



Carbon Footprint Appraisal
for
Capital Coated Steel Limited

Assessment Period:
1st April 2022 – 31st March 2023

Executive Summary

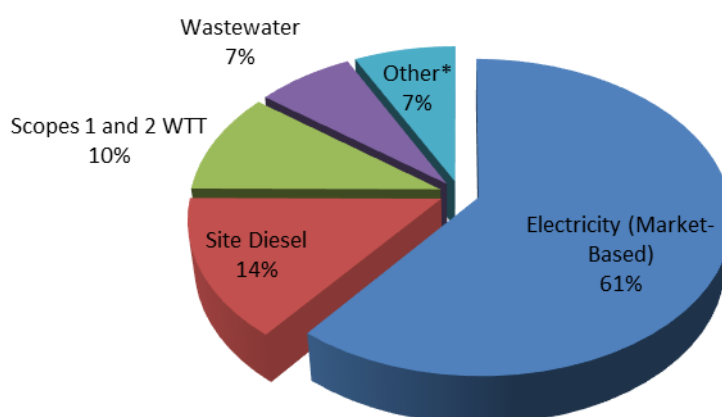
Current Performance

- Capital Coated Steel's total market-based emissions are 319.56 tCO₂e (with a location-based emissions of 214.52 tCO₂e).
- The most significant market-based emission source is site electricity accounting for 61% of Capital Coated Steel's carbon footprint.
- The estimated market-based error margin is a significant aspect (+/- 16.13 tCO₂e) and should be offset and be a key focus in future years.

Recommendations

- Switch to a renewable energy tariff to reduce the emissions associated with electricity use.
- Investigate opportunities to reduce site energy consumption across all sites through implementing regular energy monitoring and conducting an energy audit.
- Continue transitioning to electric vehicles (EV).
- Expand the scope of the assessment to include all relevant scope 3 categories.
- Offset the GHG emissions created within this data period to become carbon neutral.
- **Carry out a target setting and supply chain screening to facilitate your reduction strategy and increase the scope of your assessment.**

Market-based emissions breakdown (incl. WTT)



*Other= Transmission & Distribution (Market-based), Waste, Home-working, Company vehicles, Computing, Flights, Water.

| Year/Element | Location-based | Market-based |
|---|----------------|---------------|
| Total number of employees | 80 | |
| Turnover in £ million | 65.8 | |
| Annual output of steel (tonnes) | 40,584 | |
| Tonnes of CO₂e | 214.52 | 319.56 |
| Tonnes of CO₂e per employee | 2.68 | 3.99 |
| Tonnes of CO₂e per £ million turnover | 3.26 | 4.86 |
| Kg of CO₂e per tonne of product | 5.29 | 7.87 |

Table of Contents

| | |
|--|----|
| Executive Summary..... | I |
| 1. Introduction..... | 1 |
| 2. Calculation Scope and Accuracy..... | 2 |
| 3. Carbon Footprint Results..... | 5 |
| 4. Benchmarking..... | 8 |
| 5. Conclusion..... | 9 |
| 6. Recommendations..... | 10 |

Quality Control

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Calculations completed by: Stephen Laurent
Calculations reviewed by: Jenny Webb

Report produced by: Stephen Laurent
Report reviewed by: Jenny Webb

Director approval: Dr. Wendy Buckley

1. Introduction

1.1. Company Overview

Capital Coated Steel Limited are an independent pre-finished metals processor based in south Wales. The company has 4 decoiling lines, 4 roll-formers, 2 wide coil slitters and 1 narrow coil slitter alongside a host of supporting processes. They work across multiple sectors, providing help and advice to their customers on product, managing supply chains and adding value.

Below is a brief company overview:

- 80 employees
- 1 site, comprising a large production warehouse and a small technician's workshop.
- 9 company cars

1.2. Data supplied for the Carbon Footprint Appraisal

A summary of the data supplied by Capital Coated Steel for the appraisal can be provided on request.

1.3. Methodology for the Carbon Footprint Appraisal

The methodology document can be downloaded using this link,

https://www.carbonfootprint.com/docs/carbon_footprint_appraisal_-_methodology_document.pdf

1.4. Abbreviations

| | |
|-------------------|--|
| CO ₂ | Carbon Dioxide |
| CO ₂ e | Carbon Dioxide Equivalent |
| Defra | Department for Environment, Food and Rural Affairs |
| EV | Electric Vehicle |
| GHG | Greenhouse Gas |
| km | Kilometres |
| kWh | Kilowatt Hours |
| T&D | Transmission & Distribution |
| WTT | Well-To-Tank |

2. Calculation Scope and Accuracy

2.1. Scope of this work

Carbon Footprint has assessed the GHG emissions from 1st April 2022 to 31st March 2023 resulting from the energy consumption at Capital Coated Steel’s facilities and its business transport activities.

This report will set the base year for all further reporting emissions to be compared against.

2.2. Organisational & reporting boundaries

Figure 1 shows the full boundaries of the *Greenhouse Gas Protocol Corporate and Value Chain Standards*. The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has operational control. This assessment covers the reporting boundaries shown in Table 1, in line with the Greenhouse Gas Protocol Corporate Standard.

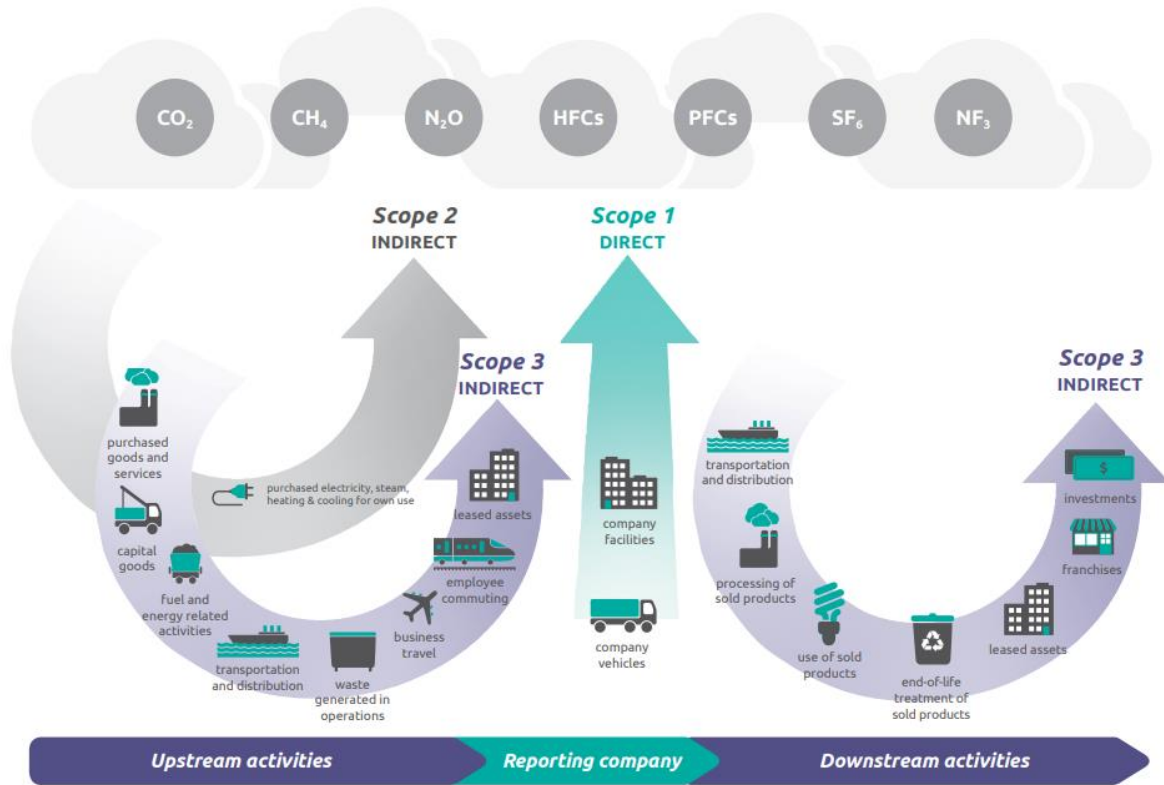


Figure 1: Overview of emissions scopes (GHG Protocol - Scope 3 Calculation Guidance v1.0 - 2013)



Table 1: Capital Coated Steel’s GHG Assessment boundary based on the Greenhouse Gas Protocol Corporate Standard
(All green rows have been included in this assessment; all grey rows are not applicable; orange rows have been excluded)

| Scope | Activity | Calculation Type | Completion Status | Justification |
|-------|---|------------------|-------------------|---|
| 1 | Electricity, heat or steam generated on-site | Activity Data | Complete | |
| | On-site fuel use | Activity Data | Complete | |
| | Company owned vehicles | Activity Data | Complete | |
| | Fugitive emissions (incl. Refrigerant gases and AC) | Activity Data | Complete | |
| 2 | On-site Consumption of purchased electricity, heat steam and cooling | Activity Data | Complete | |
| 3 | 1. Purchased goods and services | Activity Data | Partial | |
| | 2. Capital goods | | Excluded | Relevant and intending to include in future assessments |
| | 3. Fuel- and energy related activities (not included in scope 1 or scope 2) | Activity Data | Complete | |
| | 4. Upstream transportation and distribution | | Excluded | Relevant and intending to include in future assessments |
| | 5. Waste generated in operation | Activity Data | Complete | |
| | 6. Business travel (not included in scope 1 or scope 2) | | Excluded | Relevant and intending to include in future assessments |
| | 7. Employee commuting | | Excluded | Relevant and intending to include in future assessments |
| | 8. Upstream leased assets | | Not relevant | |
| | 9. Downstream transportation and distribution | | Excluded | Immaterial or not technically/financially feasible |
| | 10. Processing of sold products | | Not relevant | |
| | 11. Use of sold products | | Not relevant | |
| | 12. End-of-life treatment of sold products | | Excluded | Relevant and intending to include in future assessments |
| | 13. Downstream leased assets | | Not relevant | |
| | 14. Franchises | | Not relevant | |
| | 15. Investments | | Not relevant | |



2.3. Calculation uncertainty assessment & materiality

The result of a carbon footprint calculation varies in accuracy depending on the data set provided. The more accurate the data supplied, the more accurate the final result. Materiality is determined by the percentage contribution of each element to the overall footprint.

Based on the accuracy of the data provided (Table 2), a simple uncertainty analysis has been used to estimate the potential error margin for the appraisal results.

Table 2: Assessment accuracy, materiality and simple error analysis

| Emission Source | Data source / comments | Materiality | Uncertainty | Market-based Error Margin (tCO ₂ e) |
|----------------------------|--|------------------|-------------|--|
| Electricity (Market-based) | Electricity usage spreadsheet provided, showing monthly totals for each building. A sample of bills were provided as evidence. | Very High (>40%) | 5% | 11.26 |
| Site Diesel | Invoices and purchase history sheet provided, showing volume of diesel purchased in litres. | Medium (5-20%) | 5% | 2.85 |
| Home-working | Home-working spreadsheet was sent out for staff to complete (16/80 responses, likely to be all the home-workers so no apportioning needed). | Very Low (<1%) | 50% | 1.35 |
| Waste | Data from internal records, showing monthly tonnes of waste produced by type. Supplier reports provided as evidence, showing tonnes of each type of waste provided. Municipal waste was calculated using the Defra factor for incineration, as there is no factor for recycling municipal waste. | Low (1-5%) | 5% | 0.37 |
| Wastewater | Data from water bills showing actual meter readings and volume of water returned to the sewer. | Medium (5-20%) | 1% | 0.23 |
| Company vehicles | All vehicle details including registration plates and total yearly mileage were provided. These were spot checked using the DVLA vehicle database. | Low (1-5%) | 1% | 0.03 |
| Computing | Data supplied from internal purchase records, with all items purchased during the assessment period. | Very Low (<1%) | 5% | 0.03 |
| Water | Data from water bills showing actual meter readings and volume of water returned to the sewer. | Very Low (<1%) | 1% | < 0.01 |
| Flights | Departure and destination airports, number of passengers, cabin class and return information provided. | Very Low (<1%) | 1% | < 0.01 |
| Total | | | 5% | +/- 16.13 |



3. Carbon Footprint Results

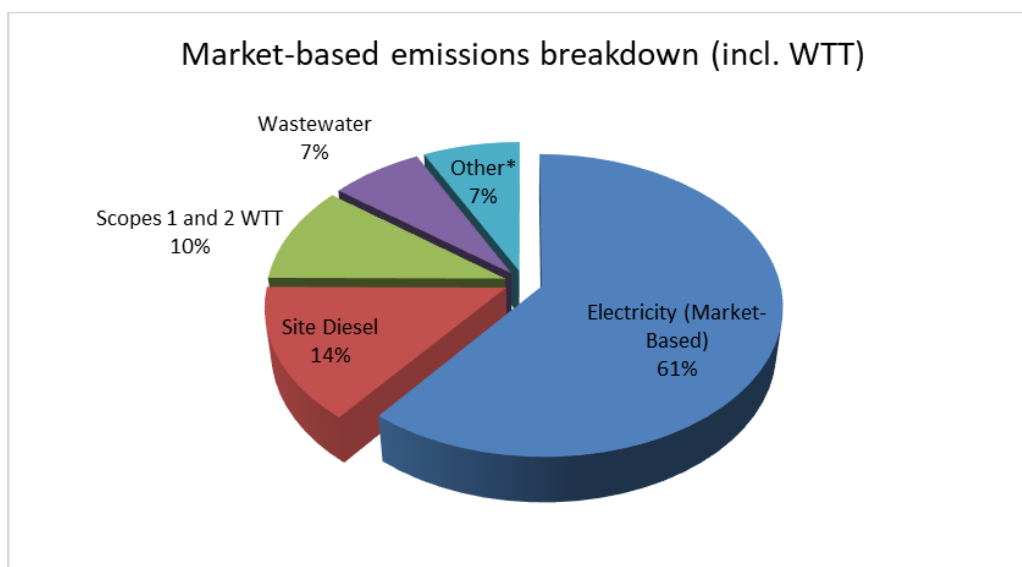
3.1. Summary of results

The total location-based carbon footprint for Capital Coated Steel for the period ending 31st March 2023 is 214.52 tonnes CO₂e, and the market-based total is 319.56 tonnes CO₂e.

Table 3: Results of Capital Coated Steel's carbon footprint assessment by scope and GHG Protocol emission categories

| Scope | Emission Source | Location-based (tCO ₂ e) | Market-based (tCO ₂ e) |
|------------|---|-------------------------------------|-----------------------------------|
| 1 | Site Diesel | 46.04 | 46.04 |
| | Company vehicles | 2.50 | 2.50 |
| 1 | Scope 1 Total | 48.54 | 48.54 |
| 2 | Electricity | 88.84 | 193.88 |
| 2 | Scope 2 Total | 88.84 | 193.88 |
| 3.1 | Water | 0.13 | 0.13 |
| 3.2 | Computing | 0.51 | 0.51 |
| 3.3 | Scopes 1 and 2 WTT | 33.19 | 33.19 |
| | Transmission & Distribution | 10.07 | 10.07 |
| 3.5 | Waste | 7.47 | 7.47 |
| | Wastewater | 22.71 | 22.71 |
| 3.6 | Flights | 0.36 | 0.36 |
| 3.7 | Home-working | 2.70 | 2.70 |
| 3 | Scope 3 Total | 135.58 | 135.58 |
| All | Tonnes of CO₂e | 214.52 | 319.56 |
| | Tonnes of CO₂e per employee | 2.68 | 3.99 |
| | Tonnes of CO₂e per £ million turnover | 3.26 | 4.86 |
| | Kg of CO₂e per tonne of product | 5.29 | 7.87 |

A full breakdown of emissions by source has been provided in Annex A.



*Other= Transmission & Distribution (Market-based), Waste, Home-working, Company vehicles, Computing, Flights, Water.

Figure 2: Percentage contribution of each element of Capital Coated Steel's market-based carbon footprint

3.2. Emissions from energy usage at site facilities

Capital Coated Steel are based at one site in South Wales, with two main buildings. The majority of full-time staff are based in the production warehouse, which accounts for the largest portion of energy usage emissions. The company are on a high carbon tariff, which is above the UK average, resulting in a higher market-based total compared to location-based for electricity emissions. The market-based emissions could be reduced to zero by switching to a fully renewable tariff. These emissions are broken down in Table 4.

Table 4: Market-based CO₂e emissions as a result of site energy consumption

| Emission source | No. of Staff | Market-based Electricity ¹ (tCO ₂ e) | Location-based Electricity ¹ (tCO ₂ e) | Site Diesel (tCO ₂ e) | Total Emissions % | Total Emissions per employee |
|-----------------|--------------|--|--|----------------------------------|-------------------|------------------------------|
| Main building | 76 | 175.48 | 80.41 | 46.04 | 91% | 2.31 |
| Small building | 4 | 18.40 | 8.43 | - | 9% | 4.60 |
| Total | 80 | 193.88 | 88.84 | 46.04 | 100% | 3.00 |

Emissions resulting from diesel used for forklift trucks on site account for 14% of the market-based total and 21% of the location-based total. This makes it the second largest contributor to Capital Coated Steel's emissions.

¹ Totals include emissions from Generation and Transmission & Distribution

3.3. Emissions from Well to Tank

Well-to-tank emissions relate to the upstream emissions of fuel and energy; accounting for extraction, processing, and transport of fuels/energy. **Capital Coated Steel can reduce these emissions by reducing fuel and energy usage.**

Table 5: Well-To-Tank CO₂e Emissions breakdown

| Emission Source | Market-based (tCO ₂ e) |
|-----------------------------|-----------------------------------|
| Electricity | 21.25 |
| Site Diesel | 10.98 |
| Transmission & Distribution | 1.94 |
| Company vehicles | 0.96 |
| Flights | 0.04 |
| Total | 35.17 |



4. Benchmarking

4.1. Base year emissions

A summary of the carbon footprint results can be seen in section 3.1. This will set the base year for all future reports to be compared against.

Carbon Footprint recommends that organisations use the base-year GHG inventory as a benchmark to measure against. When using the base-year GHG inventory as a benchmark, organisations can set realistic reduction targets and measure their progress year on year. This can also provide excellent marketing opportunities, where real figures can demonstrate your commitment towards helping fight climate change.

4.2. External benchmarking

Companies often find it useful to benchmark themselves against similar organisation in their sector. Carbon Footprint Ltd has an online tool you can use to find publicly available information on other organisations that have reported their emission.

The Carbon Benchmarking Tool is free to use and can be found online at:

https://www.carbonfootprint.com/carbon_benchmark.html

Many companies report Scope 1 & 2 emissions for comparison against others as elements included in Scope 3 can vary greatly. Table 5 summarises the emissions across these Scopes, along with metrics showing emissions per unit turnover and per employee, to help your benchmarking.

Table 5: Capital Coated Steel's benchmarked GHG emissions

| Year/Element | Location-based | Market-based |
|---|----------------|---------------|
| Total number of employees | 80 | |
| Turnover in £ million | 65.8 | |
| Annual product output (tonnes) | 40,584 | |
| Tonnes of CO ₂ e | 214.52 | 319.56 |
| Tonnes of CO ₂ e per employee | 2.68 | 3.99 |
| Tonnes of CO ₂ e per £ million turnover | 3.26 | 4.86 |
| Kg of CO ₂ e per tonne of product | 5.29 | 7.87 |
| Scope 1 & 2 Emissions | | |
| Tonnes of CO₂e | 137.39 | 242.42 |
| Tonnes of CO₂e per employee | 1.72 | 3.03 |
| Tonnes of CO₂e per £ million turnover | 2.09 | 3.68 |
| Kg of CO₂e per tonne of product | 3.39 | 5.97 |

5. Conclusion

Capital Coated Steel, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint.

By achieving this, Capital Coated Steel has qualified to use the Carbon Footprint Standard branding. This can be used on all marketing materials, including website and customer tender documents, to demonstrate your carbon management achievements.



6. Recommendations

6.1. Carbon & sustainability targets

6.1.1. Target setting

Capital Coated Steel should set targets based on per employee and/or per £M turnover, which will account for business growth. Many organisations are now setting targets based on the Science Based Target initiative. Typical targets cover mid-term and longer terms goals such as:

- A 50% reduction in emissions per £M turnover/employee by 2030.
- A 90% reduction in emissions per £M turnover/employee by 2045.

All targets set should be reviewed regularly and amended accordingly (i.e. target increased if it is met ahead of schedule). A clear roadmap for individual emissions sources should be in place. This will ensure the strategy for reducing CO₂e emissions and tracking toward a net zero target is appropriate for the business.

A hyperlink to Carbon Footprint Ltd's whitepaper on target setting can be found below:
https://www.carbonfootprint.com/docs/2021_12_cfp_practical_target_setting_-_white_paper_v10.pdf

6.1.2. Expand the Scope of the Assessment

We recommend that the scope of the assessment is expanded in future to include the aspects that are identified as excluded in Table 1.

The most material elements would likely be, upstream and downstream distribution, commuting and business travel, and purchased goods and services, due to the nature of your business, so we recommend you focus on capturing data for this ready for next year's appraisal.

6.1.3. Improving the accuracy of future carbon footprint assessments

The estimated overall error margin is 5% (+/- 16.03 tCO₂e).

To improve the accuracy of future assessments, we recommend the following:

- Keep logs of staff hours worked from home to ensure the inclusion of all data. Add a question to the survey asking if staff have a renewable energy tariff at home, so that market-based home-working can be calculated.

6.2. Reducing emissions

To reduce GHG emissions, we recommend the following:

- Switch to a renewable energy tariff to reduce emissions associated with electricity use. Many "green" electricity tariffs are now the same price as the traditional brown tariffs. Once you have done this you will be able to report your market-based emissions alongside your location based.
- Investigate opportunities to reduce site energy consumption. This could be done through conducting an onsite energy audit at your most energy intensive site. Carbon Footprint Ltd can complete site energy audit for you and provide recommendations for saving energy.
- Continue the transition from diesel to electric powered forklifts on-site. When the vehicles come to the end of their contracts, replace them with battery models to reduce diesel consumption.
- Integrate new technologies in bathrooms and water-intensive areas within your business premises. Prevent unnecessary usage and investigate greywater harvesting and other green water solutions to utilise rainwater and recycle wastewater wherever possible.
- Continue transitioning to electric vehicles (EV), to build on the carbon reductions you will already be benefiting from. Where charging points are not already present, install these to increase charging capacity but to also encourage employees to switch to EVs.
- Set up a scheme where employees can purchase electric vehicles, bicycles (e-bikes) and scooters through a salary sacrifice scheme.
- Expand the scope of the assessment to align with the GHG Protocol Corporate Value Chain Standard and include all relevant scope 3 categories.

6.3. Carbon offsetting

Carbon offsetting is a pragmatic way to compensate for the emissions that you cannot reduce, by funding an equivalent carbon dioxide saving elsewhere. We note that Science Based Targets supports this as what they call Beyond Value Chain Mitigation (BVCM) and that it provides an urgently needed way for companies to cut emissions outside of their value chains in line with societal net-zero (see link - [Net-Zero: Urgent Beyond Value Chain Mitigation Is Essential - Science Based Targets](#)).

We can provide both UK-based and international projects for you to support. The majority of projects focus on the development of renewable energy in developing countries, however there are others which have a greater focus on social benefits as well as environmental benefits. Further detail on the type and specific projects that we currently have in our portfolio can be provided on request or be found at: <http://www.carbonfootprint.com/carbonoffsetprojects.html>.

The cost of offsetting has reduced considerably over recent times. This could be readily funded via the internal carbon pricing system.

Example of Carbon Offsetting Projects:



Tree Planting in UK Schools



Avoided Deforestation in the Brazilian Amazon



Clean Water in Rwanda

Annex A

A full breakdown of Capital Coated Steel's emission sources is given below. This aligns with the GHG Protocol classification methodology and provides each associated emission source:

| Scope | GHG Protocol Emission Category | Emission Source | Location-based (tCO ₂ e) | Market-based (tCO ₂ e) |
|----------------------|---|-----------------------------|-------------------------------------|-----------------------------------|
| 1 | On-site fuel use | Site Diesel | 46.04 | 46.04 |
| | Company owned vehicles | Company vehicles | 2.50 | 2.50 |
| Scope 1 Total | | | 48.54 | 48.54 |
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