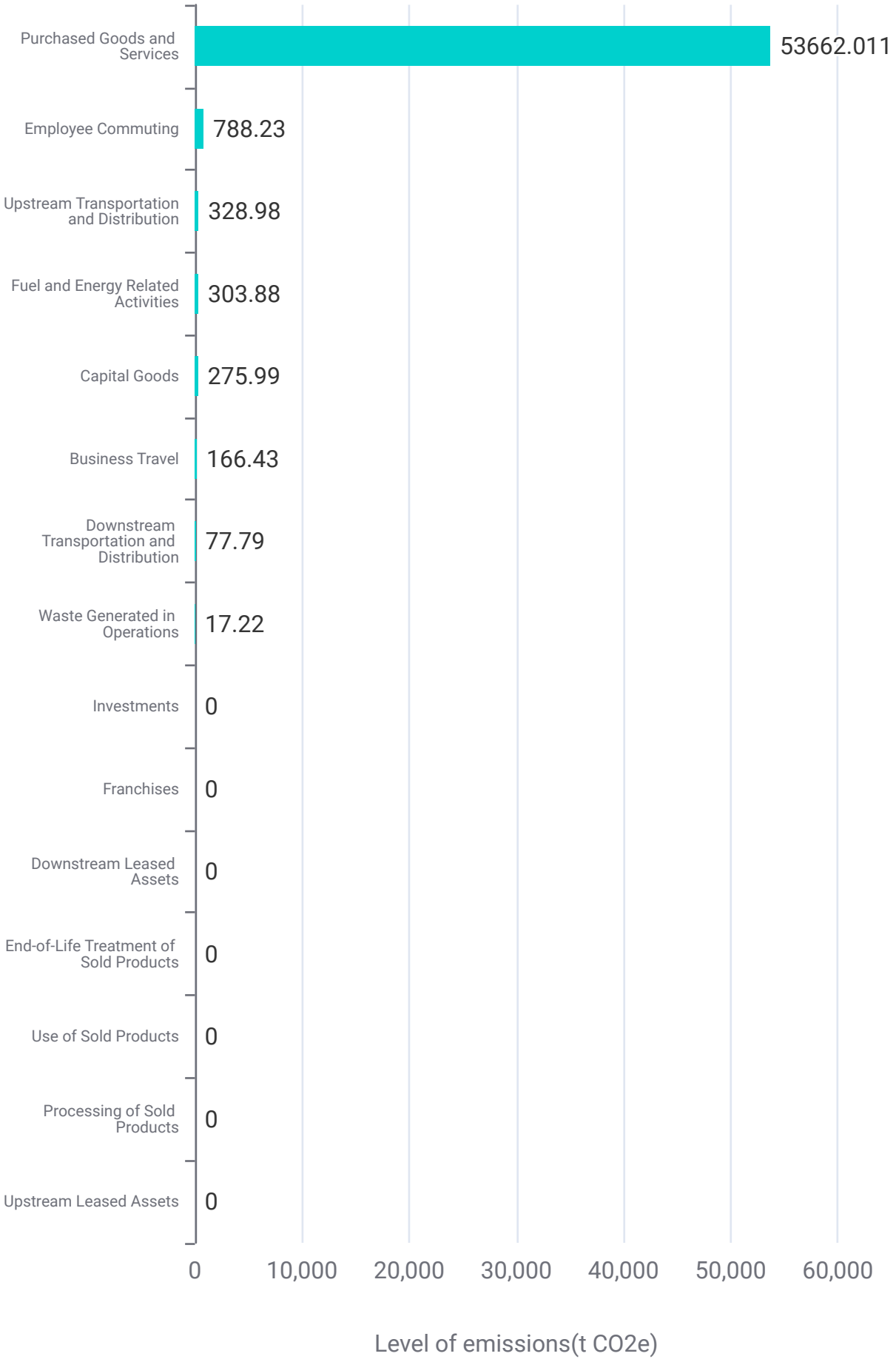
13.1. Scope 1



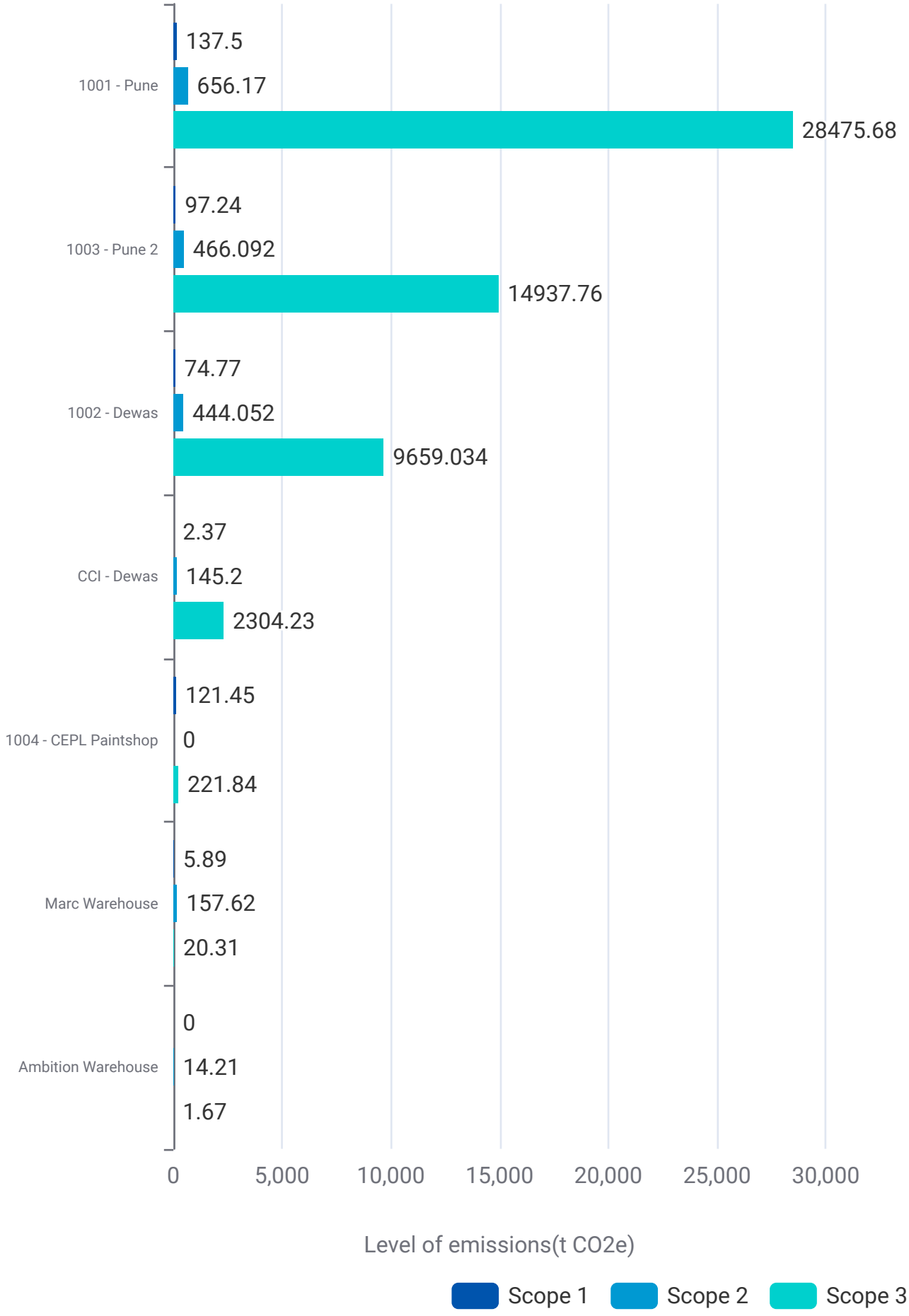
13.2. Scope 2



13.3. Scope 3


Purchased Goods and Services
53662.011
Employee Commuting
788.23
Upstream Transportation and Distribution
328.98
Fuel and Energy Related Activities
303.88
Capital Goods
275.99
Business Travel
166.43
Downstream Transportation and Distribution
77.79
Waste Generated in Operations
17.22
Investments
0
Franchises
0
Downstream Leased Assets
0
End-of-Life Treatment of Sold Products
0
Use of Sold Products
0
Processing of Sold Products
0
Upstream Leased Assets
0
0
10,000
20,000
30,000
40,000
50,000
60,000
Level of emissions(t CO2e)

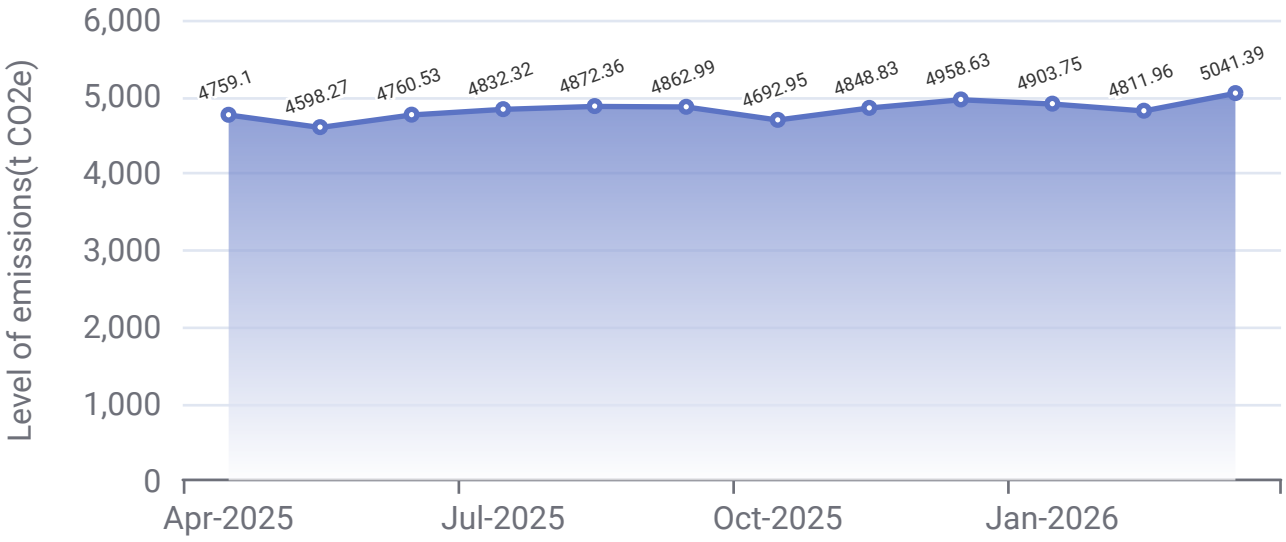
14. Emissions By Facilities



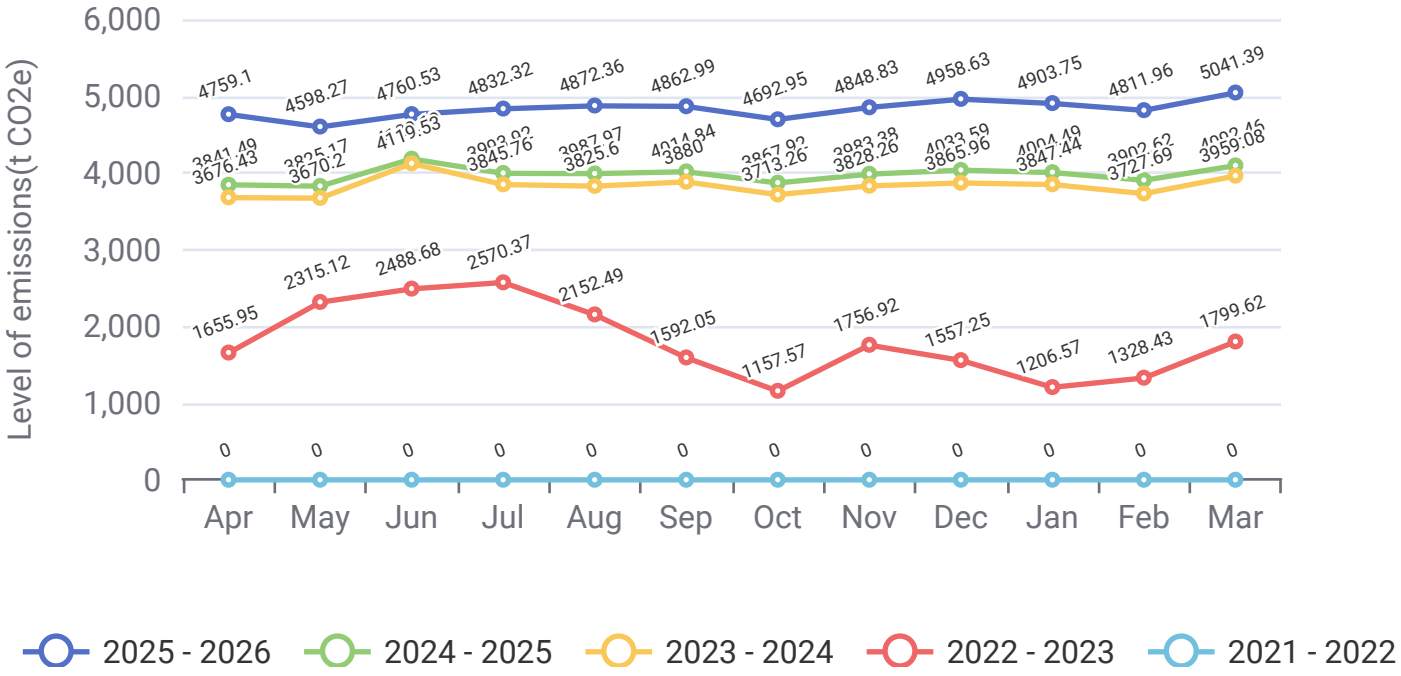
14.1. Emission Summary

Organization Name	Scope 1 (tCO_2e)	Scope 2 (tCO_2e)	Scope 3 (tCO_2e)	Overall (tCO_2e)	Allocation(%) Operational control	Emission accounted for Chromewell Engineering Private Limited (tCO_2e)
1001 - Pune	137.5	656.17	28475.68	29269.35	100	29269.35
1002 - Dewas	74.77	444.052	9659.034	10177.85	100	10177.85
CCI - Dewas	2.37	145.2	2304.23	2451.8	100	2451.8
Ambition Warehouse	0	14.21	1.67	15.88	100	15.88
Marc Warehouse	5.89	157.62	20.31	183.82	100	183.82
1003 - Pune 2	97.24	466.092	14937.76	15501.087	100	15501.087
1004 - CEPL Paintshop	121.45	0	221.84	343.29	100	343.29
Total	**439.22**	**1883.34**	**55620.52**	**57943.077**	**-**	**57943.077**

15. Overall Emission Trends



16. Multi-Year Emissions Trend



17. Recalculation of Base Year GHG Emissions

In line with the GHG Protocol's significance threshold and our internal Inventory Management Plan, the base year and historical GHG emissions have been recalculated in FY 25–26. The recalculation has been undertaken to preserve the consistency, comparability and accuracy of our emissions inventory, and is driven by the following structural and methodological changes:

17.1. Structural changes in the operational boundary

- **New facilities commissioned:** Plant 1003 and Plant 1004 have been newly constructed and have commenced operations during the reporting period. Emissions from these facilities have been incorporated into the inventory and reflected in the recalculated base year to enable like-for-like comparison.
- **Facility closures:** The Metacoat Warehouse and the New Golden Warehouse have been decommissioned during the year. Emissions associated with these sites have been removed from the inventory across the reporting timeline.

17.2. Expansion of Scope 3 coverage

The Scope 3 boundary has been extended, wherever data availability permits, to include the following additional categories:

- Category 3.6 — Business Travel
- Category 3.7 — Employee Commuting
- Category 3.9 — Downstream Transportation and Distribution

17.3. Inclusion of Well-to-Tank (WTT) emissions

Well-to-Tank (WTT) emissions have now been incorporated across all applicable Scope 3 categories, ensuring that the inventory reflects the full lifecycle emissions associated with energy and fuel use.

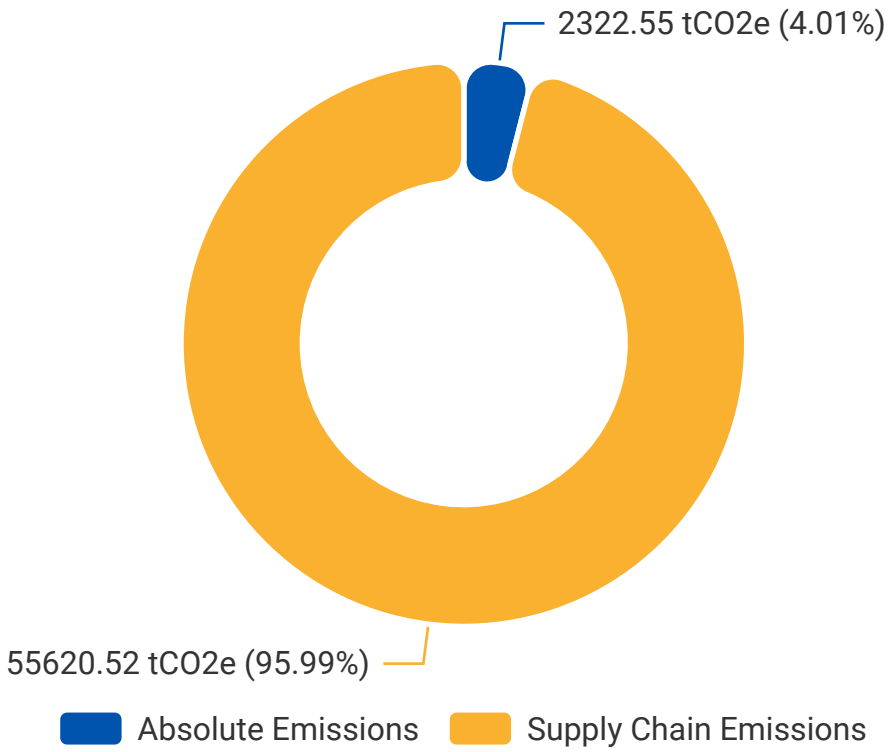
17.4. Methodological refinement of emission factors

For Category 3.1 (Purchased Goods and Services), we have transitioned from **spend-based emission factors to activity-based (material-specific) emission factors**, in alignment with national standards and the GHG Protocol's hierarchy of data quality. This shift delivers wider coverage, greater accuracy, and a more robust baseline for tracking decarbonization progress against our science-based targets.

Net effect:

Taken together, these adjustments result in a more complete, accurate and audit-ready GHG inventory. The recalculated base year provides a consistent foundation for measuring year-on-year performance, supports our SBTi-aligned reduction trajectory, and ensures continued alignment with the GHG Protocol Corporate Standard, the Corporate Value Chain (Scope 3) Standard, and applicable national reporting requirements.

18. Absolute Vs Supply Chain Emissions



19. Conclusion

This Greenhouse Gas (GHG) Emission Inventory Report for the **1st Apr 2025 - 31st Mar 2026** represents a crucial milestone in **Chromewell Engineering Private Limited**'s commitment to environmental stewardship and climate action. By systematically quantifying our Scope 1, Scope 2, and relevant Scope 3 emissions in accordance with the GHG Protocol, we have established a robust and transparent baseline of our operational and value chain carbon footprint.

The findings presented herein provide invaluable insights into our primary emission sources, empowering us to identify targeted opportunities for reduction. This report is not merely a compliance exercise but a foundational step towards integrating climate considerations into our core business strategy. Moving forward, **Chromewell Engineering Private Limited** is committed to leveraging this data to:

- **Set ambitious, science-aligned emission reduction targets**.
- **Implement strategic initiatives** to enhance energy efficiency, transition to renewable energy sources, and optimize operational processes.
- **Engage our value chain partners** to collectively address Scope 3 emissions.
- **Track and publicly report** our progress transparently to all stakeholders.

Through these concerted efforts, **Chromewell Engineering Private Limited** reaffirms its dedication to mitigating climate change, fostering a more sustainable future, and delivering long-term value for our business, our stakeholders, and the planet."

20. Glossary

Carbon Footprint	The total amount of greenhouse gases generated by the reporting entity actions.
Emission Factor	The average rate of emissions released per unit of activity data (e.g., litres of fuel burned, kilowatt-hours of electricity consumed).
EPA	Environmental Protection Agency.
DEFRA	Department for Environment, Food & Rural Affairs (a UK government department).
GHG	Greenhouse Gas.
GHG Protocol	A widely used accounting tool to measure and report greenhouse gas emissions.
IPCC	Intergovernmental Panel on Climate Change.
WBCSD	World Business Council for Sustainable Development.
WRI	World Resources Institute.
ISO 14064-1:2018	An international standard for quantifying and reporting greenhouse gas emissions.
Operational Boundary	The boundary that encompasses the emissions from the entities over which the company has operational control.
Scope 1 Emissions (Direct Emissions)	Greenhouse gas emissions that occur from sources that are owned or controlled by the reporting company.
Scope 2 Emissions (Indirect Emissions)	Greenhouse gas emissions that occur from the generation of purchased electricity, heat, and steam consumed by the reporting company.
Scope 3 Emissions (Indirect Emissions)	Greenhouse gas emissions that occur in the value chain of the reporting company, both upstream and downstream.
tCO2e	Tonnes of carbon dioxide equivalent. A unit of measurement used to compare the emissions from various greenhouse gases based on their global warming potentials.
MTCO2e	Metric tonnes of carbon dioxide equivalent.

Renewable Energy	Energy derived from natural processes that are replenished constantly, such as solar, wind, and hydropower.
Limited Assurance	A type of assurance engagement where the practitioner provides a moderate level of assurance that the subject matter is free from material misstatement.
Materiality Threshold	A level at which misstatements, including omissions, are considered significant enough that they could influence the decisions of users of the information.

21. Emission Factors

21.1. Scope 1 Emission Factors

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Fuel : Diesel [Road Transportation]	L	Volume	2.68	GLEC	2025	Asia
Refrigerants and Fugitive Gases : Methylene chloride [na]	kg	Weight	9	BEIS	2025	Great Britain
Fuel : Oil products [Other petroleum products]	t	Weight	2964.31	IPCC	2016	Global
Fuel : Liquid petroleum gas [na]	t	Weight	2939.36	BEIS	2025	Great Britain
Fuel : Petrol [Road Transportation]	litre	Volume	2.23	GLEC	2025	Asia
Refrigerants and Fugitive Gases : Carbon dioxide [na]	kg	Weight	1	BEIS	2024	Great Britain
Refrigerants and Fugitive Gases : Carbon dioxide [na]	kg	Weight	1	BEIS	2025	Great Britain
Refrigerants and Fugitive Gases : Carbon dioxide [na]	kg	Weight	1	BEIS	2025	Great Britain
Refrigerants and Fugitive Gases : Carbon dioxide [CO2]	kg	Weight	1	US EPA	2024	Others
Nitrogen, Liquid : NA with LR Weight	kg	Weight	0.43	Secondary LCA dataset – City of Winnipeg	2012	Winnipeg

21.2. Scope 2 Emission Factors

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Electricity generated from National Grid- India,India	kWh	Energy	0.71	CEA INDIA	2025	Others

21.3. Scope 3 Emission Factors

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Purchased Goods and Services_JSW Customer specific [na]: RM Steel	t	Weight	3052	GHG_JSW_Customer Specific	2025	Asia
Electricity transmission and distribution from National Grid- India,India	kWh	Energy	0.04	CEA INDIA	2025	Others
WTT- UK electricity (generation) from UK Grid,UK	kWh	Energy	0.05	BEIS	2025	Great Britain
Liquid Oxygen : NA with LR Weight	kg	Weight	0.49	Ecoinvent	2021	Global
Welding and Soldering Equipment Manufacturing [333992]	USD	Money	0.25	US EPA EEIO Commodities	2025	United States of America
Fuel : Diesel [Road Transportation]	litre	Volume	0.81	GLEC	2025	Asia
Diesel WTT- HGV (all diesel) : Rigid (>17 tonnes) with LR 100%	km	Distance	0.26	BEIS	2025	Great Britain
Diesel HGV (all diesel) : Rigid (>17 tonnes) with LR Average	km	Distance	0.99	BEIS	2025	Great Britain
Commercial and industrial machinery and equipment repair and maintenance [811300]: Commercial machinery repair	USD	Money	0.14	US EPA EEIO Commodities	2025	United States of America
Computer terminals and other computer peripheral equipment manufacturing [334118]: Computer terminals and other computer peripheral equipment	USD	Money	0.12	US EPA EEIO Commodities	2025	United States of America
Metal Waste : Metal: scrap metal [Closed-loop]	t	Weight	4.69	BEIS	2025	Great Britain

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Electronic Connector Manufacturing [334417]	USD	Money	0.1	US EPA EEIO Commodities	2025	United States of America
Switchgear and switchboard apparatus manufacturing [335313]: Switchgear and switchboards	USD	Money	0.27	US EPA EEIO Commodities	2025	United States of America
Wireless telecommunications carriers (except satellite) [517210]: Wireless telecommunications	USD	Money	0.19	US EPA EEIO Commodities	2025	United States of America
Electricity generated from National Grid- India,India	kWh	Energy	0.71	CEA INDIA	2025	Others
Fuel : Diesel [Road Transportation]	L	Volume	2.68	GLEC	2025	Asia
Plastics Packaging Film and Sheet (including Laminated) Manufacturing [326112]	USD	Money	0.54	US EPA EEIO Commodities	2025	United States of America
Corrugated and Solid Fiber Box Manufacturing [322211]	USD	Money	0.48	US EPA EEIO Commodities	2025	United States of America
All other miscellaneous electrical equipment and component manufacturing [335999]: other miscellaneous electrical equipment and components	USD	Money	0.22	US EPA EEIO Commodities	2025	United States of America
Wood Container and Pallet Manufacturing [321920]	USD	Money	0.16	US EPA EEIO Commodities	2025	United States of America
Machine tool manufacturing [333517]: Metal cutting and forming machine tools	USD	Money	0.27	US EPA EEIO Commodities	2025	United States of America
Special tool, die, jig, and fixture manufacturing [333514]: Special tools, dies, jigs, and fixtures	USD	Money	0.27	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
All Other Converted Paper Product Manufacturing [322299]	USD	Money	0.34	US EPA EEIO Commodities	2025	United States of America
Fabricated pipe and pipe fitting manufacturing [332996]: Fabricated pipe and pipe fittings	USD	Money	0.42	US EPA EEIO Commodities	2025	United States of America
Turned product and screw, nut, and bolt manufacturing [332720]: Screws, nuts, and bolts	USD	Money	0.36	US EPA EEIO Commodities	2025	United States of America
All Other Business Support Services [561499]	USD	Money	0.11	US EPA EEIO Commodities	2025	United States of America
Coating, engraving, heat treating and allied activities [332800]: Metal coatings, engravings, and heat treatments	USD	Money	0.57	US EPA EEIO Commodities	2025	United States of America
Other support services [561900]: Other support services	USD	Money	0.16	US EPA EEIO Commodities	2025	United States of America
Employment services [561300]: Employment services	USD	Money	0.04	US EPA EEIO Commodities	2025	United States of America
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance [811310]	USD	Money	0.1	US EPA EEIO Commodities	2025	United States of America
All Other Professional, Scientific, and Technical Services [541990]	USD	Money	0.08	US EPA EEIO Commodities	2025	United States of America
Outpatient care centers [621400]: Outpatient healthcare	USD	Money	0.15	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Petroleum and petroleum products [424700]: Petroleum and petroleum products	USD	Money	0.11	US EPA EEIO Commodities	2025	United States of America
All Other Automotive Repair and Maintenance [811198]	USD	Money	0.1	US EPA EEIO Commodities	2025	United States of America
Air transportation [481000]: Air transport	USD	Money	0.97	US EPA EEIO Commodities	2025	United States of America
Other real estate [531ORE]: Other real estate	USD	Money	0.41	US EPA EEIO Commodities	2025	United States of America
Paint and coating manufacturing [325510]: Paints and coatings	USD	Money	0.6	US EPA EEIO Commodities	2025	United States of America
Other Basic Inorganic Chemical Manufacturing [325180]: Other basic inorganic chemicals	USD	Money	0.77	US EPA EEIO Commodities	2025	United States of America
Industrial Gas Manufacturing [325120]	USD	Money	1.12	US EPA EEIO Commodities	2025	United States of America
Sanitary paper product manufacturing [322291]: Sanitary paper (tissues, napkins, diapers, etc.)	USD	Money	0.5	US EPA EEIO Commodities	2025	United States of America
Other plastics product manufacturing [326190]: Other plastic products	USD	Money	0.54	US EPA EEIO Commodities	2025	United States of America
Other rubber product manufacturing [326290]: Other rubber products	USD	Money	0.49	US EPA EEIO Commodities	2025	United States of America
Urethane and other foam product (except polystyrene) manufacturing [326150]: Urethane and other foam products	USD	Money	0.42	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Plastics material and resin manufacturing [325211]: Plastics	USD	Money	1.53	US EPA EEIO Commodities	2025	United States of America
Sawmills and wood preservation [321100]: Lumber and treated lumber	USD	Money	0.31	US EPA EEIO Commodities	2025	United States of America
Other fabricated metal manufacturing [332999]: Misc. fabricated metal products	USD	Money	0.36	US EPA EEIO Commodities	2025	United States of America
Other basic organic chemical manufacturing [325190]: Other basic organic chemicals	USD	Money	1.66	US EPA EEIO Commodities	2025	United States of America
Miscellaneous nonmetallic mineral products [327999]: Other nonmetallic mineral products	USD	Money	0.79	US EPA EEIO Commodities	2025	United States of America
All other miscellaneous manufacturing [339990]: Gaskets, seals, musical instruments, fasteners, brooms, brushes, mop and other misc. goods	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Other industrial machinery manufacturing [33329A]: Machinery for the paper, textile, food or other industries (except semiconductor machinery)	USD	Money	0.25	US EPA EEIO Commodities	2025	United States of America
Watch, clock, and other measuring and controlling device manufacturing [33451A]: Watches, clocks, and other measuring and controlling devices	USD	Money	0.11	US EPA EEIO Commodities	2025	United States of America
Coffee and tea manufacturing [311920]: Coffee and tea	USD	Money	0.42	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Paper Bag and Coated and Treated Paper Manufacturing [322220]: Paper bags and coated paper	USD	Money	0.62	US EPA EEIO Commodities	2025	United States of America
Sign manufacturing [339950]: Signs	USD	Money	0.36	US EPA EEIO Commodities	2025	United States of America
Other textile product mills [314900]: Other textiles	USD	Money	0.31	US EPA EEIO Commodities	2025	United States of America
Glass and glass product manufacturing [327200]: Glass and glass products	USD	Money	0.58	US EPA EEIO Commodities	2025	United States of America
Soap and cleaning compound manufacturing [325610]: Soap and cleaning compounds	USD	Money	0.48	US EPA EEIO Commodities	2025	United States of America
All Other Support Activities for Transportation [488999]	USD	Money	0.16	US EPA EEIO Commodities	2025	United States of America
Accommodation [721000]: Hotels and campgrounds	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America
All Other Support Services [561990]	USD	Money	0.12	US EPA EEIO Commodities	2025	United States of America
Printing [323110]: Books, newspapers, magazines, and other print media	USD	Money	0.38	US EPA EEIO Commodities	2025	United States of America
All other converted paper product manufacturing [322299]: All other converted paper products	USD	Money	0.55	US EPA EEIO Commodities	2025	United States of America
Commercial and industrial machinery and equipment repair and maintenance [811300]: Commercial machinery repair	USD	Money	0.12	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Office supplies (except paper) manufacturing [339940]: Office supplies (not paper)	USD	Money	0.35	US EPA EEIO Commodities	2025	United States of America
Natural gas distribution [221200]: Natural gas	USD	Money	0.76	US EPA EEIO Commodities	2025	United States of America
Sugar and confectionery product manufacturing [311300]: Sugar, candy, and chocolate	USD	Money	0.53	US EPA EEIO Commodities	2025	United States of America
Cookie, cracker, pasta, and tortilla manufacturing [3118A0]: Cookies, crackers, pastas, and tortillas	USD	Money	0.72	US EPA EEIO Commodities	2025	United States of America
Warehousing and storage [493000]: Warehousing	USD	Money	0.69	US EPA EEIO Commodities	2025	United States of America
Material handling equipment manufacturing [333920]: Material handling equipment	USD	Money	0.3	US EPA EEIO Commodities	2025	United States of America
Plate Work Manufacturing [332313]	USD	Money	0.26	US EPA EEIO Commodities	2025	United States of America
Computer terminals and other computer peripheral equipment manufacturing [334118]: Computer terminals and other computer peripheral equipment	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America
Electronic computer manufacturing [334111]: Computers	USD	Money	0.11	US EPA EEIO Commodities	2025	United States of America
Electric power generation, transmission, and distribution [221100]: Electricity	USD	Money	4.04	US EPA EEIO Commodities	2025	United States of America
Fuel : Petrol [Road Transportation]	litre	Volume	0.71	GLEC	2025	Asia

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Fuel : Diesel [Rail Trasnportation]	litre	Volume	0.88	GLEC	2025	Asia
Fuel : Liquid petroleum gas [na]	t	Weight	349.29	BEIS	2025	Great Britain
Fuel : Processed fuel oils [na]	t	Weight	1132.08	BEIS	2025	Great Britain
Other Waste : Clothing [Closed-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Plastic Waste : Plastics: PVC (incl. forming) [Closed-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Paper Waste : Paper and board: mixed [Closed-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Construction Waste : Wood [Closed-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Petrol WTT- Motorbike : Small	km	Distance	0.02	BEIS	2025	Great Britain
n.a. WTT- Bus : Local bus (not London)	Pax.km	Passenger over Distance	0.03	BEIS	2025	Great Britain
Petrol WTT- Motorbike : Medium	km	Distance	0.03	BEIS	2025	Great Britain
CNG WTT- Cars (by size) : Medium car	km	Distance	0.03	BEIS	2025	Great Britain
Petrol WTT- Cars (by size) : Small car	km	Distance	0.04	BEIS	2025	Great Britain
CNG Cars (by size) : Medium car	km	Distance	0.16	BEIS	2025	Great Britain
Petrol Cars (by size) : Small car	km	Distance	0.14	BEIS	2025	Great Britain
Petrol Motorbike : Small	km	Distance	0.08	BEIS	2025	Great Britain
Diesel Managed motorbikes : Small with LR Average	km	Distance	0.08	BEIS	2025	Great Britain
Petrol Motorbike : Medium	km	Distance	0.1	BEIS	2025	Great Britain
Unknown Local bus (not London) Bus	Pax.km	Passenger over Distance	0.13	BEIS	2025	Great Britain

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Plate work and fabricated structural product manufacturing [332310]: Metal structural products	USD	Money	0.41	US EPA EEIO Commodities	2025	United States of America
Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing [33351B]: Cutting and machine tool accessory, rolling mill, and other metalworking machines	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Individual and family services [624100]: Individual and family services	USD	Money	0.16	US EPA EEIO Commodities	2025	United States of America
Plastics packaging materials and unlaminated film and sheet manufacturing [326110]: Plastic bags, films, and sheets	USD	Money	0.78	US EPA EEIO Commodities	2025	United States of America
Ornamental and architectural metal products manufacturing [332320]: Metal windows, doors, and architectural products	USD	Money	0.33	US EPA EEIO Commodities	2025	United States of America
Cutlery and handtool manufacturing [332200]: Cutlery and handtools	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Petroleum refineries [324110]: Gasoline, fuels, and by-products of petroleum refining	USD	Money	1.12	US EPA EEIO Commodities	2025	United States of America
Scientific research and development services [541700]: Scientific research and development	USD	Money	0.19	US EPA EEIO Commodities	2025	United States of America
Investigation and security services [561600]: Investigation and security	USD	Money	0.09	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Office administrative services [561100]: Office administration	USD	Money	0.1	US EPA EEIO Commodities	2025	United States of America
Management consulting services [541610]: Management consulting	USD	Money	0.08	US EPA EEIO Commodities	2025	United States of America
Automotive repair and maintenance [811100]: Vehicle repair	USD	Money	0.17	US EPA EEIO Commodities	2025	United States of America
Other computer related services, including facilities management [54151A]: Other computer related services, including facilities management	USD	Money	0.08	US EPA EEIO Commodities	2025	United States of America
Ball and roller bearing manufacturing [332991]: Ball and roller bearings	USD	Money	0.3	US EPA EEIO Commodities	2025	United States of America
Industrial gas manufacturing [325120]: Compressed Gases	USD	Money	1.13	US EPA EEIO Commodities	2025	United States of America
Accounting, tax preparation, bookkeeping, and payroll services [541200]: Accounting, tax preparation, bookkeeping, and payroll	USD	Money	0.06	US EPA EEIO Commodities	2025	United States of America
Spring and wire product manufacturing [332600]: Springs and wires	USD	Money	0.41	US EPA EEIO Commodities	2025	United States of America
Paperboard container manufacturing [322210]: Cardboard containers	USD	Money	0.57	US EPA EEIO Commodities	2025	United States of America
Small electrical appliance manufacturing [335210]: Small electrical appliances	USD	Money	0.37	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Lighting fixture manufacturing [335120]: Light fixtures	USD	Money	0.29	US EPA EEIO Commodities	2025	United States of America
Air and gas compressor manufacturing [333912]: Air and gas compressors	USD	Money	0.25	US EPA EEIO Commodities	2025	United States of America
Other commercial and service industry machinery manufacturing [333318]: Other commercial and service industry machinery	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Pump and pumping equipment manufacturing [33391A]: Pumps and pumping equipment	USD	Money	0.23	US EPA EEIO Commodities	2025	United States of America
Automatic environmental control manufacturing [334512]: Automatic controls for HVAC and refrigeration equipment	USD	Money	0.17	US EPA EEIO Commodities	2025	United States of America
Petroleum Lubricating Oil and Grease Manufacturing [324191]	USD	Money	0.39	US EPA EEIO Commodities	2025	United States of America
Power-Driven Handtool Manufacturing [333991]	USD	Money	0.13	US EPA EEIO Commodities	2025	United States of America
Wiring device manufacturing [335930]: Wiring devices	USD	Money	0.31	US EPA EEIO Commodities	2025	United States of America
Plumbing fixture fitting and trim manufacturing [332913]: Metal plumbing drains, faucets, valves, and other fittings	USD	Money	0.26	US EPA EEIO Commodities	2025	United States of America
Motor and generator manufacturing [335312]: Motors and generators	USD	Money	0.25	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Leather and allied product manufacturing [316000]: Leather	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Communication and energy wire and cable manufacturing [335920]: Communication and energy wire and cable	USD	Money	0.46	US EPA EEIO Commodities	2025	United States of America
Paper mills [322120]: Paper	USD	Money	0.79	US EPA EEIO Commodities	2025	United States of America
Adhesive manufacturing [325520]: Adhesives	USD	Money	0.76	US EPA EEIO Commodities	2025	United States of America
Water, sewage and other systems [221300]: Drinking water and wastewater treatment	USD	Money	0.56	US EPA EEIO Commodities	2025	United States of America
Primary battery manufacturing [335912]: Primary batteries	USD	Money	0.27	US EPA EEIO Commodities	2025	United States of America
Other Miscellaneous Nondurable Goods Merchant Wholesalers [424990]	USD	Money	0.14	US EPA EEIO Commodities	2025	United States of America
Other electronic component manufacturing [33441A]: Electronic capacitors, resistors, coils, transformers, connectors and other components (except semiconductors and printed circuit assemblies)	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America
Other Miscellaneous Durable Goods Merchant Wholesalers [423990]	USD	Money	0.1	US EPA EEIO Commodities	2025	United States of America
Storage battery manufacturing [335911]: Storage batteries	USD	Money	0.34	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Support activities for printing [323120]: Printing support	USD	Money	0.31	US EPA EEIO Commodities	2025	United States of America
Household refrigerator and home freezer manufacturing [335222]: Home refrigerators and freezers	USD	Money	0.27	US EPA EEIO Commodities	2025	United States of America
Printing Machinery and Equipment Manufacturing [333244]	USD	Money	0.18	US EPA EEIO Commodities	2025	United States of America
All Other Miscellaneous General Purpose Machinery Manufacturing [333999]	USD	Money	0.25	US EPA EEIO Commodities	2025	United States of America
Refuse_ Waste Product Waste : Commercial and industrial waste [Combustion]	t	Weight	4.69	BEIS	2025	Great Britain
Diesel WTT- Cars (by size) : Average car	km	Distance	0.04	BEIS	2025	Great Britain
n.a. WTT- Rail : National rail	Pax.km	Passenger over Distance	0.01	BEIS	2025	Great Britain
Fuel : CNG [Road Transportation]	litre	Volume	1.07	GLEC	2025	Asia
Petrol WTT- Cars (by size) : Average car	km	Distance	0.05	BEIS	2025	Great Britain
Short-haul Air Travel to/from UK for the Average passenger With RF	Pax.km	Passenger over Distance	0.02	BEIS	2025	Great Britian
n.a. WTT- Taxis : Regular taxi	km	Distance	0.05	BEIS	2025	Great Britain
Diesel Cars (by size) : Average car	km	Distance	0.17	BEIS	2025	Great Britain

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Unknown National rail Rail	Pax.km	Passenger over Distance	0.04	BEIS	2025	Great Britain
Fuel : CNG [Road Transportation]	kg	Weight	2.86	GLEC	2025	Asia
Petrol Cars (by size) : Average car	km	Distance	0.16	BEIS	2025	Great Britain
Short-haul Air Travel to/from UK for the Average passenger With RF	Pax.km	Passenger over Distance	0.13	BEIS	2025	Great Britian
Unknown Regular taxi Taxis	km	Distance	0.21	BEIS	2025	Great Britain
Diesel WTT- Cars (by size) : Medium car	km	Distance	0.04	BEIS	2025	Great Britain
Petrol WTT- Cars (by size) : Medium car	km	Distance	0.05	BEIS	2025	Great Britain
n.a. WTT- Taxis : Black cab	Pax.km	Passenger over Distance	0.05	BEIS	2025	Great Britain
Unknown Regular taxi Taxis	Pax.km	Passenger over Distance	0.15	BEIS	2025	Great Britain
Petrol Cars (by size) : Medium car	km	Distance	0.17	BEIS	2025	Great Britain
Diesel Cars (by size) : Medium car	km	Distance	0.17	BEIS	2025	Great Britain
Printing ink manufacturing [325910]: Ink and ink cartridges	USD	Money	0.73	US EPA EEIO Commodities	2025	United States of America
All Other Miscellaneous Manufacturing [339999]	USD	Money	0.18	US EPA EEIO Commodities	2025	United States of America
Stationery product manufacturing [322230]: Stationery	USD	Money	0.49	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Other petroleum and coal products manufacturing [324190]: Other petroleum and coal products	USD	Money	0.97	US EPA EEIO Commodities	2025	United States of America
Power-driven handtool manufacturing [333991]: Power tools	USD	Money	0.22	US EPA EEIO Commodities	2025	United States of America
Valve and fittings other than plumbing [33291A]: Valve and fittings (except for plumbing)	USD	Money	0.27	US EPA EEIO Commodities	2025	United States of America
Other general purpose machinery manufacturing [33399A]: Welding and Soldering Equipment, Scales and Balances, and other general purpose machinery	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Surgical appliance and supplies manufacturing [339113]: Surgical appliance and supplies	USD	Money	0.21	US EPA EEIO Commodities	2025	United States of America
Rubber and plastics hoses and belting manufacturing [326220]: Rubber and plastic belts and hoses	USD	Money	0.37	US EPA EEIO Commodities	2025	United States of America
Industrial mold manufacturing [333511]: Industrial molds	USD	Money	0.37	US EPA EEIO Commodities	2025	United States of America
Other Motor Vehicle Parts Manufacturing [336390]: Other vehicle parts	USD	Money	0.39	US EPA EEIO Commodities	2025	United States of America
Abrasive product manufacturing [327910]: Abrasive products	USD	Money	0.3	US EPA EEIO Commodities	2025	United States of America
Plastics bottle manufacturing [326160]: Plastic bottles	USD	Money	0.87	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing [326120]: Plastic pipe, fittings, and sausage casings	USD	Money	0.68	US EPA EEIO Commodities	2025	United States of America
Packaging machinery manufacturing [333993]: Packaging machinery	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America
Pesticide and other agricultural chemical manufacturing [325320]: Pesticides	USD	Money	0.55	US EPA EEIO Commodities	2025	United States of America
All other chemical product and preparation manufacturing [3259A0]: Chemicals (except basic chemicals, agrichemicals, polymers, paints, pharmaceuticals,soaps, cleaning compounds)	USD	Money	0.55	US EPA EEIO Commodities	2025	United States of America
Lawn and garden equipment manufacturing [333112]: Lawn and garden equipment	USD	Money	0.25	US EPA EEIO Commodities	2025	United States of America
Iron and steel mills and ferroalloy manufacturing [331110]: Primary iron, steel, and ferroalloy products	USD	Money	1.08	US EPA EEIO Commodities	2025	United States of America
Insurance carriers, except direct life [5241XX]: Insurance carriers, except direct life	USD	Money	0.04	US EPA EEIO Commodities	2025	United States of America
Industrial process variable instruments manufacturing [334513]: Industrial process variable instruments	USD	Money	0.12	US EPA EEIO Commodities	2025	United States of America
Fluid power process machinery [33399B]: Hydraulic pumps, motors, cylinders and actuators	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Electric lamp bulb and part manufacturing [335110]: Light bulbs	USD	Money	0.36	US EPA EEIO Commodities	2025	United States of America
Machine shops [332710]: Machine shops	USD	Money	0.32	US EPA EEIO Commodities	2025	United States of America
Analytical laboratory instrument manufacturing [334516]: Analytical laboratory instruments	USD	Money	0.09	US EPA EEIO Commodities	2025	United States of America
Ferrous metal foundries [331510]: Cast iron and steel	USD	Money	0.47	US EPA EEIO Commodities	2025	United States of America
Truck transportation [484000]: Truck transport	USD	Money	1.33	US EPA EEIO Commodities	2025	United States of America
Commercial and industrial machinery and equipment rental and leasing [532400]: Commercial equipment rental	USD	Money	0.15	US EPA EEIO Commodities	2025	United States of America
Limited-service restaurants [722211]: Limited-service restaurants	USD	Money	0.34	US EPA EEIO Commodities	2025	United States of America
Transit and ground passenger transportation [485000]: Passenger ground transport	USD	Money	0.53	US EPA EEIO Commodities	2025	United States of America
Couriers and messengers [492000]: Couriers and messengers	USD	Money	0.49	US EPA EEIO Commodities	2025	United States of America
Computer systems design services [541512]: Computer systems design	USD	Money	0.07	US EPA EEIO Commodities	2025	United States of America
Wired telecommunications carriers [517110]: Telecommunications	USD	Money	0.09	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Mechanical power transmission equipment manufacturing [333613]: Mechanical power transmission equipment	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Relay and industrial control manufacturing [335314]: Relay and industrial controls	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America
Software publishers [511200]: Software	USD	Money	0.09	US EPA EEIO Commodities	2025	United States of America
Office furniture and custom architectural woodwork and millwork manufacturing [33721A]: Office furniture and custom architectural woodwork and millwork	USD	Money	0.36	US EPA EEIO Commodities	2025	United States of America
Office and commercial structures [2332A0]: Commercial structures, including farm structures	USD	Money	0.24	US EPA EEIO Commodities	2025	United States of America
Manufacturing structures [233230]: Manufacturing buildings	USD	Money	0.32	US EPA EEIO Commodities	2025	United States of America
Showcase, partition, shelving, and locker manufacturing [337215]: Shelving and lockers	USD	Money	0.41	US EPA EEIO Commodities	2025	United States of America
Plastic Waste : Plastics: average plastics [Open-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Metal Waste : Metal: steel cans [Closed-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Metal Waste : Metal: steel cans [Open-loop]	t	Weight	4.69	BEIS	2025	Great Britain
Waste WA_US_EPA_2024_0013 : [Corrugated Containers]	t	Weight	121.25	US EPA	2024	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
n.a. WTT- Taxis : Regular taxi	Pax.km	Passenger over Distance	0.04	BEIS	2025	Great Britain
Diesel WTT- Cars (by size) : Large car	km	Distance	0.05	BEIS	2025	Great Britain
Diesel Cars (by size) : Large car	km	Distance	0.21	BEIS	2025	Great Britain
Dairy cattle and milk production [112120]: Dairies	USD	Money	3.56	US EPA EEIO Commodities	2025	United States of America
Services to buildings and dwellings [561700]: Buildings and dwellings services	USD	Money	0.17	US EPA EEIO Commodities	2025	United States of America
Legal services [541100]: Legal services	USD	Money	0.06	US EPA EEIO Commodities	2025	United States of America
Household appliances and electrical and electronic goods [423600]: Household appliances and electrical and electronic goods	USD	Money	0.17	US EPA EEIO Commodities	2025	United States of America
Optical instrument and lens manufacturing [333314]: Optical instruments and lenses	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America
Scenic and sightseeing transportation and support activities for transportation [48A000]: Scenic and sightseeing transportation and support activities for transportation	USD	Money	0.26	US EPA EEIO Commodities	2025	United States of America
Fertilizer manufacturing [325310]: Fertilizers	USD	Money	2.32	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Greenhouse, nursery, and floriculture production [111400]: Greenhouse crops, mushrooms, nurseries, and flowers	USD	Money	1.04	US EPA EEIO Commodities	2025	United States of America
Other communications equipment manufacturing [334290]: Communications equipment	USD	Money	0.15	US EPA EEIO Commodities	2025	United States of America
Computer storage device manufacturing [334112]: Computer storage device readers	USD	Money	0.17	US EPA EEIO Commodities	2025	United States of America
Nonferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying [331490]: Other secondary nonferrous metal products	USD	Money	0.67	US EPA EEIO Commodities	2025	United States of America
Waste management and remediation services [562000]: Waste management and remediation	USD	Money	1.43	US EPA EEIO Commodities	2025	United States of America
Clay product and refractory manufacturing [327100]: Clay and ceramic products	USD	Money	0.47	US EPA EEIO Commodities	2025	United States of America
Hardware manufacturing [332500]: Metal hinges, keys, lock, and other hardware	USD	Money	0.28	US EPA EEIO Commodities	2025	United States of America
Elevator and Moving Stairway Manufacturing [333921]	USD	Money	0.23	US EPA EEIO Commodities	2024	United States of America
Temporary Shelters [624221]	USD	Money	0.21	US EPA EEIO Commodities	2025	United States of America
Broadcast and wireless communications equipment [334220]: Wireless communications	USD	Money	0.2	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Audio and video equipment manufacturing [334300]: Audio and video equipment	USD	Money	0.17	US EPA EEIO Commodities	2025	United States of America
Fuel : Oil products [Other petroleum products]	t	Weight	2964.31	IPCC	2016	Global
Diesel Cars (by size) : Small car	km	Distance	0.14	BEIS	2025	Great Britain
Petrol Motorbike : Large	km	Distance	0.13	BEIS	2025	Great Britain
Domestic Air Travel to/from UK for the Average passenger With RF	Pax.km	Passenger over Distance	0.23	BEIS	2025	Great Britian
Diesel WTT- Cars (by size) : Small car	km	Distance	0.03	BEIS	2025	Great Britain
Domestic Air Travel to/from UK for the Average passenger With RF	Pax.km	Passenger over Distance	0.03	BEIS	2025	Great Britian
Petrol WTT- Motorbike : Large	km	Distance	0.03	BEIS	2025	Great Britain
CNG WTT- Cars (by size) : Average car	km	Distance	0.04	BEIS	2025	Great Britain
CNG Cars (by size) : Average car	km	Distance	0.17	BEIS	2025	Great Britain
Alumina refining and primary aluminum production [331313]: Primary aluminum	USD	Money	1.31	US EPA EEIO Commodities	2025	United States of America
Electrical Contractors and Other Wiring Installation Contractors [238210]	USD	Money	0.21	US EPA EEIO Commodities	2025	United States of America
Paint and Coating Manufacturing [325510]	USD	Money	0.29	US EPA EEIO Commodities	2025	United States of America
Other Industrial Machinery Manufacturing [333249]	USD	Money	0.18	US EPA EEIO Commodities	2025	United States of America

EF Name	EF Unit	Unit Type	Value (kg CO_2e / Unit)	Source	Year	Region
Fuel : Processed fuel oils [na]	t	Weight	1123.5	BEIS	2025	Great Britain

22. Recalculation Policy for GHG Emissions

22.1. Introduction and Purpose

This Recalculation Policy outlines our approach to maintaining the integrity, accuracy, and comparability of our GHG emissions data over time. It aligns with international standards such as the GHG Protocol Corporate Accounting and Reporting Standard (developed by the World Resources Institute and World Business Council for Sustainable Development), ISO 14064, and frameworks like the Science Based Targets initiative (SBTi).

The purpose of this policy is to:

- Ensure consistent reporting of GHG emissions by recalculating base year and historical emissions when significant changes occur.
- Promote transparency and accountability in our ESG reporting.
- Support compliance with regulatory requirements (e.g., EU Corporate Sustainability Reporting Directive, SEC climate disclosure rules) and voluntary commitments (e.g., Net Zero pledges).
- Enable informed decision-making for our climate action and risk management.

This policy applies to all Scope 1, 2, and 3 GHG emissions as defined by the GHG Protocol.

22.2. Scope and Applicability

- **Emissions Covered**: All direct (Scope 1), indirect energy-related (Scope 2), and value chain (Scope 3) emissions, including CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and NF_3.
- **Organizational Boundaries**: Applies to our entire organization, including subsidiaries, joint ventures, and controlled entities, using our chosen consolidation approach (e.g., operational control, financial control, or equity share).
- **Time Frame**: Covers our base year (e.g., the first year of emissions inventory) and all subsequent reporting periods.
- **Exclusions**: Minor or immaterial changes below defined thresholds (see Section 4) may not trigger recalculation, but will be documented.

22.3. Triggers for Recalculation

We recalculate emissions when changes could materially affect the accuracy or comparability of our GHG data. The following triggers are evaluated annually or upon occurrence, based on best practices from the GHG Protocol:

Trigger Category	Description	Examples
Structural Changes	Alterations in our organizational boundaries or operations that impact emissions ownership or control.	- Mergers, acquisitions, or divestitures. - Outsourcing or insourcing of activities (e.g., shifting manufacturing to a third party). - Changes in joint venture structures.
Methodological Changes	Updates to calculation methods, emission factors, or global warming potentials (GWPs) that improve accuracy.	- Adoption of new IPCC GWPs (e.g., switching from AR4 to AR5 or AR6). - Shift from location-based to market-based Scope 2 accounting. - Updated emission factors from databases like EPA eGRID or DEFRA.
Data Improvements or Errors	Discovery of inaccuracies in historical data or enhancements in data quality.	- Correction of significant errors (e.g., misreported fuel consumption). - Availability of more precise data (e.g., switching from estimated to metered energy use). - Changes in activity data sources (e.g., supplier-specific emissions).
Regulatory or External Requirements	Mandates from external bodies requiring restatements.	- New laws or standards (e.g., alignment with SBTi criteria). - Stakeholder requests for restated data in sustainability reports.

Recalculations are not required for organic growth/decline (e.g., increased production without structural changes) unless they involve methodological shifts.

22.4. Significance Thresholds

To avoid unnecessary recalculations, we apply materiality thresholds tailored to our organization's size and sector:

- **Quantitative Threshold**: A change is significant if it impacts total emissions (Scopes 1+2+3 combined) by ±5% in the base year or any historical year. For individual scopes, we use ±10%.
- **Qualitative Threshold**: Even if below quantitative limits, we recalculate if the change could mislead stakeholders (e.g., affects key performance indicators like emissions intensity or progress toward targets).
- **Cumulative Assessment**: We evaluate the combined effect of multiple small changes over time; if the cumulative impact exceeds thresholds, it triggers recalculation.
- **Review Process**: Our Sustainability Committee (or equivalent) reviews borderline cases annually.

If a change falls below thresholds, we document it in the emissions inventory notes without recalculation.

22.5. Recalculation Procedure

We follow these steps for systematic and auditable recalculations:

1. **Identification**: We monitor for triggers through regular audits, management reviews, and change management processes.
2. **Assessment**: We quantify the impact using pre- and post-change calculations, applying consistent methodologies (e.g., same GWPs) for comparability.
3. **Recalculation**:
    - We apply the new methodology or adjusted boundaries retroactively to the base year and all intervening years.
    - We maintain dual reporting for one period: original vs. recalculated data, with explanations.
    - We use tools like GHG Protocol spreadsheets or software (e.g., ClimeUp GHG Carbon Footprint calculators) for computations.
4. **Verification**: We engage third-party verifiers (e.g., ISO 14064-certified auditors) for material recalculations to ensure accuracy.
5. **Implementation**: We update all relevant reports, dashboards, and targets (e.g., adjust SBTi commitments if base year changes).
6. **Timeline**: We complete recalculations within 6 months of trigger identification, or before the next reporting cycle.

22.6. Documentation and Reporting

- **Records** : We maintain a Recalculation Log including:
    - Date and description of trigger.
    - Impact assessment (pre/post emissions data).
    - Methodology details (e.g., emission factors used).
    - Approval signatures.
- **Transparency**: We disclose recalculations in our sustainability reports (e.g., CDP, GRI, TCFD-aligned disclosures) with:

    - Restated historical data in tables or graphs.
    - Explanations of changes and their effects.
    - No “cherry-picking”—we recalculate all affected years consistently.
- **Retention**: We keep records for at least 7 years or as required by regulations.

22.7. Governance and Responsibilities

- **Oversight**: Our ESG/Sustainability Committee approves all recalculations.
- Roles:
    - Sustainability Manager: Identifies triggers and performs initial assessments.
    - Data Owners (e.g., Operations, Finance): Provide accurate inputs.
    - Executive Leadership: Ensures policy integration into corporate strategy.
- **Training**: We provide annual training for relevant staff on GHG accounting and this policy.
- **Review**: We update this policy every 2-3 years or upon major standard changes (e.g., new IPCC guidelines).

22.8. Implementation

We integrate this policy into our ESG management system and use digital tools (e.g., ClimeUp Sustainability Platform) for automated tracking. We benchmark against peers (e.g., via World Benchmarking Alliance) to refine thresholds and consider scenario analysis for future changes (e.g., under IPCC SSPs).

For more information about our corporate sustainability initiatives, please contact our Sustainability Team at

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We welcome your inquiries and look forward to engaging with you

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