CARBON-ZERO

CARBON FOOTPRINT ASSESSMENT 2024

Prepared for: Ethypharm UK Limited

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1. Executive Summary

This carbon footprint assessment has been carried out on behalf of Ethypharm UK Limited (Ethypharm) which is part of the Ethypharm Group. This report focuses on Ethypharm UK only and performs carbon emissions analysis on their Scope 1, 2 & 3 emissions from their three UK facilities. All emissions sources within Scopes 1 & 2 have been assessed. Confirmation of the Scope 3 emissions sources included in this assessment is detailed in section 5 of this report.

Emissions have been determined using the UK government's BEIS emissions factor database. This assessment has been conducted and documented in alignment with the Greenhouse Gas Protocol's Corporate Standard, and the results reported as per scopes 1, 2 & 3. The greenhouse gases being measured in this report have been simplified to CO_2e (or CO_2 equivalent); CO_2e is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

The report concludes that in each functional category, in this case defined as the ongoing service delivery for Ethypharm over a 1-year period, between 1st January 2023 to 31st December 2024, the business emitted approximately 3,759 tonnes of carbon measured in T/CO_2e. Table one highlights the annual emissions by scope.

Ethypharm Annual Carbon Emissions- 2024		
Results	**Description**	**Carbon Emissions ($KgCO_2e$)**
Total Scope 1	Heating Fuels, Company Owned Vehicles, Refrigerants	1,349,428
Total Scope 2	Electricity	696,460
Total Scope 3	Material Use, Staff Travel, Shipping, Waste Treatment, Water	1,569,473
TOTAL EMISSIONS		**3,758,697**

Table 1– Ethypharm Annual Carbon Emissions- 2024

For future reporting purposes, this has been normalised to 32 Kg/CO_2e per £1000 of turnover, using the principles of emissions intensity. The graph below shows the emissions per source of the operational footprint, which does not account for medication production.

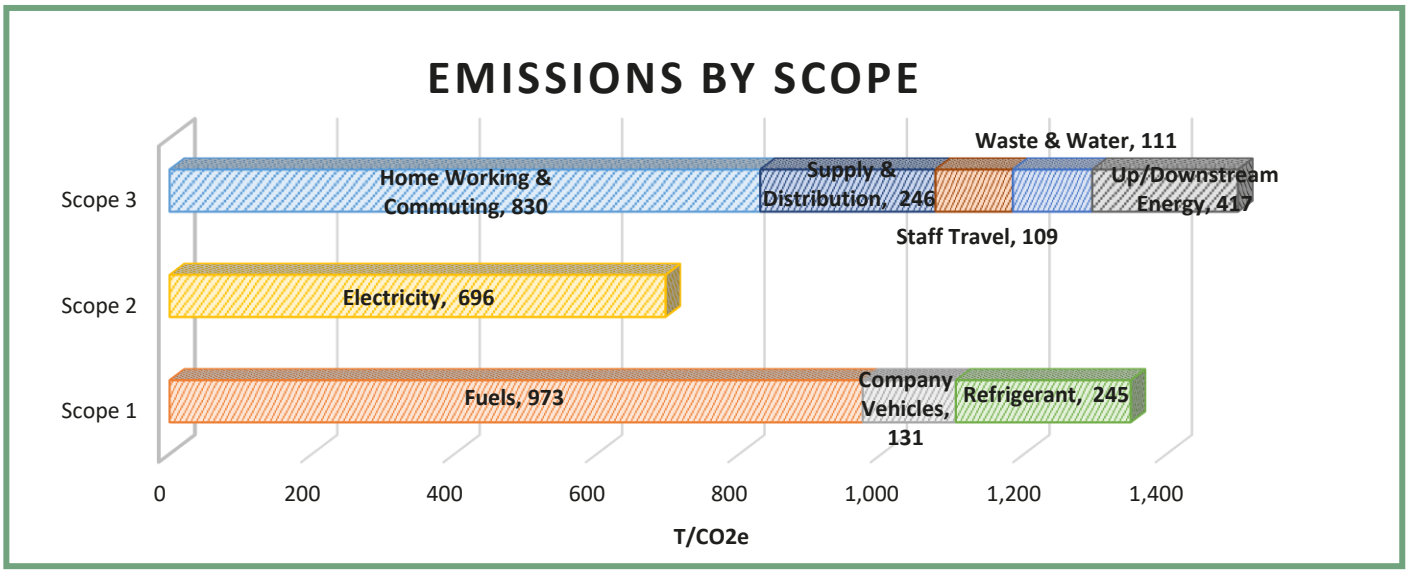


Figure 1–Carbon Emissions by Scope

2. Aims and Objectives

The following are the agreed aims and objectives of this carbon emissions assessment.

- Provide a complete and thorough annual carbon footprint of the Ethypharm business operations for the calendar year of 2024.
- Perform a full Carbon Footprint Assessment and report on all facility emissions.
- Assess the associated GHG emissions in Manufacturing, Shipping and Logistics required within the Supply Chain.
- Assess the associated GHG emissions for company travel and accommodation.
- Prepare a summary of the opportunities for improvement.

3. Introduction to Greenhouse Gases (GHGs)

Context

In response to the increased awareness of global warming, international efforts have continued to reduce greenhouse gas emissions through the:

- Rio Earth Summit, 1992
- Kyoto Protocol, 1997
- Copenhagen Accord, 2009

Most recently, the **Paris Climate Agreement** was signed which aims to bring all nations into a common cause to undertake more ambitious efforts to combat climate change and adapt to its effects.

Concern over climate change has stimulated interest in **estimating the total amount of greenhouse gasses (GHG)** produced during the different stages in **the life cycle of goods and services**. i.e. their production, processing, transportation, sale, use and disposal.

The outcome of these calculations is often referred to as **Product Carbon Footprints (PCFs)** where **'carbon footprint'** is the **total amount of GHGs produced** for a given activity and **'product'** is any **goods or services** that are marketed.

PCFs are thus distinct from GHG assessments performed at the level of projects, corporations, supply chains, municipalities, nations or individuals.

Product carbon footprinting is currently dominated by private standards and certification schemes operated by small for-profit and not-for-profit consultancies. Government support to PCF schemes and standards has been limited to the **PAS 2050 Standard**

4. Methodology

4.1 Relevant Standards

At an international level, carbon accounting standards are being developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD-WRI), through its Greenhouse Gas (GHG) Protocol; and by the International Office for Standardisation[1]. The GHG protocol has developed a series of standards for business, organisations, cities and countries. The GHG Protocol Corporate Accounting and Reporting Standard has been followed for the Ethypharm 2024 carbon emissions assessment with emissions being recorded and reported against the three scopes. The GHG Protocol Corporate Standard classifies a company's GHG emissions as follows:

- Scope 1 emissions are direct emissions from owned or controlled sources.
- Scope 2 emissions are indirect emissions from the generation of purchased energy.
- Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

In calculating the organisations carbon footprint reference has also been made to the International Organisation for Standardisation (ISO) standard ISO 14064 which is part of their 14001 environmental management series. ISO 14064 is designed to help governments and businesses quantify, monitor, report and verify their emissions and the standard is split into the following three parts:

Part 1- Specification with Guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals.
Part 2- Specification with Guidance at the project level for quantification, monitoring and reporting of greenhouse gas emissions reductions or removal enhancements.
Part 3 - Specification with Guidance for the verification and validation of greenhouse gas statements

In addition to ISO 14064, BSI have established ISO 14068-1, a standard designed to enable companies to become carbon neutral through the assessment, reduction and offset of emissions, subject to the required documentation and verification. While this assessment has been conducted in accordance with this standard there is no obligation for Ethypharm to offset their emissions and achieve a carbon neutral status.

4.2 Data Gathering Process

All data was gathered by Ethypharm and sent to Carbon-Zero in either word or excel format. Carbon-Zero were not given direct access to Ethypharm's system or raw files therefore cannot comment on how the raw data was tracked or retrieved.

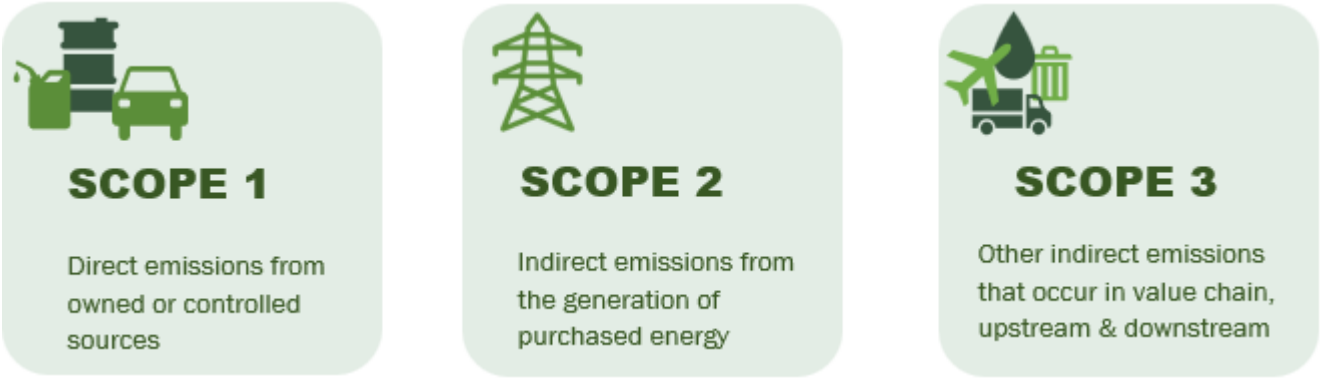
Appendix A outlines the project deliverables, actions required and the data request issued by Carbon-Zero. This includes the activities and raw information required to complete this assessment and any future carbon assessments.

Ethypharm were recently subject to a cyber-attack and as a result have lost a substantial number of records and data. As a result some of the data required to complete this assessment was not retrievable. Where data was not recoverable the data from the 2022 annual report has been used. Section 6 of this report details all assumptions used to account for incomplete data records.

[1] Simon Bolwig, Peter Gibbon (2009) Counting Carbon in the Marketplace. Global Forum on Trade: Trade and Climate Change, OECD.

4.3 Reporting Process

The results of this assessment have been documented in alignment with the UK GHG Protocol and reported as per scopes 1, 2 & 3, as highlighted in section 4.1. Examples of emissions sources as per these scopes are illustrated below.



Once the scope 1, 2 and 3 raw data was processed into a usable format the most suitable emissions factor is selected from either the BEIS database or BSRIA (ICE) guide. Any factors used from external sources have been referenced.

	Assessment takes place in **2024**
	UK Government GHG and BEIS Conversion Factors for **2024** applied
CO2e GHG	All Greenhouse Gases will be converted to the GWP (Global Warming Potential) of CO_2 and will be reported as CO_2 equivalent (CO_2e)

5. Scope of Assessment

The scope of this assessment extends to the carbon emissions associated with Ethypharm's annual business operations for 2024. The reporting methodology has been aligned to the GHG Protocol Corporate and Value Chain Standards. The inclusion of scope had been aligned to the mandatory reporting requirements identified by NHS England. The figure below details the mandatory and recommended emissions sources as outlined in these standards, along with confirmation of their inclusion.

GHG Assessment Emissions Sources					Required or Optional (NHS)	Included in Scope
Category	Emissions Source Category (Aligned to GHG Protocol Corporate and Value Chain Standards)					
Scope 1	Direct emissions arising from owned, leased or directly controlled stationary sources that use fossil fuels and/or emit fugitive emissions.				**Required**	✓
	Direct emissions from owned, leased or directly controlled mobile sources.				**Required**	✓
Scope 2	Location-based emissions from the generation of purchased electricity, heat, steam or cooling.				**Required**	✓
	Market-based emissions from the generation of purchased electricity, heat, steam or cooling.				**Required**	✓
Scope 3– Upstream	1	Purchased goods and services			Optional	×
	2	Capital goods			Optional	×
	3	Fuel and energy related activities (not included in Scope 1 or 2)	3a	Upstream emissions of purchased fuels	**Required**	✓
			3b	Upstream emissions of purchased electricity	**Required**	✓
			3c	Transmission and distribution (T&D) losses	**Required**	✓
	4	Upstream transportation & distribution.	Outbound courier deliveries of packages		**Required**	✓
			Third-party transportation and storage of inbound production related goods		**Required**	✓
	5	Waste generated	Waste treatment		**Required**	✓
	6	Business travel	All transportation by air, public transport, rented/leased vehicles and taxi.		**Required**	✓
			Emissions arising from hotel accommodation associated with business travel.		**Required**	✓
	7	Employee commuting	Employee transport between home and places of work.		**Required**	✓
			Emissions from employee home and remote working.		**Required**	✓
	8	Upstream leased Assets	Operation of assets leased by the reporting company in the reporting year and not included in scope 1 and 2.		Optional	×
Scope 3- Downstream	9	Downstream transportation and distribution			**Required**	✓
	10	Processing of sold products			Optional	×
	11	Use of sold products			Optional	×
	12	End of life Treatment			Optional	×
	13	Downstream leased Assets			Optional	×
	14	Franchises			Optional	×
	15	Investments			Optional	×

Table 2– Scope of Carbon Emissions Assessment

6. Assumptions

To calculate the Ethypharm annual footprint, the following assumptions were adopted:

Shipping Assumptions

- Road freight was assumed to be carried out by BEIS deemed 'articulated HGVs > 33t'.
- Delivery emissions calculations have been made based on fully loaded vehicles and the emissions have been assigned depending on the percentage load share. The delivery distances have been adjusted to represent the percentage load for the calculations.
- As the weight of individual shipments was not recorded, an average shipment weight has been calculated using the total weight of materials consumed and the total number of orders placed within the reporting period. This average weight per order was then applied to all shipments to calculate supply chain emissions.
- Upstream shipping records were not recoverable due to a cyber-attack therefore these have been based on 2022 data. As Ethypharm's turnover has doubled since 2022 the inbound shipping data has been adjusted with a multiplier of 2.0 to try and account for the company growth.
- Records detailing the movement of items internally were also not recoverable therefore these have also been estimated using 2022 data, with a multiplier of 2.0 to account for growth.

Staff Travel Assumptions

- Staff travel data was not available as financial records were not recoverable.
- Staff numbers remained consistent with the 2022 assessment therefore the raw data for 2022 has been applied with no multiplier.
- See 2022 report for any assumptions used in calculating staff travel emissions.
- Emissions from commuting have been based on the following daily travel distances for each location: Romford- 20 miles, Jupiter House-30 miles, Brentwood 30 miles.
- Energy consumption from EV use was calculated using an average rate of £0.25 per mile.[2]

Utility Assumptions

- 22% of all electricity purchased is believed to be from a renewable source, which has no associated emissions. To account for this the electricity consumption at each site has been reduced by 22%.
- All residual waste generated was assumed to be disposed of via incineration.
- Refrigerant top up data was also not recoverable. As the buildings' use remains similar to the 2022 assessment, the raw data for 2022 has been applied with no multiplier.

[2] Which? (2025) How much does it cost to charge an electric car, available How much does it cost to charge an electric car? - Which?

7. Ethypharm Carbon Footprint Assessment Scopes 1 & 2

In accordance with the GHG protocol the reporting of Scope 1 and 2 emissions is mandatory. As outlined in section 4 these are the direct emissions from owned or controlled sources (Scope 1) and indirect emissions from the purchase of energy (Scope 2). The table below summaries these emissions for 2024.

Scope ID	Classification	Category	Unit	Qty	Conversion Factor (kg/CO_2e per unit)	Emissions (kg/CO_2e)
Scope 1	Fuels	Gas Oil	Litres	36,966	2.75541	101,857
	Fuels	Natural Gas	kWh	4,744,660	0.18290	867,798
	Fuels	Propane	Kg	2,484	2.9976	3,834
	Fuels	Diesel	Litres	4,277	2.51279	10,746
	Fuels	Petrol	Litres	7,943	2.08440	16,555
	Passenger Vehicles	Average Car	Miles	374,815	0.26860	100,675
	Passenger Vehicles	Average car- EV	Miles	36,316	0.07636	2,773
	Refrigerant	R407C	Kg	24.5	1,624	39,788
	Refrigerant	R410A	Kg	75	1,924	144,300
	Refrigerant	HFC-134a	Kg	47	1,300	61,100
					Scope 1 Total	**1,349,428**
Scope 2	Electricity: UK	Romford	kWh	2,656,742	0.20705	550,078
	Electricity: UK	Jupiter House	kWh	268,586	0.20705	55,611
	Electricity: UK	Brentwood	kWh	438,400	0.20705	90,771
					Scope 2 Total	**696,460**

Table 3– Scope 1 & 2 Carbon Emissions

The total Scope 1 and 2 emissions for 2024 is 2,046 T/CO_2e.

8. Ethpharm Carbon Footprint Assessment Scope 3

8.1 Purchased Goods and Services

The reporting of Goods and Services is currently optional under NHS England Guidance and have not been assessed at this time.

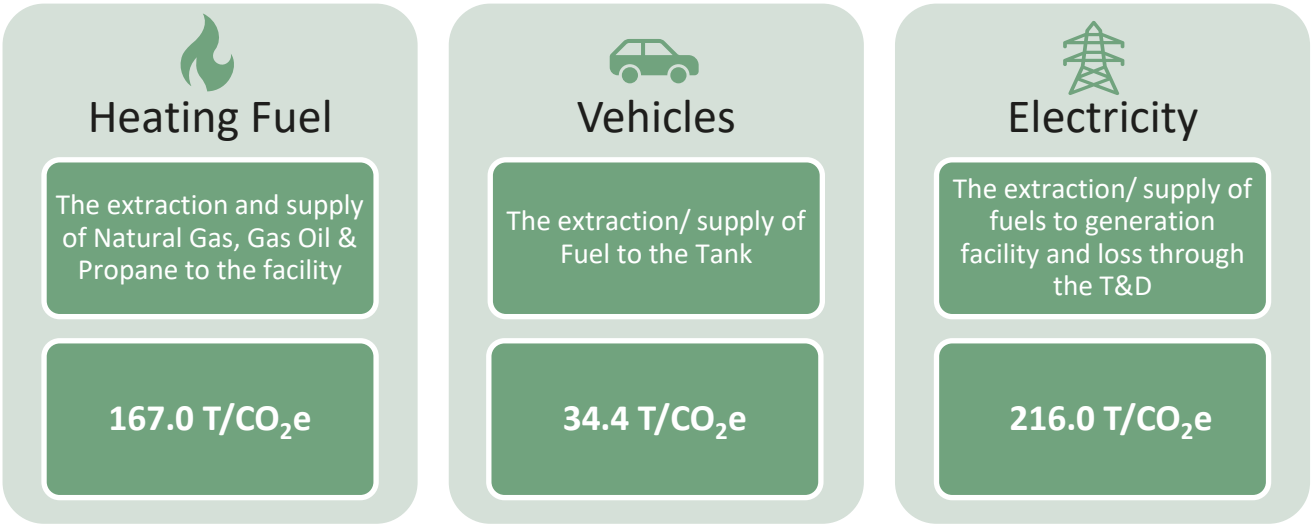
It is believed the vast majority of emissions from goods and services will be associated with the embodied emissions of the active pharmaceutical ingredients used in the medications purchased by Ethypharm. Ethypharm are looking to undertake Life Cycle Analysis of their medications in the future, the results of which would enable them to include Goods and Services emissions in future assessments.

8.2 Capital Goods

Emission from capital goods arise from the raw materials used and the manufacturing processes required to produce the items purchased by Ethypharm. The reporting of Capital Goods is currently optional under NHS England Guidance and have not been assessed at this time.

8.3 Fuel and Energy

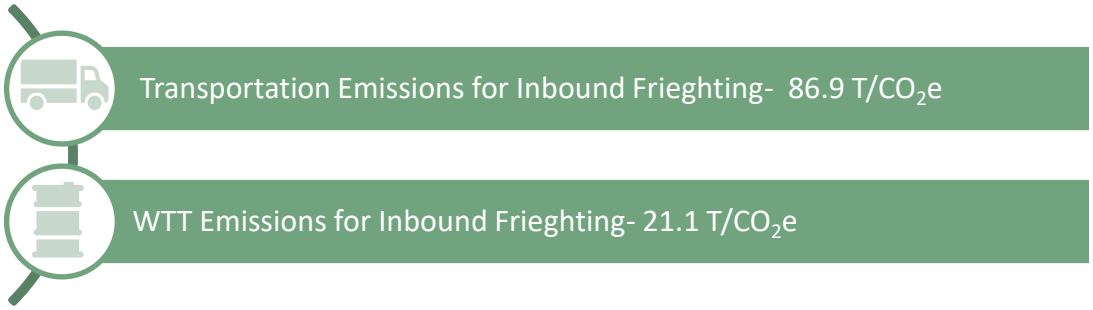
The upstream emissions of purchased fuel and energy are the emissions associated with the extraction and supply process, pre consumption of Scope 1 & 2 fuel sources. These are commonly referred to as the 'well to tank' (WTT) emissions. The consumption/combustion emissions are covered in section 7. The figure below summarises the upstream emissions from each fuel type.



The total emissions associated with upstream fuel use were 417.3 T/CO_2e.

8.4 Upstream Transport and Distribution

Upstream transport data was non-recoverable therefore the 2022 data has been used for an estimation. As turnover has doubled since the 2022 assessment it has been assumed product sales volume will also have doubled. The raw data figures from 2022 have been multiplied by 2.0 to try and account for this business growth. The journey distance for each shipment has been adjusted based on the percentage load share. Shipments were assumed to be made by fully loaded 33t+ Heavy Goods Vehicles (HGVs).



Ethypharm were able to minimise shipping emissions by avoiding the need for air freight. The total emissions from the supply chain in 2024 was 108 T/CO_2e.

8.5 Waste & Water

Waste and water records were available for the reporting period. Emissions from waste treatment and disposal were estimated to be 106.6 T/CO_2e. The emissions from water supply and treatment was estimated to be a further 4.8 T/CO_2e. The quantities and emissions per waste type are detailed in appendix B.

8.6 Business Travel

Business travel data was non-recoverable therefore the 2022 data has been used for an estimation. As staff numbers have remained consistent across both reporting years the required business travel would likely remain similar, therefore no multiplier has been added to the 2022 values. A summary of the staff travel emissions by type is included below. See Appendix B for the individual emissions factors used for all travel

methods and countries of stay for hotel accommodation. All emissions totals included both direct and WTT emissions.

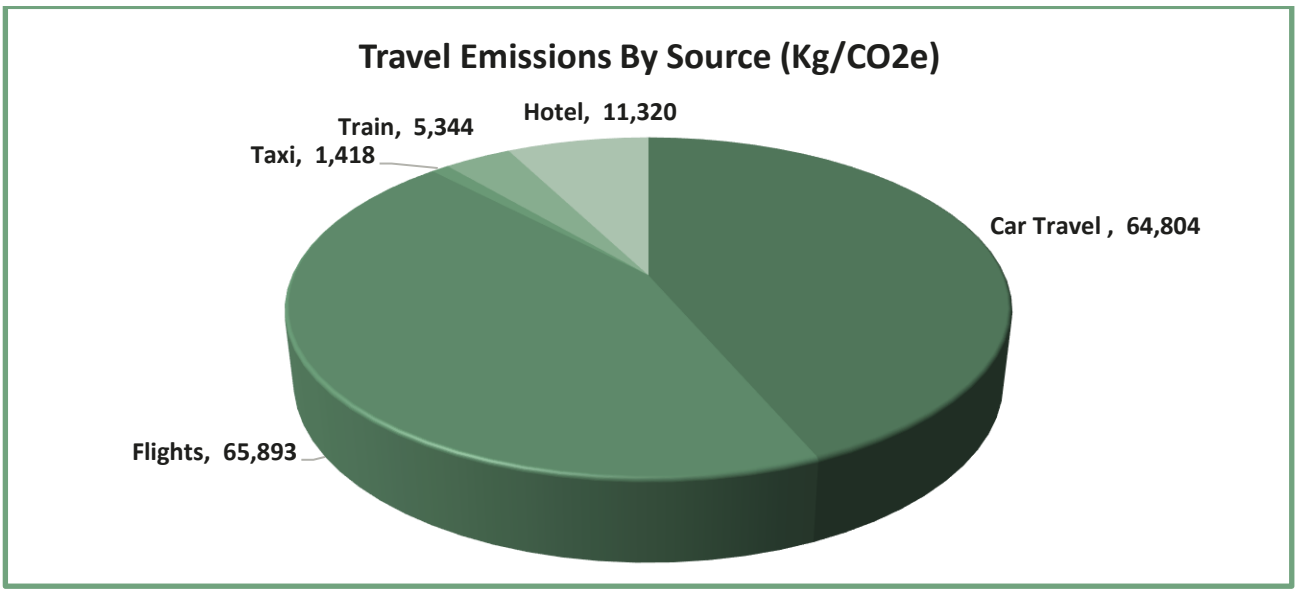


Fig.2 Travel Emissions by Source

The total carbon emissions associated with staff travel and accommodation for 2023 is 148.8 T/CO_2e.

8.7 Employee Commuting & Homeworking

Commuting emissions were calculated using assumed distances between Ethypharm's facilities and staff homes. A daily commute of 30 miles was selected for Brentwood and Jupiter house, and 20 miles for Romford. It was assumed all staff travel by private vehicles. Home working emissions were calculated using the known office days provided by Ethypharm.

Commuting	2,265 Employee Office Days per Week
	2,228,700 Total Miles per Year
	756.4 T/CO_2e per year
Homeworking	635 Home Working Days per Week
	Assumed both Heating & Equipment
	73.1 T/CO_2e per year

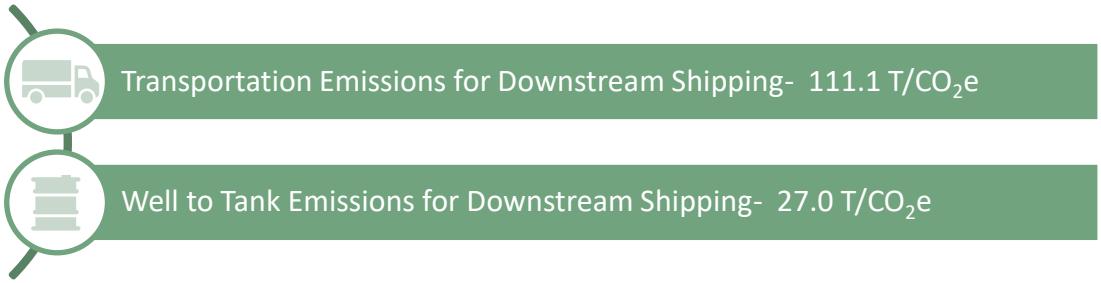
The total emissions from staff commuting and homeworking was estimated to be 829.5 T/CO_2e.

8.8 Upstream Leased Assets

No upstream leased assets were reported during the reporting period.

8.9 Downstream Transport

During the reporting period a total of 43,336 orders were made to client locations. The journey distance for all shipments has been adjusted based on the percentage load share. Shipping emissions were estimated by applying an average weight to all shipments. All shipments were assumed to be made by 33t+ Heavy Goods Vehicles (HGVs). Downstream shipping emissions include both the transfer of products internally as well as delivery to client locations.



The total emissions from the internal transfer of products and downstream shipping in 2024 was 138 T/CO_2e.

9. Emissions Summary

Ethypharm annual business operations were calculated to have a total footprint of 3,759 Tonnes CO_2e. The table and figure below summarise Ethypharm's annual emissions by both scope and by emissions source.

GHG Assessment Emissions Sources			T/CO_2e	% of Total Emissions
Category	Emissions Source Category			
Scope 1	Direct emissions arising from owned, leased or directly controlled stationary sources		1,218.7	32.4%
	Direct emissions arising from owned, leased or directly controlled mobile sources		130.8	3.5%
Scope 2	Market-based emissions from the generation of purchased electricity, heat, steam or cooling		696,460	18.5%
Scope 3	1	Purchased goods and services	-	-
	2	Capital goods	-	-
	3	Fuel and energy related activities	417.3	11.1%
	4	Upstream transportation & distribution.	108.0	2.9%
	5	Waste treatment	111.3	3.0%
	6	Business travel	108.6	2.9%
	7	Employee commuting & homeworking	829.5	22.1%
	8	Upstream leased assets	-	
	9	Downstream transportation and distribution	138.1	3.7%
		Total Emissions	3,758.7	

Table 4–Ethypharm Annual Carbon Emissions 2024

Figure 3 below details the emissions by emissions source. Heating fuel consumption is the largest contributor to Ethypharm's emissions, accounting for 26% of the total footprint.

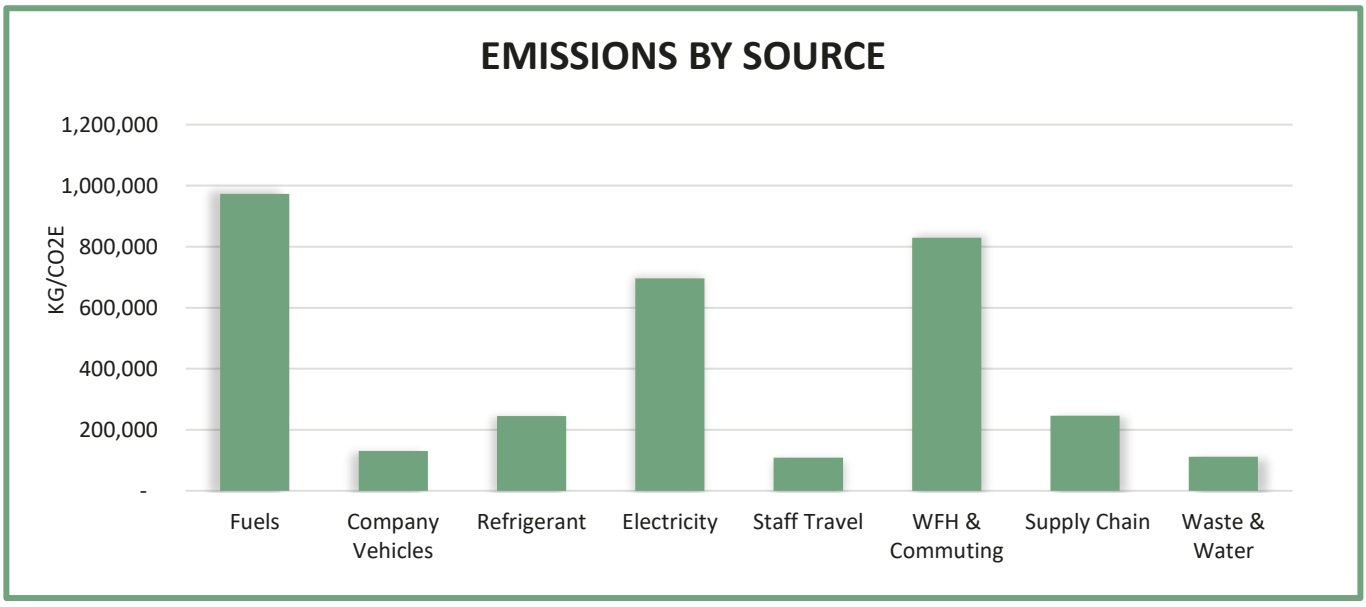


Fig.3 Carbon Emissions by Source

10. Annual Emissions Comparison

This is the second annual assessment undertaken by Ethypharm. The scope of the 2024 assessment was altered and brought into alignment with the updated NHS reporting requirements. As such, upstream energy and downstream freighting emissions were added to the scope and material use emissions were removed.

When considering all emissions sources covered in both assessments, the total emissions across the reporting years were consistent, reported to be 3,397 T/CO_2e in 2022 and 3,203 T/CO_2e in 2024. The emissions from each source for both reporting years is highlighted in the figure below.

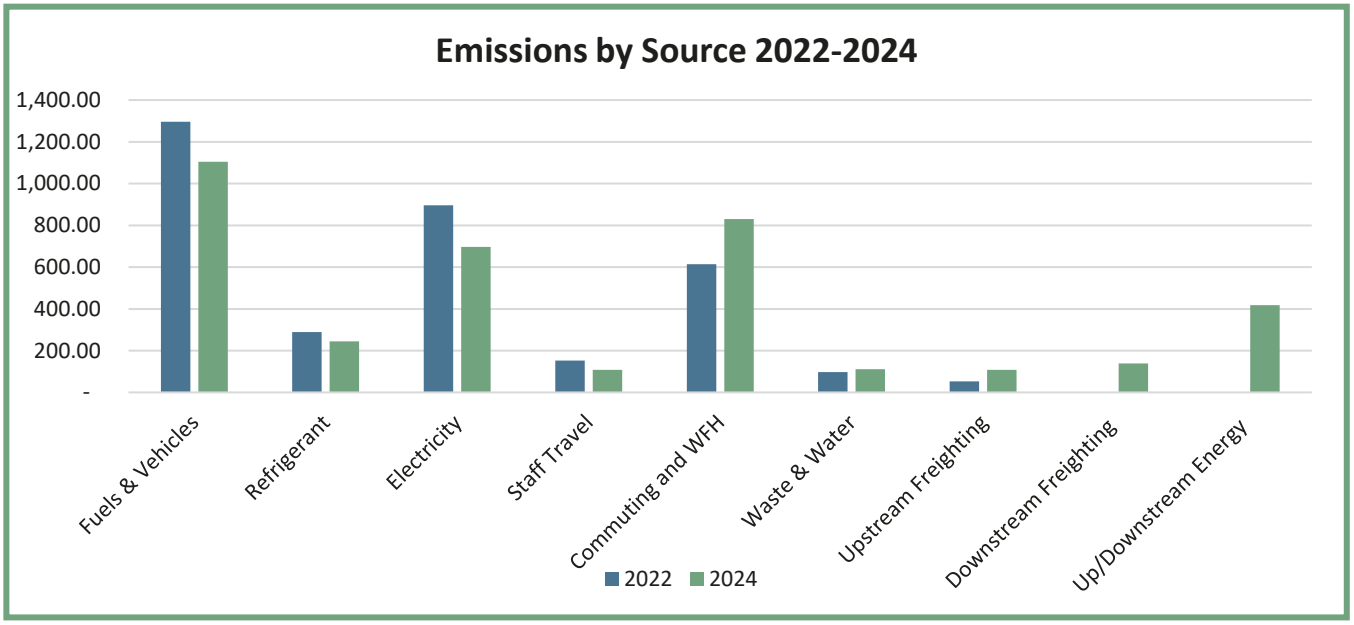


Figure.4 Carbon Emissions by Source 2022-2023

11. Areas for Improvement

During the carbon footprint assessment, the following aspects of the Ethypharm's operations were identified as areas of potential improvement.

Improve Energy Efficiency

In the light of the current high energy prices improving energy efficiency would help reduce both costs and emissions. Renewable options that reduce usage might also provide good payback in the current high prices. Below are some high-level considerations for Ethypharm moving forward.

- Energy audits can typically identify opportunities to save between 5 and 20% of energy and it might be worth undertaking some energy audits on the most energy intensive buildings. Half hourly meter data also provides very useful data to assess how energy is used at different times. Analysis of the data can help to identify areas of energy wastage. The following opportunities might be identified as part of an audit.
- Replacing old incandescent light bulbs with LED lighting which lasts longer and use up to 75% less energy.
- Adjusting pre-set temperatures on things like HVAC systems, heating systems and fridge freezers. For example, increasing the temperature in a fridge by just one degree Celsius could represent an energy saving of 3-4%. Or reducing the thermostat temperature in buildings by just one degree can potentially save thousands of kilowatt-hours of electricity each year.
- Sensor-based lighting which turns off when rooms and corridors are not being used could also be explored.

REGO Electricity

Potential options for minimising the carbon emissions associated with electricity use include:

- Purchasing REGO certified electricity supply
- Should your mains electricity requirements be sourced from a guaranteed renewable source under the Renewable Energy Guarantees Origin (REGO) scheme with their issued REGO certificate, all of the emissions on that supply contract would carry zero carbon emissions. Reducing future emissions by over 900 tonnes CO_2e (this year's value for electricity use).

Staff Travel

Annual staff travel emissions were calculated to be 108,008 Kg/CO_2e. Approximately 40% of these emissions were generated from domestic and short haul flights.

- Consider replacing domestic and short haul flights (London to France) with rail travel
- Removing domestic flights would reduce emissions by 10,382 Kg/CO_2e per year.

Refrigerant

The emissions associated with the use of refrigerants vary greatly depending on the individual type used. For example, these can range from less than 1 kg CO_2e per kg of refrigerant used to over 20,000 kg CO_2e per kg of refrigerant.

- Ethypharm most used refrigerant by weight (R410A) emits 1,924 kg CO2e per kg of refrigerant used.
- A review could be conducted into current use and the feasibility to switching to less carbon intensive refrigerants where possible.

12. Potential Future Works

12.1 Life Cycle Assessment (LCA) of Medication

Conducting an LCA of Ethypharm's medications would enable them to report actual emissions by medication type to the NHS. To do this Ethypharm could assess their most common medication by production quantity or assess multiple medications to obtain an average emissions factor. To complete an LCA Ethypharm would need input from the medicine manufacturer to confirm details such as energy use during production, APIs used, and supplier locations among other factors.

Completing an LCA would also enable Ethypharm to include raw material use in their annual company assessment. It is common for material use to account for 80-95% of a pharmaceutical company's annual emissions therefore these should be included, if possible, to ascertain a more accurate footprint.

13. Contact Details

Carbon-Zero UK (A division of Data Engineering Projects Limited)
100 Union Street
Aberdeen
AB10 1QR
Email: meadie@carbon-zero.uk
fchristie@dataenp.co.uk
Website: www.carbon-zero.uk
Telephone: 01224 049169

Appendix A – Deliverables, Actions and Data Request

Project Deliverables

- From data provided by Ethypharm – perform a full carbon assessment on all office/facility operations.
- Provide a report summarising the emissions for each location in line with Scopes 1,2 and 3 of the GHG reporting protocol, highlighting highest emissions, identifying opportunities for improvement.
- Provide information for offsetting total emissions with the purchase of carbon credits, one per Te of CO2e emissions.

Actions required to deliver the above:

- Perform a full Carbon Footprint Assessment on business operations.
- Understand the full scope of Ethypharm owned emissions (locations, power sources, heat sources, consumables, owned vehicles, business travel, material used etc)
- Review business operations to identify which emissions will belong to your customer base.
- Identify emissions or cost saving opportunities
- Prepare carbon footprint report
- Provide a breakdown of carbon emissions aligned to GHG protocol scopes 1, 2 and 3.
- Similar breakdown of carbon emissions but aligned to business silos.
- Include any potential opportunities for improvement identified.
- Provide cost of offsetting carbon footprint

To conduct the assessment, the following information was requested from Ethypharm:

- Annual electricity usage– (kWh)
- Annual Diesel, Red Diesel, Petroleum, Gas or Natural gas usage
- Any other consumable fuels (i.e., argon for spot welding in workshop) usage
- Owned or leased vehicle breakdown – including engine sizes, vehicle type, fuel type and annual mileage
- Annual mains water usage (cubic meters)
- Annual or monthly water treatment volumes (cubic meters) (if all mains water used on site is drained then N/A)
- Annual waste volumes and means of disposal – i.e., scrap metal recycled, gas cylinders recycled, municipal etc.
- Annual inbound consigned deliveries received – volumes or quantities or delivered goods
- Annual business travel and overnight stays associated with business development
- A list of all raw materials purchased, including material type and weight. If items have mixed material types the component with the largest weight share can be used.

This data requirement list should be considered live and may change annually as the business grows.

Appendix B – Online Calculator

Classification	Category	Units	Quantity	Description	Emissions Factor	Carbon Emissions (kilograms CO2e)	Carbon Emissions (tonnes CO2e)	%
Scope 1								
Fuels	Gaseous Fuels	Litres	2,484	Propane	1.54357	3,834	3.8	0.1%
	Gaseous Fuels	kWh	4,744,660	Natural Gas	0.18290	867,798	867.8	23.1%
	Liquid Fuels	Litres	36,966	Gas Oil	2.75541	101,857	101.9	2.7%
	Liquid Fuels	Litres	4,277	Diesel	2.51279	10,746	10.7	0.3%
	Liquid Fuels	Litres	7,943	Petrol	2.08440	16,555	16.6	0.4%
Passenger Vehicles	Average Car	Miles	374,815	Unknown Fuel	0.26860	100,675	100.7	2.7%
	Average Car	Miles	36,316	EV	0.07636	2,773	2.8	0.1%
Refrigerant	R407c	Kg	24.5		1,624	39,788	39.8	1.1%
	R410a	Kg	75		1,924	144,300	144.3	3.8%
	R134a	Kg	47		1,300	61,100	61.1	1.6%
				Scope 1 Total		**1,349,428**	**1,349.4**	**35.9%**
Scope 2								
Electricity	Electricity UK	kWh	2,656,742	Romford	0.20705	550,078	550.1	14.6%
	Electricity UK	kWh	268,586	Brentwood	0.20705	55,611	55.6	1.5%
	Electricity UK	kWh	438,400	Jupiter House	0.20705	90,771	90.8	2.4%
				Scope 2 Total		**696,460**	**696.5**	**18.5%**
Scope 3								
Business Travel	Flights- Domestic	Passenger.km	39,686	Economy	0.272577	10,817	10.8	0.3%
	Flights- Short Haul	Passenger.km	145,550	Economy	0.182869	26,617	26.6	0.7%
	Flights- Long Haul	Passenger.km	146,891	Economy	0.20011	29,394	29.4	0.8%

	Flights- International	Passenger.km	143,572	Economy	0.13465	19,332	19.3	0.5%
	Rail	Passenger.km	54,171	National Rail	0.03546	1,921	1.9	0.1%
	Regular Taxi	Passenger.km	5,011	Taxi	0.20805	1,043	1.0	0.0%
Commuting	Average Car, Unknown Fuel	Miles	1,794,000	Romford	0.26860	481,868	481.9	12.8%
	Average Car, Unknown Fuel	Miles	172,500	Brentwood	0.26860	46,334	46.3	1.2%
	Average Car, Unknown Fuel	Miles	262,200	Jupiter House	0.26860	70,427	70.4	1.9%
Freighting Goods	HGV Refrigerated–Articulated (>33t) 100% Laden	Miles	44,680	Supply Chain – Upstream	1.94524	86,913	86.9	2.3%
	HGV Refrigerated- Articulated (>33t) 100% Laden	Miles	57,116	Supply Chain – Downstream	1.94524	111,104	111.1	3.0%
Home Working	Equipment + Heating	Hours	69,000	Romford	0.33378	23,031	23.0	0.6%
	Equipment + Heating	Hours	8,625	Brentwood	0.33378	2,879	2.9	0.1%
	Equipment + Heating	Hours	141,450	Jupiter House	0.33378	47,213	47.2	1.3%
Hotel Stay	France	Nights	274	Room per night	6.7	1,836	1.8	0.0%
	Germany	Nights	3	Room per night	13.2	40	0.0	0.0%
	Portugal	Nights	8	Room per night	19.0	152	0.1	0.0%
	India	Nights	3	Room per night	58.9	177	0.2	0.0%
	Spain	Nights	18	Room per night	7.0	126	0.1	0.0%
	UK	Nights	559	Room per night	10.4	5,814	5.8	0.2%
Transmission & Distribution	UK Electricity	kWh	3,363,727	All sites	0.0183	61,556	61.6	1.6%
Waste Disposal	Refuse- Commercial	tonnes	29.78	DMR- Combustion	6.41061	191	0.2	0.0%
	Refuse- Commercial	tonnes	56.84	Residual- Combustion	6.41061	364	0.4	0.0%
	Refuse- Commercial	tonnes	203.72	Haz- Landfill	520.33420	106,002	106.0	2.8%
Water Supply	Water Supply	m3	14,466	All Locations	0.15311	2,215	2.2	0.1%
Water Treatment	Water Treatment	m3	13,743	All Locations	0.18574	2,553	2.6	0.1%
WTT	WTT- Business Travel	Passenger.km	39,686	Domestic	0.0335	1,329	1.3	0.0%
	WTT- Business Travel	Passenger.km	145,550	Short Haul	0.02249	3,273	3.3	0.1%
	WTT- Business Travel	Passenger.km	146,891	Long Haul	0.02461	3,615	3.6	0.1%

	WTT- Business Travel	Passenger.km	143,572	International	0.01656	2,378	2.4	0.1%
	WTT- Delivery Vehicles	Miles	44,680	HGV>33t (Upstream)	0.47212	21,094	21.1	0.6%
	WTT- Delivery Vehicles	Miles	57,116	HGV>33t (Downstream)	0.47212	26,966	27.0	0.7%
	WTT- Fuels	Kg	2,484	Propane	0.35267	451	0.5	0.0%
	WTT- Fuels	kWh	4,744,660	Natural Gas	0.03021	143,336	143.3	3.8%
	WTT- Fuels	Litres	36,966	Gas Oil	0.62665	23,165	23.2	0.6%
	WTT- Fuels	Litres	7,943	Petrol	0.58094	4,614	4.6	0.1%
	WTT- Fuels	Litres	4,277	Diesel	0.61101	2,613	2.6	0.1%
	WTT- Passenger Vehicles	Miles	36,316	Average Car, EV	0.01688	613	0.6	0.0%
	WTT- Passenger Vehicles	Miles	374,815	Average Car, Unknown	0.07079	26,553	26.6	0.7%
	WTT- Passenger Vehicles	Miles	2,228,700	Commuting Average Car, Unknown	0.07079	157,770	157.8	4.2%
	WTT- rail	passenger.km	54,171	National Rail	0.00897	486	0.5	0.0%
	WTT- taxis	km	5,011	Average Taxi	0.05176	259	0.3	0.0%
	WTT- UK electricity	kWh	3,363,727	All sites	0.0459	154,395	154.4	4.1%
				Scope 3 Total		**1,712,809**	**1,712.8**	
				Grand Total		**3,758,697**	**3,758.7**	

Appendix C – Emissions from Other GHG's

The table below summarises the scope 1 and 2 emissions from individual greenhouse gases.

Scope	Source	Consumption	Unit	C02		CH4		N20	
				CO2 Factor	KG/CO2	CH4 Factor	kg/CH4	N20 Factor	kg/N20
Scope 1	Gas Oil	36,966.3	Litres	2.72417	100,702	0.00315	116	0.02809	1,038
	Propane	2,484	Litres	1.54140	3,829	0.00133	3	0.00084	2
	Petrol	7,943	Litres	2.07047	16,445	0.00806	64	0.00587	47
	Diesel	4,277	Litres	2.47960	10,605	0.00029	1	0.03290	141
	Natural Gas	4,744,660	kWh	0.18253	866,043	0.00028	1,329	0.00009	427
	Passenger vehicles	374,815	Miles	0.26673	99,974	0.00030	112	0.00157	588
	Passenger vehicles	36,316	Miles	0.07548	2,741	0.00037	13	0.00051	19
Scope 2	Electricity	3,363,727	kWh	0.20493	689,329	0.00090	3,027	0.00122	4,104
Total					**1,789,667**		4,667		**6,366**