Health Innovation East

CARBON FOOT PRINT

2023-2024

healthinnovationeast.co.uk

Prepared By:

Eco Sourcing Hub
REDUCE COSTS, EMISSIONS & RISKS

Contents

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Introduction

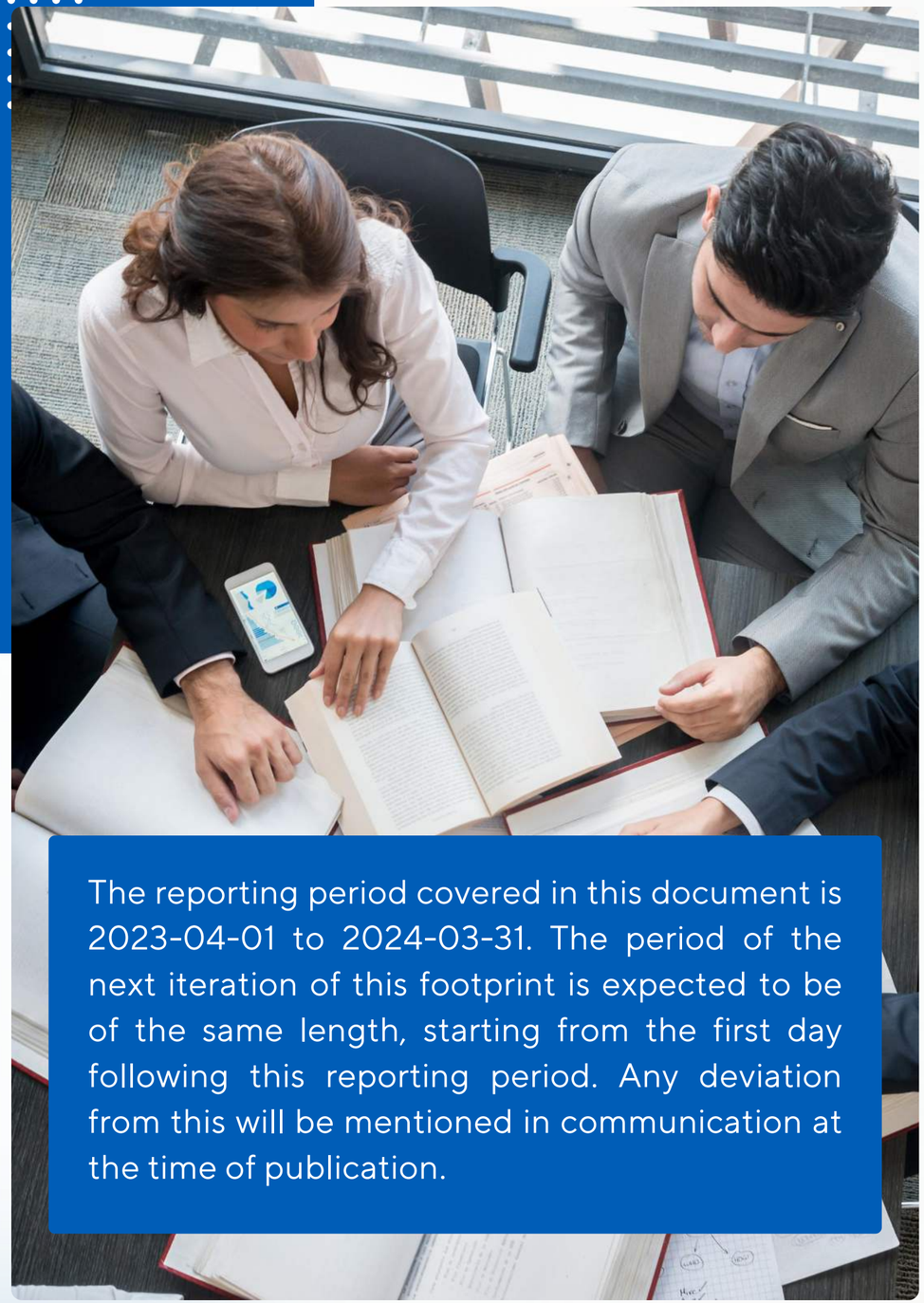
Health Innovation East, the innovation arm of the NHS in the region, compromises a team of almost 70 clinicians, data scientists, life sciences industry experts and skilled programme leaders passionate about helping the best innovations in health and care reach the people, places and problems where they bring most benefit.

As a trusted partner to the NHS, we work with colleagues to help understand how innovations can transform health and care. We work closely with industry, universities, patients and the voluntary sector to deliver meaningful change in the real world.

Our focus is the East of England, a region which is home to some of the world's greatest science and healthcare practitioners but is also characterised by significant health inequalities. We strive to bring the region's most promising innovations to those who most need them.

We have the proven ability to deliver both bespoke individual projects and large complex programmes from concept through to implementation.

We can support innovators to accelerate their innovation through the commercialisation journey and help them to position their products most effectively for the NHS.



The reporting period covered in this document is 2023-04-01 to 2024-03-31. The period of the next iteration of this footprint is expected to be of the same length, starting from the first day following this reporting period. Any deviation from this will be mentioned in communication at the time of publication.

About This Report

This report contains the carbon footprint of the organisation for the reporting period 2023/2024.

The purpose of this report is to disseminate the inventory of greenhouse gas (GHG) emissions with great attention to the accounting principles of relevance, accuracy, consistency, completeness and transparency.

This report is intended for all stakeholders interested in the GHG emissions inventory and the associated reporting structure and explanations.

This report has been prepared in accordance with the requirements of the Greenhouse Gas Protocol reporting standards (Corporate Accounting and Reporting Standard, 2004; Corporate Value Chain Accounting and Reporting Standard, 2011).

This report endeavours to use primary data wherever possible but especially surrounding all major emissions sources. Where primary data is not available, a consistent and conservative approach to calculation is applied.

Also this report excludes specific targets or forecasts as well as reports on GHG removals and offsets.

Methodology

This assessment of GHG emissions is compliant with the Greenhouse Gas Protocol, a globally recognised standard jointly developed by the World Resources Institute and the World Business Council for Sustainable Development. The Greenhouse Gas Protocol provides comprehensive, standardised frameworks for quantifying and managing GHG emissions across private and public sector operations, value chains, and mitigation efforts.

Five key accounting principles are central to the Greenhouse Gas Protocol methodology:

Relevance

Ensure that the GHG data collection accurately records and presents all relevant emissions from the organisation.

Completeness

The calculation captures all emitted GHGs. If any emission sources are omitted, clear and detailed justifications are given.

Consistency

The calculations are based on uniform methods. Any changes in data sources, calculation boundaries, or emission factors are always reported.

Methodology

Transparency

All collected data is clearly and coherently reported, preferably through an accurate audit scheme. All assumptions on methods, approximations and emission factors are well documented.

Accuracy

The quantification of GHG emissions is without systematic overestimation or underestimation, it is tried to reduce uncertainties as much as possible wherever possible.

Following the guidelines of the Greenhouse Gas Protocol, the emissions inventory encompasses seven primary (groups of) GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). All of these gases are considered in-scope.

Additionally, emissions out-of-scope are also considered, this included carbon dioxide from biogenic origin ($bioCO_2$) and other greenhouse gases which are not included in the Kyoto Protocol, but still have a well-established global warming effect.

The Greenhouse Gas Protocol classifies emissions into 3 scopes and 21 categories:

Scope 01

Direct GHG emissions originate from sources owned or controlled by the organisation.

Scope 02

Indirect GHG emissions result from purchased electricity and other energy carriers.

Scope 03

Other indirect GHG emissions beyond those covered by Scope 2 that happen elsewhere in the value chain, both upstream and downstream.

These scopes are further subdivided into distinct activity categories.

Scope 1 encompassed 4 categories, Scope 2 encompasses 2 categories, and Scope 3 emissions are split into 15 categories, across upstream and downstream. See Figure 1 for a visual summary of this classification across the value chain.

To assess the global warming impact of emissions, the GHGs are evaluated using the Global Warming Potential (GWP) over a 100-year timeframe. For more detailed information on the methodology.

In the subsequent sections, activity categories may be customised in terms of naming, order, and further subdivision to enhance transparency and comparability within the organisation, in accordance with the Greenhouse Gas Protocol accounting principles. However, to ensure standardisation and analysis across industries, each activity category remains directly linked to one of the standard Greenhouse Gas Protocol activity category types.

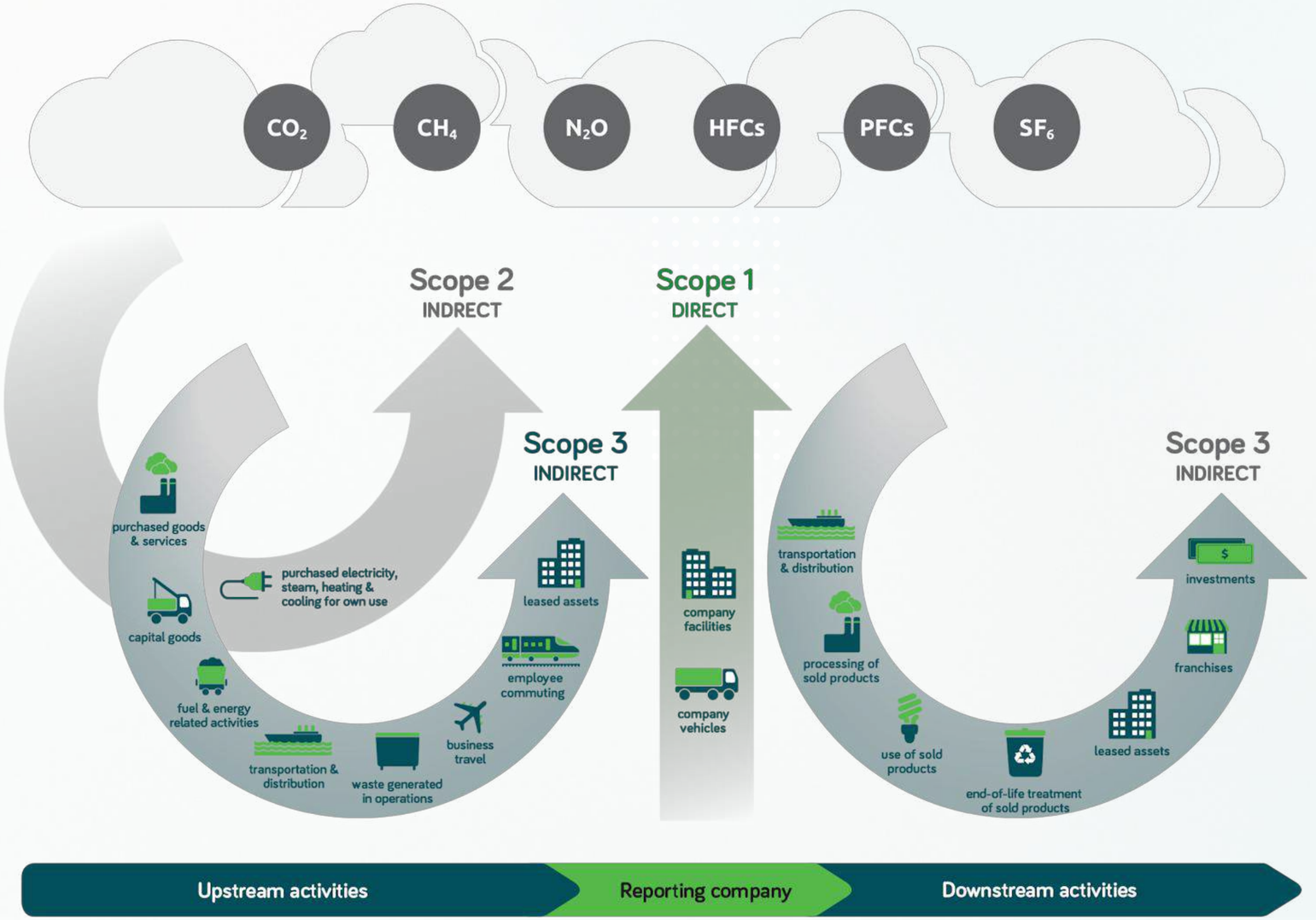
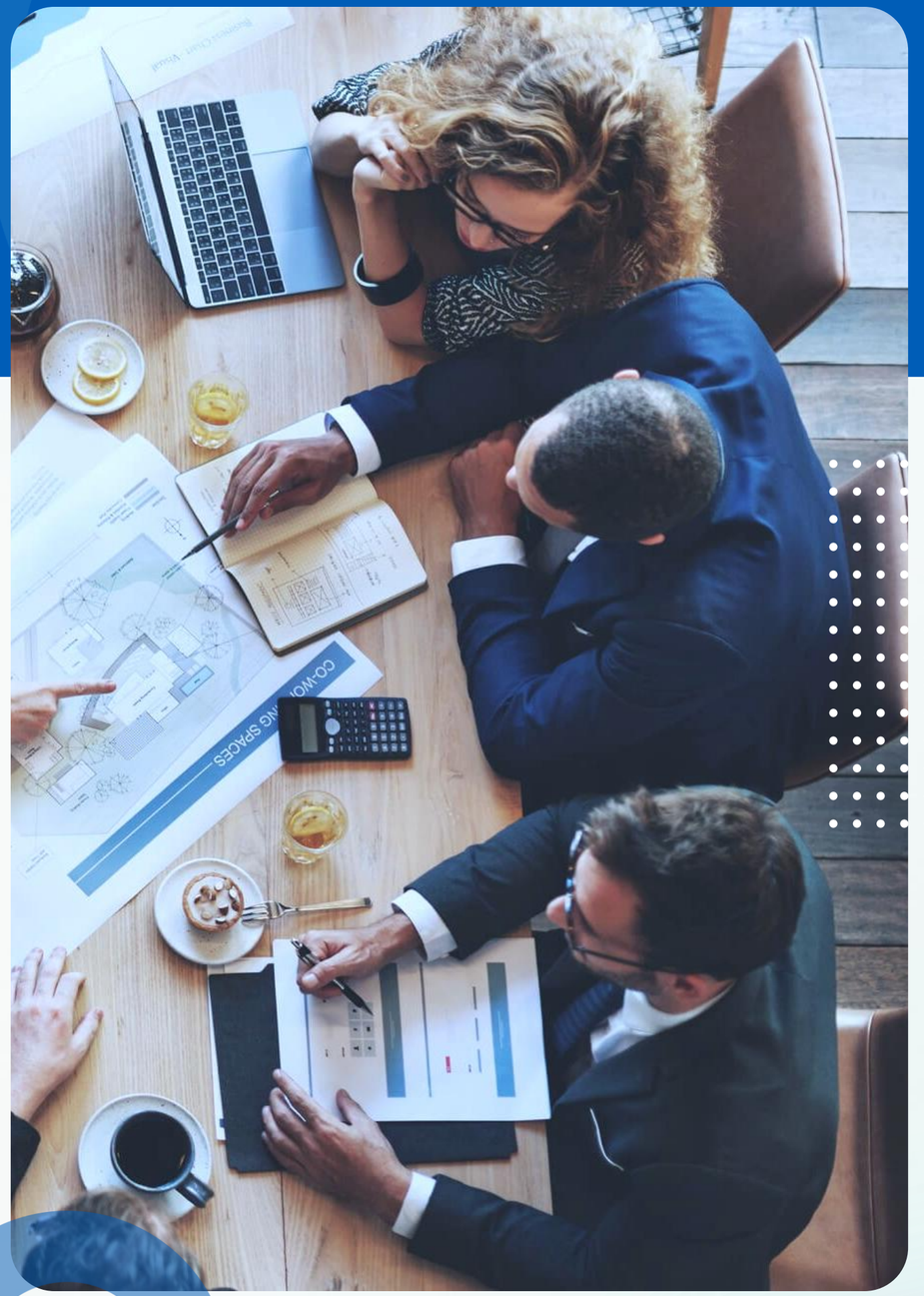


Figure 1: Overview of Greenhouse Gas Protocol scopes and activity categories across the value chain. Adapted from the Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard.

Organisational Boundaries



Organisational Boundaries

The organisational boundaries for this report were set using the operational control approach for consolidation.

Under this approach, the organisation accounts for 100% of the GHG emissions from operations and the value chain over which it has operational control. Operational control applies when the organisation or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

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Operational Boundaries

Details on the description of the activity categories, as well as their notes and their respective Greenhouse Gas Protocol references, can be found in the tables below.

Direct		
Mobile Combustion	Description	Emissions resulting from the combustion of fuels in company owned/controlled mobile combustion sources
	Note	the company owns no vehicles
	GHG Protocol Reference	1.2 Mobile combustion
Fugitive Emissions	Description	Emissions resulting from the leakage of refrigerants or the direct release of greenhouse gasses
	Note	NO leaks or losses in the system
	GHG Protocol Reference	1.4 Fugitive emissions
Stationary Combustion	Description Note	Emissions resulting from combustion of fuels in stationary sources Directly Company does not have gas boiler.
	GHG Protocol Reference	1.1 Stationary combustion
Electricity		
Electricity	Description	Emissions resulting from the generation of electricity, purchased by the company
	Note	The company has renewable tariff.
	GHG Protocol Reference	2.1 Purchased electricity

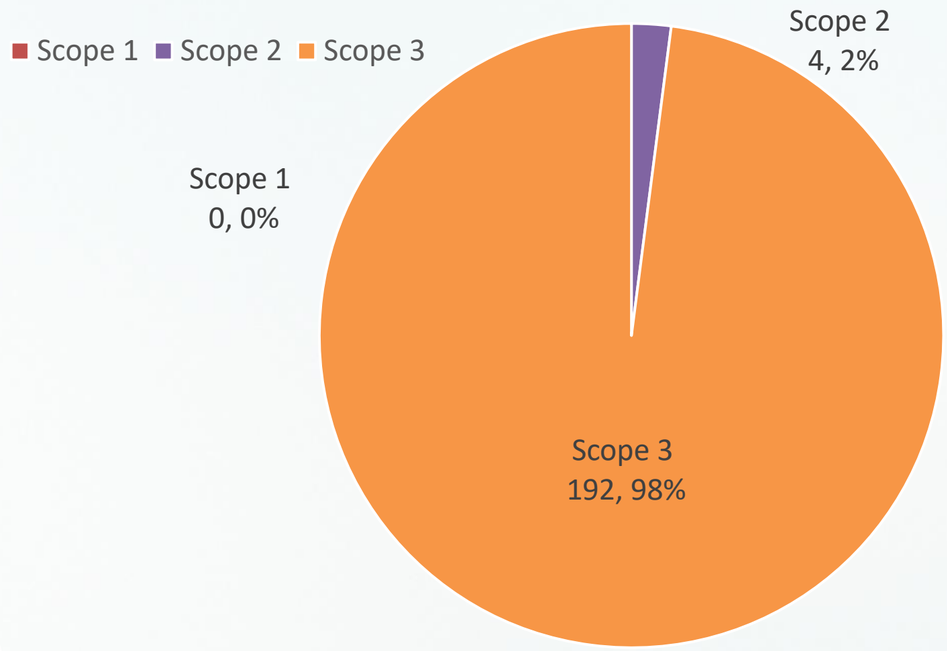
Upstream		
Goods & Services	Description Note	Embedded emissions in purchased goods and services Important overview of major indirect emissions sources in the supply chain
	GHG Protocol Reference	3.1 Purchased goods and services
Energy Supply	Description	Embedded emissions in the purchase of fuels and energy in other activity categories
	Note	Reflects important upstream emissions coupled with the organisations fuel and energy use
	GHG Protocol Reference	3.3 Fuel- and energy-related activities
Transport Upstream	Description	Emissions related to the transport of goods upstream of the production process or any transport purchased by the company
	Note	Reflects the indirect carbon footprint of logistics in the value chain
	GHG Protocol Reference	3.4 Upstream transportation and distribution
Waste	Description	Emissions related to the disposal and processing of waste generated in operations
	Note	Shared waste container with very minimal emission.
	GHG Protocol Reference	3.5 Waste generated in operations
Business Travel	Description	Emissions related to transportation of employees for business-related activities
	Note	Important for understanding and managing travel-related emissions
	GHG Protocol Reference	3.6 Business travel
Commuting	Description	Emissions related to commutes of employees in vehicles not under control of the company
	Note	Important for understanding and managing employee commuting emissions
	GHG Protocol Reference	3.7 Employee commuting
Capital Goods	Description	Embedded emissions in capital goods like buildings, cars, ICT and machinery
	Note	NO capital goods in the reporting period.

In the tables below you can find details on the activity categories that were excluded from this report; the description of each of these, the rationale to exclude and their respective Greenhouse Gas Protocol references.

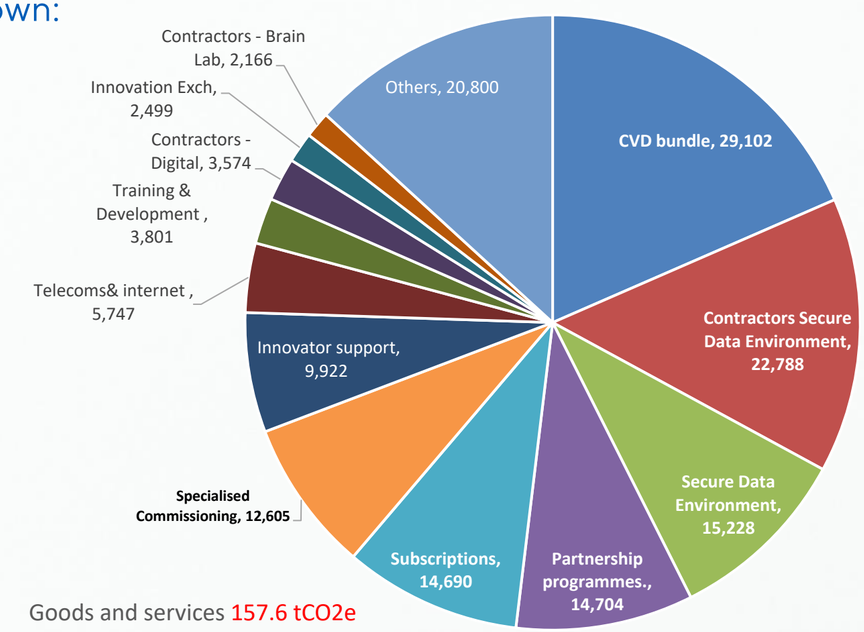
Excluded Activities		
Process Emissions	Description	Emissions resulting from the release of greenhouse gasses in production processes
	Rationale to Exclude	Emissions category not applicable
	GHG Protocol Reference	1.3 Process emissions
Steam, Heat, Cooling	Description	Emissions resulting from the generation of steam, heating or cooling, purchased by the company
	Rationale to Exclude	Emissions category not applicable
	GHG Protocol Reference	2.2 Purchased steam, heat, cooling
Leased Assets as Lessee	Description	Emissions related to the operation of assets leased by the reporting company
	Rationale to Exclude	Not relevant for in the applied consolidation approach
	GHG Protocol Reference	3.8 Upstream leased assets (as lessee)
Investments	Description Rationale to Exclude	Emissions related to the operation of investments Emissions category not applicable
	GHG Protocol Reference	3.15 Investments
Transport Downstream	Description	Emissions related to the transport of goods downstream of the production process not paid for by the company
	Note	No products sent to clients.
	GHG Protocol Reference	3.9 Downstream transportation and distribution
End-of-life of Product	Description	Emissions related to the disposal of the sold product at the end of its planned lifetime
	Note	No products sent to clients.
	GHG Protocol Reference	3.12 End-of-life treatment of sold products
Use of Product	Description	Emissions related to energy use of the product during its planned lifetime
	Note	No products sent to clients.
	GHG Protocol Reference	3.11 Use of sold products

GHG Emissions Inventory

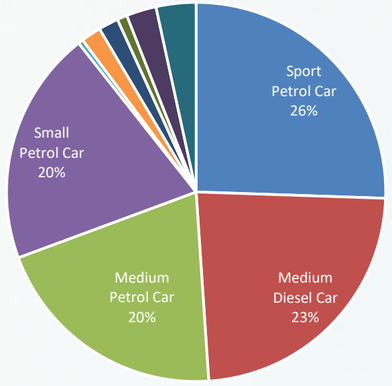
In the reporting period Y23/24 majority of the organization's emissions come from Scope 3, of 192 tCO2e out of the overall 196 tCO2e:



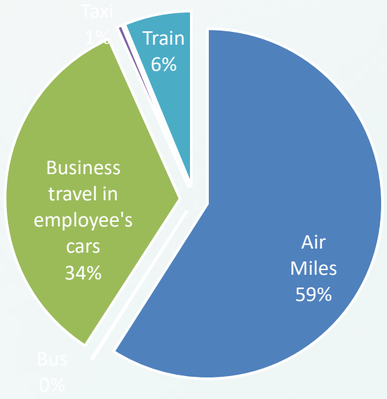
Scope 3 breakdown:



Goods and services 157.6 tCO2e



Commuting **23.7 tCO2e**



Busnis Travel **8.4 tCO2e**

Methodological Details

The GHG emissions inventory reflects the consolidation of emissions data according to the Greenhouse Gas Protocol reporting standards. These being the Corporate Accounting and Reporting Standard (2004), the Corporate Value Chain Accounting and Reporting Standard (2011), and all associated guidance documents.

GHG Classification Structure

Global Warming Potential

Additional Radiative Forcing Effects

Dual Reporting in Scope 2

Approach to Emission Factors

Approach to Base Year Reporting

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GHG Classification Structure

The reported GHG emissions are organised and aggregated into their respective activity categories and activity category groups.
Each activity category is associated with a Greenhouse Gas Protocol category (1.1 to 3.15).

You can find a consolidation of all emissions into the strict Greenhouse Gas Protocol structure at the end of the report.
This table shows a breakdown by greenhouse gas of all non-biogenic emissions.
Carbon offsets (removals or avoided emissions) are not reported in this report nor have they been subtracted from the total.

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Global Warming Potential

The following GHGs are included in the analysis: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), nitrogen trifluoride (NF3), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

Emissions from these GHGs are expressed in CO2-equivalent (CO2e) based on their global warming potential over a time horizon of 100 years (GWP100). The Global Warming Potential values are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth, Fifth or Sixth Assessment Report (AR4, AR5 or AR6), in accordance with the methodological choices of the emission factor publishers used in this report.

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Additional Radiative Forcing Effects

The emission factors for aviation were extended to include the additional effects of radiative forcing through the emission of gases and aerosols and changing cloud abundance. For this a central estimate for a multiplier to the GWP100 figure is used. This estimate tries to reflect the additional effect based on the best available scientific evidence, while being consistent with UNFCCC reporting convention.

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Dual Reporting in Scope 2

The total emissions in this report include electricity emissions using the location-based method. Not taking into account any contractual or market-based mechanisms to allocate electricity emissions to consumers, and relying on average grid emissions factors. However, this report is set up with a dual reporting disclosure objective in mind, and the result of both market and location-based reporting methods can be found in the full GHG table in Appendix II and Appendix IV. Do note that the total emissions in that table includes electricity emissions using the location-based method, as mentioned above.

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Approach to Emission Factors

For each activity the most relevant and localised emission factor possible has been selected, at the discretion of the reporter. The key considerations in emission factor selection were locality and relevancy, as well as the availability of emission factors and consistency of methodologies throughout each emission factor source.

A full list of emission factor publications used in this report can be found in the table below:

Publisher	Publication Version	Publication Date	URL Usage
UK.gov GHG Reporting Factors	v2023 1.0	2023-05-15	link 57.1%
Exiobase	3.8.2	2021-10-21	link 25.7%
Association of Issuing Bodies	v2023	2024-05-30	link 17.1%

Each emission factor used in the calculation has an assigned validity period overlapping or partially overlapping with the application period of the reported activity. The validity period of emission factors is determined by its publication document[1].

[1] In case the application period of the activity overlaps with the validity period of more than one emission factor, the median data of the application period is used to determine which factor to use (e.g. if an activity stretches from August 2021 to July 2022, the median date is 29/01/2022)

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Approach to Base Year Reporting

The reporting period Y23/24 is the first GHG reporting period for Health Innovation East, and counts as the base year for the current and future reporting cycles.

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Uncertainty Assessment

To assess the uncertainty involved with the emissions calculations in this report, we applied the Greenhouse Gas Protocol's Quantitative Uncertainty Guidance to the inventory data. Using a system with discrete levels of uncertainty, a point estimate for each data point was obtained, which then was propagated across the entire inventory to result in a general quantified uncertainty estimation.

The first step in this process is separating the activity data uncertainty from the emission factor uncertainty. Activity data uncertainty (or volume uncertainty) reflects the reliability, completeness, and temporal, geographical and technical representativeness of the numerical value used into the emissions calculation (e.g. the uncertainty on "1000 kg of product A"). The emission factor uncertainty on the other hand, reflects the reliability, completeness and representativeness of the numerical value of the estimated emission intensity (e.g. the uncertainty on "500 kgCO2e per kg of product A").

For both the activity data uncertainty and the emission factor uncertainty, a single parameter uncertainty value is derived. This single parameter reflects the incomplete knowledge of the exact value in a probability distribution, based on qualitative assessments of how the evaluated parameter scores on the aforementioned dimensions (e.g. reliability). The numerical link between the qualitative assessment (very good, good, fair, poor) and the probability distribution is given by a pedigree matrix, provided by the Greenhouse Gas Protocol in the Quantitative Uncertainty Guidance (link).

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Uncertainty Assessment

Once the single parameter uncertainty of both activity data and emission factor is established for each entry, this uncertainty is propagated across all entries in the inventory. With this, we can obtain an estimate for the full uncertainty across all measurements. This propagation happens through Taylor series expansion under lognormal distribution assumptions (conform Greenhouse Gas Protocol guidance). It is likely that this leads to a conservative estimate, in other words the total uncertainty is likely an overestimation or an upper-bound of the real uncertainty.

Finally, this propagated uncertainty is aggregated; first on activity category level, and eventually for the total emissions across the entire inventory. The uncertainty is expressed as a 95% confidence interval of the actual value, assuming a lognormal distribution. The ”-29% to +40%” uncertainty estimation for a value of 1000 tCO2e therefore indicates that with 95% certainty, the real value for this number lies between 710 tCO2e (1000 tCO2e -29%) and 1400 tCO2e (1000 tCO2e +40%).

Overview Table of GHG Emissions

Activity Category	(tCO_2e)	Certainty	Percentage
Scope 1:	0	-	-
Mobile Combustion	-	-	-
Fugitive Emissions	-	-	-
Stationary Combustion	-	-	-
Scope 2:	4	–20% to +24%	2%
Electricity Location	4	–20% to +24%	2%
Scope 3 Upstream	192	–33% to +49%	98%
Goods & Services	158	–38% to +62%	81%
Energy Supply	2	–16% to +19%	1%
Transport Upstream	<1	–20% to +26%	<1%
Waste	<1	–20% to +26%	<1%
Business Travel	8	–28% to +38%	4%
Commuting	24	–21% to +27%	12%
Capital Goods	-	-	-
Downstream	0	-	-
Transport Downstream	-	-	-
End-of-life of Product	-	-	-
Use of Product	-	-	-
Total GHG emissions	**196**	**–32% to +48%**	**100%**

Activity Category	All GHG	CO_2	CH_4	N_2O	SF_6	NF_3	HFCs	PFCs	CO_2e*	
	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	
Scope 1:	-	-	-	-	-	-	-	-	-	
Mobile Combustion	-	-	-	-	-	-	-	-	-	
Fugitive Emissions	-	-	-	-	-	-	-	-	-	
Stationary Combustion	-	-	-	-	-	-	-	-	-	
Scope 2:	4	4	-	-	-	-	-	-	-	
Electricity	4	4	-	-	-	-	-	-	-	
Scope 3: Upstream	192	147	36	3	1	-	4	<1	-	
Goods & Services	158	114	36	3	1	-	4	<1	-	
Energy Supply	2	2	-	-	-	-	-	-	-	
Transport Upstream	<1	<1	<1	<1	-	-	-	-	-	
Waste	<1	<1	<1	<1	-	-	-	-	-	
Business Travel	8	8	<1	<1	-	-	-	-	-	
Commuting	24	24	<1	<1	-	-	-	-	-	
Capital Goods	-	-	-	-	-	-	-	-	-	
Downstream	-	-	-	-	-	-	-	-	-	
Transport Downstream	-	-	-	-	-	-	-	-	-	
End-of-life of Product	-	-	-	-	-	-	-	-	-	
Use of Product	-	-	-	-	-	-	-	-	-	
Total GHG emissions	196	152	36	3	1	-	4	<1	-	

* This column contains all entries for which a further split in GHGs is not known.
The total emissions in this report include electricity emissions using the location-based method.

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*Please note that some sat nav systems may take you to the Gog Magog Golf Club on the other side of the roundabout.