

Renishaw Greenhouse Gas Report – FY2023

Introduction to our GHG report

Renishaw is a world-leading precision technology business that provides manufacturing technologies, analytical instruments and medical devices operating across 65 locations in 35 countries.

We committed as a business in November 2021 to achieving these Net Zero GHG emission targets against our FY2020 baseline year:

- Achieve Net Zero Scope 1 and 2 emissions by 2028;
- Achieve a 50% reduction in Scope 3 emissions by 2030; and
- Achieve Net Zero across all scopes by 2050 at the latest

This report contains Renishaw plc's Greenhouse Gas Inventory, hereinafter GHG, for our FY2023 (July 1st 2022 – June 30th 2023) with the following considerations:

- It includes emissions from the activities of the entire Renishaw group including all our subsidiaries and associate companies.
- The greenhouse gases considered are CO₂, SF₆, CH₄, N₂O and CFC's.

The Sustainability Team within Renishaw plc is the team responsible for drafting this report. This is the first GHG report that has been externally audited against the ISO14064-1:2019 standard but Renishaw have been reporting on GHG emissions in our Annual Report's since 2010.

The report has been prepared in accordance with the requirements established in BS EN ISO 14064-1:2019 :“Greenhouse gases. Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals”.

The Greenhouse Gas inventory was verified using a limited assurance engagement.

This report is intended to be read by interested stakeholders such as investors, employees who are seeking assurance that our GHG data and methodologies are adequately supporting us in achieving our Net Zero targets. This report will be referred to in our FY2023 Annual Report for Renishaw plc and also shared publicly on our website.

Organisational boundary

The consolidation of GHG emissions at Renishaw is tackled from an operational control approach.

Scope 1 & 2 data is collected from our global operations monthly and reported into the central Sustainability Team. We aim to collect 100% data from the following locations:

- Wholly owned operations and subsidiaries;
- majority owned jointly controlled entities and associates (where we have an equity stake of ≥ 51%) and;
- minority owned jointly controlled entities and associates (where we have an equity stake of ≤ 50%), only if we have management control.

Reporting boundaries

In this report the greenhouse gases considered are:

- CO₂ (Emissions from fixed and mobile combustion)
- SF₆ (Fugitive emissions expressed as tCO₂e)
- CH₄ (Fugitive emissions and those associated with fuel consumption expressed as tCO₂e)
- N₂O (Emissions associated with fuel consumption expressed as tCO₂e)
- CFC's (Fugitive emissions of refrigerant gases expressed in tCO₂e)

- NF3 gas is not considered, as it is not part of Renishaw's processes.

Renishaw defines the scope of its direct and indirect emissions for operations undertaken within the limits of the organisation, with the GHGs classified in accordance with BS EN ISO 14064-1:2019.

Direct GHG emissions (Category 1)

Direct GHG emissions are from GHG sources owned or controlled by the company.

- Stationary combustion emissions:
 - CO2 emissions from the combustion of fuels in buildings or facilities, from heating equipment or generators.
 - Methane (CH4) and nitrous oxide (N2O) emissions associated with the combustion of any type of fuel.
- Emissions from mobile combustion, we considered our owned or leased vehicles.
- Direct fugitive emissions in anthropogenic systems:
 - From refrigerant gases (CFCs) from air-conditioning equipment.

Indirect GHG emissions (Category 1)

These emissions are an indirect consequence of the organisation's activities, but which are generated in sources that are owned or controlled by the organisation. We have reported these as a separate line item in Category 1.

Indirect GHG emissions due to imported energy (Category 2)

Indirect GHG emissions are those from electricity, heat or steam consumed by the organisation and provided by third parties. Other indirect emissions associated with electricity generation are also included in this section.

- Emissions associated with electricity consumption in Group buildings
- Emissions associated with the generation of heat through district heating.
- Emissions associated with network losses in the transport or distribution of electricity, for the activity of transport and distribution of electricity, emissions are calculated considering electricity losses as imported energy.

Indirect GHG emissions due to transport (Category 3)

- Emissions associated with upstream transportation by our logistics providers.
- Emissions associated with employee business travel.
- Emissions associated with commuting (transport of employees from their place of work to their residence).

Indirect emissions from products used by organisation (Category 4)

- Emissions associated with purchased goods and services.
- Emissions associated with purchased capital goods.
- Emissions associated with waste.
- Emissions associated with upstream leased assets.

Indirect emissions associated with use of products (Category 5)

- Emissions associated from our downstream leased assets.
- Emissions associated with our associate companies.

Exclusions

- We have excluded downstream transport as much of our transportation is captured in upstream transport. We believe that downstream transport accounts for less than 1% of our total GHG emissions and is therefore deemed immaterial in alignment with our GHG materiality definitions.
- We have excluded emissions associated with our products in use and end of life / disposal as we are not confident in the methods used to calculate these emissions. These emissions are particularly difficult to quantify as we sell tens of thousands of unique products across a vast range of sectors and geographies. Our initial estimates for these emission sources suggest that they will account for a large part of our Scope 3 emissions. This is also why we want to take more time before disclosing these emissions to ensure our calculations methods are complete, consistent, accurate and transparent.

Baseline year

The baseline year for Renishaw's GHG data and targets is FY2020. The data for Scope 1, 2 and 3 is located in this document under the heading "Base year GHG inventory (FY20)".

We selected FY2020 (July 1st 2019 – June 30th 2020) as our baseline year as this was a year that hadn't been overly affected by COVID lockdowns. In 2021, we were also deciding as a business what to set as our Net Zero targets and wanted to set them using the most recent and reliable GHG data we had available which was FY2020. We are also submitting our targets to be verified by the Science-Based Targets initiative and are using FY20 as a baseline in that process too.

As part of this assurance process, we have discovered data errors and required changes to our calculation methodologies. These have been corrected / introduced across all our GHG data back to our baseline year.

- Reclassifying 24 sites from Scope 1 and 2 to Scope 3 upstream leased assets as we have no operational control at these locations.
- Updating our megajoule to kgCO₂e conversion factors using the latest DEFRA conversion factors back to baseline year.
- Reclassifying downstream transport emissions as upstream transport based on a better understanding of the differences between both categories.

What we define are material changes to emissions that would require us to re-baseline is defined in the materiality section of the quantification methods section.

Uncertainty assessment

We have estimated the uncertainty of the emissions categories disclosed by assessing the amount of primary data (as defined by the GHG Protocol) we have used to calculate these emissions. The scoring system we use is as follows:

A = 90 - 100% primary data used to quantify emissions category

B = 70 - 90% primary data used to quantify emissions category

C = 50- 70% primary data used to quantify emissions category

D = 30 - 50% primary data used to quantify emissions category

E = 0 - 30% primary data used to quantify emissions category

Our definition of primary data is taken from the GHG Protocol and is "data from specific activities within a company's value chain. Primary data also includes data provided by suppliers or others that directly relate to specific activities in the reporting company's value chain."

We define secondary data in line with the GHG Protocol and is “data including industry-average-data (e.g., from published databases, government statistics, literature studies, and industry associations), financial data, proxy data, and other generic data.”

We have screened our emissions to prioritise future primary data collection and are planning on improving the certainty in our data by engaging with our value chain. In particular, we will focus those suppliers who are contributing significantly to emissions from purchased goods and services and capital goods.

FY2023 GHG Inventory – direct GHG emissions

		GWP (tCO2e)	Carbon dioxide (CO2)	Methane (CH4)	Nitrous oxide (N2O)	Hydrofluorocarbons (weighted average) (HFCs)	Perfluorocarbons (weighted average) (PFCs)	Sulfur hexafluoride (SF6)	Nitrogen trifluoride (NF3)	Qualitative uncertainty
Category 1: Direct GHG emission in tonnes										
1.1	Direct emissions from stationary combustion	1594	1588.77	0.16	0.00461	0	0	0	0	A
1.2	Direct emissions from mobile combustion	2474	2446.25	2.922423669	24.5668176	0	0	0	0	A
1.3	Direct fugitive emissions from the release of greenhouse gases in anthropogenic systems	109								A

FY2023 GHG Inventory – indirect GHG emissions

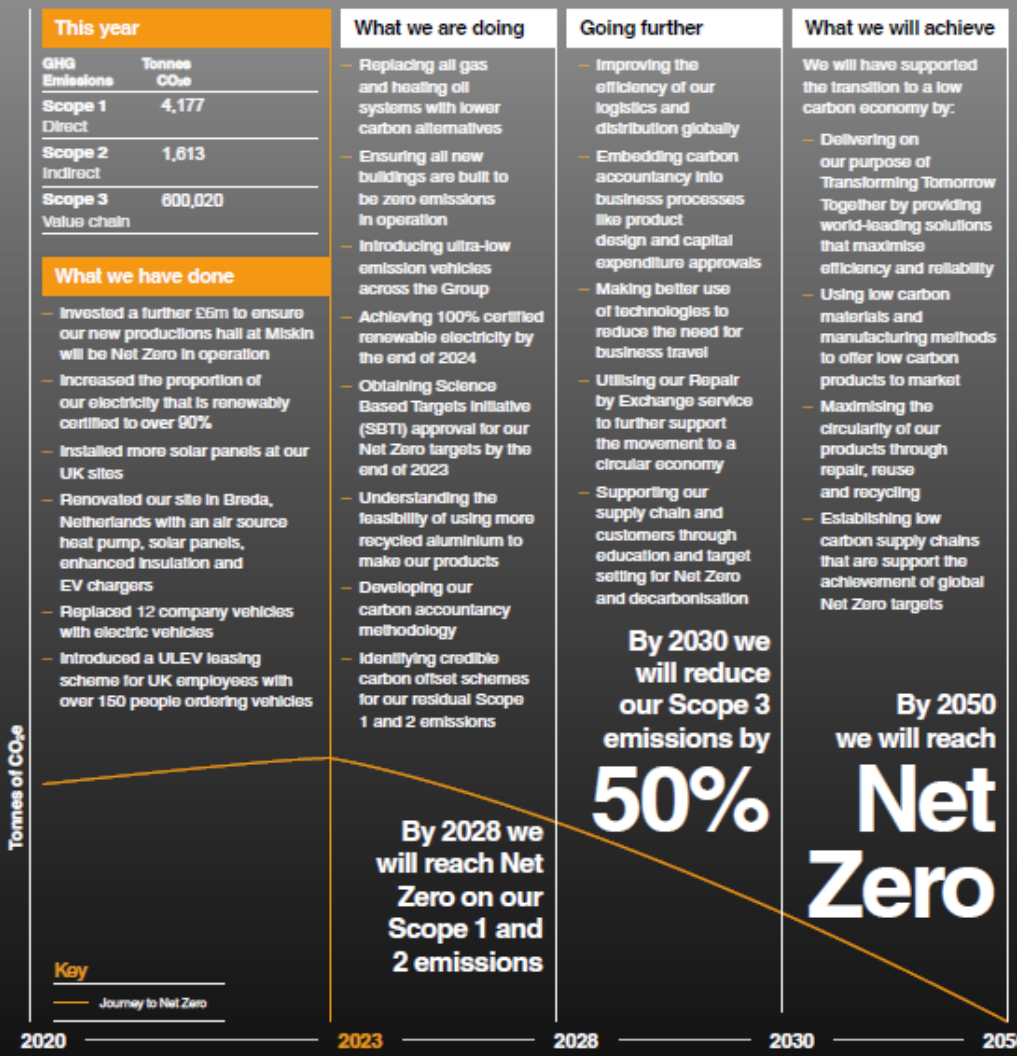
	Notes	GWP (tCO ₂ e)	Qualitative uncertainty
Indirect GHG in tonnes CO₂e			
2 Category 2: Indirect GHG emissions from imported energy			
2.1 Indirect emissions from imported electricity (market)		1610	A
2.2 Indirect emissions from imported electricity (location)		8371	A
2.3 Indirect emissions from imported energy		3	A
2.4 Indirect emissions from energy-related activities		2584	A
3 Category 3: Indirect GHG emissions from transportation			
3.1 Emissions from Upstream transport and distribution of goods		6512	B
3.2 Emissions from Downstream transport and distribution of goods	NS*		
3.3 Emissions from Employee commuting and WFH		6969	C
3.4 Emissions from business travel		2134	A
4 Category 4: Indirect emissions from products used by organisation			
4.1 Emissions from purchased goods and services		443892	E
4.2 Emissions from capital goods		136103	E
4.3 Emissions from disposal of waste		247	B
4.4 Emissions from upstream leased assets		313	A
5 Category 5: Indirect GHG emissions associated			
5.1 Emissions from use stage of the product	NS*		
5.2 Emissions from downstream leased assets		150	A
5.3 Emissions from end of life stage of the product	NS*		
5.4 Emissions from investments		181	C
6 Category 6: Indirect emissions from other sources			
6.1 Indirect emissions from fuel-related activities		935	A
Total emissions in tonnes CO₂e			
Total direct and indirect emissions (market-based)		605810	
Total direct and indirect emissions (location-based)		612570	
Renewables			
Total renewables purchased in mWh		33253	A
Renewable electricity purchase in mWh with contractual instruments compliant with ISO 14043-1 Annex E		33253	A
Removals			
Direct removals in tonnes CO ₂ e		0	
Storage			
Total storage as of year end in tonnes CO ₂ e		0	
Other relevant information			
*NS = emissions not stated - see exclusions for more information			

GHG reduction initiatives and Net Zero plan

We are

committed to Net Zero

Our purpose is to Transform Tomorrow Together which includes supporting the transition to a low carbon future. Our transition plan establishes our approach to achieving Net Zero in our own operations and how we are supporting decarbonisation with our supply chain and customers.



Base year GHG inventory (FY20)

FY2020 Emissions	tCO ₂ e
Scope 1	4,027
Scope 2 (market-based)	3,507
Scope 2 (location based)	9,348
Scope 3	
1. Purchased goods and services	157,718
2. Capital goods	38,779
3. Fuel and energy related activities (not included in Scope 1 or Scope 2)	3,858
4. Upstream transportation and distribution	8,446
5. Waste generated in operations	111
6. Business travel	2,401
7. Employee commuting	4,868
8. Upstream leased assets	303
9. Downstream transport and distribution	-
10. Processing of sold products	-
11. Use of sold products	-
12. End-of-life treatment of sold products	-
13. Downstream leased assets	23
14. Franchises	-
15. Investments	102
Total GHG emissions tCO ₂ e	233,491

Quantification methods

Background

Renishaw has been reporting key sustainability metrics for several years. Over the years our reporting methodology has evolved to become more robust and has had an increasing scope to enable the capture of all Scope 1 & 2 data and those emissions in Scope 3 related to other activities along the value chain. In FY23 we made a step change and completed a more complete assessment of our Scope 3 data using a hybrid approach.

This document has been collated to reflect the requirements in BS EN ISO 14064-1:2019 : “Greenhouse gases. Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals”, supporting guidance and the requirements set out in the GHG Protocol Corporate Accounting and Reporting Standard, the GHG Protocol Scope 2 Guidance and the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard and how these have been implemented within Renishaw and its sustainability reporting.

Materiality

Materiality is considered at an emissions sources level, and any data errors which have a 3% or greater impact on the emissions category it is reported in will be restated.

Any error in data in an individual emissions sources that has greater than a 1% impact to the total GHG emissions is considered material and will be restated.

All data reported in the incorrect emissions sources will be considered material and restated regardless of the overall impact of the error on the individual emission sources or the total GHG emissions.

Any other errors that in the opinion of Renishaw or its auditors or external advisors could change the view of Renishaw and its performance against its stated objectives will be considered material and restated.

Organisational Boundary

Scope 1&2 data is collected from our global operations monthly and reported into the central Sustainability Team. We aim to collect 100% data from the following locations:

- Wholly owned operations and subsidiaries;
- majority owned jointly controlled entities and associates (where we have an equity stake of ≥ 51%) and;
- minority owned jointly controlled entities and associates (where we have an equity stake of ≤ 50%), only if we have management control

Treatment of acquisitions and divestments

Acquisitions – Steps are taken to integrate the acquired entity into our data collections within the first year following the acquisition. The aim is for the location to be fully integrated from the first full year of reporting following the acquisition.

Divestments – Divested locations are excluded from further reporting of data, unless they meet the criteria set out in Organisational Boundary section above and are a part divestment. Historical data from the divested location is excluded from our consolidated metrics. Where this has a material impact, ≤ 1% of the total greenhouse gas emissions (GHG) disclosure then the affected data will be re-stated. Total GHG emissions include statutory and voluntary GHG emissions.

Reporting Period

The reporting period for our sustainability data is the same as our financial reporting period, namely, 1st July through to the 30th June.

The collection of scope 1&2 data and the timing of receipt of that data means it is not always possible to provide complete data within the reporting timeframe. Where this is the case then data is collected for the period 1st July through to 31st May inclusive.

For the June data we calculate the average of the previous three months and report the figure for June as per the equation below.

Example equation used to calculate June data for the ARA deadlines.

$$\frac{\text{Total for March} + \text{Total for April} + \text{Total for May}}{3} = \text{Calculated Total for June}$$

There may be times when other data is missing, for a variety of reasons, to calculate any other missing data, we take an average of the previous three months for that month. An example calculation for missing data from May 19 is given below.

$$\frac{\text{Feb 19} + \text{Mar 19} + \text{Apr 19}}{3} = \text{Calculated total for May 19}$$

There are exceptions to the averaging methodology for some data. Waste data is often not reportable on a monthly basis so a full 11 months of waste data for a site is averaged to estimate the sites June's waste.

F-gases are also not subject to averaging as this data is often a 'one-off' input within a reporting period.

When averages have been used to compile the data for the annual report using the methods described above, it would be expected to replace the averages with 'real' data, where real data can be obtained. Where the replacement of averaged data with real data makes a material difference to the total emissions from that emission source then the data will be restated within the next year's

annual report, if the real data does not make a material difference to the emissions from that source then no re-statement is needed. ¹

Data Collection and Consolidation Methodology

Each Renishaw Location is expected to report the required data quarterly or more frequently. The data must be reported on a monthly basis or at the frequency of their bills / invoices which covers emissions categories.

This data is reported into the central repository for sustainability data, SCCS as per the requirements set out in CSR002.

Some data is inputted directly into SCCS by the central sustainability team where it is deemed most practical to do so.

In brief, energy, fuel, water, km's travelled on planes and trains, refrigerant quantities used for recharging and waste quantities are all reported using SCCS. The UK energy data is managed by the Renishaw facilities team.

The UK flight data is reported through Wotton Travel, the nominated Renishaw travel agency and entered into SCCS by the central Sustainability Team.

Some of the smallest Renishaw Locations (e.g. locations with five or fewer staff) do not currently have access to all relevant sustainability data. Wherever possible, they shall attempt to generate site-specific data. There are times when this data is not available, if there is a sufficient data set to create a Renishaw specific average for these emissions categories that is then applied to these smaller sites, if there isn't then using the de-minimums rule this data is then omitted. Historically some sites data were combined and reported together, this is being phased out as an approach and each Renishaw Location is reporting individual data. However home-based workers emissions are reported under the geographical location they report into, i.e. home based workers in Portugal report their business GHG emissions through the Barcelona site.

Measurement Unit

SCCS allows data to be entered in a variety of units that are most suitable for the specific metric and geographical location of the site. Typical units include kilogrammes, pounds, tons, tons (US) and tonnes for weight; US gallons, gallons, litres, cubic metres and cubic yards for volume and kilowatt-hours, therms, mega-joules and British Thermal Units for energy.

These figures are then converted to common units (kilogrammes, tonnes, litres and kilowatt-hours) using internationally recognised unit conversion factors held in SCCS.

Greenhouse Gas Emissions

We calculate the amount of greenhouse gas emissions for the reporting period from all our Renishaw locations, as laid out in the Organisational Boundary section of the GHG Protocol. For statutory and voluntary reporting, it is expressed as an absolute amount in tonnes of carbon dioxide equivalent (tCO_{2e}). We also separately report the emissions from all our Renishaw locations, as an intensity in tonnes of carbon dioxide equivalent per £m turnover (tCO_{2e}/£m). Our reported emissions cover Scopes 1, 2 & 3 as defined under in 'The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)'

¹ 'Real data' is data that has come from invoices, meter readings, bills etc. rather than data that has been calculated or estimated, whilst we recognise that bill scan be estimated it is considered best available data.

Scope 1 and 2

The emissions sources identified for Scope 1 in Renishaw are the following:

- Natural gas
- Owned Transport
 - volume of fuel (petrol or diesel) purchased, or
 - distance travelled, or
 - amount spent on fuel
- Generator Diesel
- Heating Oil
- Fugitive Emissions

The emissions sources identified for Scope 2 in Renishaw are the following:

- Electricity
- District heating

Each Renishaw location enters activity data within these categories.

Natural Gas

The amount consumed into SCCS, this is either taken from a meter reading or the utility bills provided by the natural gas supplier.

Owned Transport

We capture the amount of petrol and diesel used in both company owned or leased vehicles. Either the volume of fuel purchased is recorded or the amount of money spent on fuel is used. If the amount of money spent on fuel is used then this is divided by the average fuel price in the country it was purchased in to calculate a fuel quantity using the following equation.

$$\frac{\text{Total amount spent on fuel, in local currency}}{\text{Average price, per litre of fuel, within the relevant territory}} = \text{Amount of fuel purchased in litres}$$

If the amount of fuel purchased isn't available it is also possible for a site to capture the distance driven, and this is entered SCCS.

If the type of fuel is not known, it use DEFRA unknown fuel conversion factors.

N.B. if we pay for private fuel used in a company owned vehicle we also include this in these calculations.

Generator Diesel

The volume of diesel purchased or consumed by the generators is entered into SCCS, it is classed as 100% spirit diesel with no biofuel additive into it.

Heating Oil

Volume of heating oil purchased or consumed is entered into SCCS, it is classed as kerosene.

Fugitive Emissions

Sites that have air conditioning units they have operational control over. Operational control means they are responsible for organising and/or paying for maintenance and service of the air conditioning.

Sites input quantities of refrigerants into SCCS and this is aggregated and then inputted into the tool Calculating HFC and PFC Emissions from the Manufacturing, Servicing, and/or Disposal of Refrigeration and Air-Conditioning Equipment Calculation Worksheets (Version 1.0) produced by the GHG Protocol (internally we call this; Refrigerant GHG Spreadsheet) this sheet totals the annual global data and gives us GHG footprint of the gases used

Electricity

Electricity consumption is input into SCCS, this is either taken from a meter reading or the utility bills provided by the electricity supplier.

District heating

District heating consumption is input into SCCS, this is either taken from a meter reading or the utility bills provided by the electricity supplier.

Scope 1 & 2 conversion into tCO₂e

We take the energy, fuel and transport data and convert the energy and fuel consumed and the refrigerants used through the application of recognised emission conversion factors. This is undertaken centrally but on a site-by-site basis prior to consolidation. The methodology used during the conversion is outlined in 'The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)'. For reporting purposes, the results are subsequently converted to tonnes of CO₂e.

The emission conversion factors are taken from the latest version of internationally recognised sources, namely:

- The latest IPCC's GWP 100 years horizon factors
- BEIS (Formerly DEFRA)
- GHG Protocol
- Electricity suppliers
- Renishaw locations may suggest more accurate emission conversion factors taken from their respective country's National Inventory Report or provided to them by their National Government/Agency/Regulator.

The overarching principle around the selection of the most appropriate conversion factor to use in the calculation is the determination of the most accurate figure for greenhouse gas emissions for a location or territory, if there is a discrepancy the conversion factor which will give the highest CO₂e figure is used to avoid underreporting.

Our GHG emissions are calculated for each of the seven main Kyoto Protocol gases, these being;

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃) – is not considered as not part of Renishaw processes

The carbon equivalent of each of these gases is calculated and the totals are combined to produce a CO₂e figure for each of the emissions sources across the globe.

Emission factors for a year may be updated in subsequent years. In such cases historical figures are recalculated each year using the latest available factors. Where this results in a material change to the reported figures then it will be restated.

We collate electricity consumption figures so we can calculate the 'Market Based' GHG emissions from the electricity we purchase as well as the 'Location Based' GHG emissions. In the UK we use supplier specific emissions factors, across Europe we use Residual Grid emissions factors, and elsewhere we use the Grid Average Emission factors unless we can find more accurate factors. This allows us to produce both a Location Based and a Market Based GHG emissions for electricity purchased.

Libraries of these factors are maintained in SCCS. Below is an extract of the GWP emission factors used to calculate our GHG emissions:

Position	Description	Scope	Impact profile	Factor		Library
2.01	Heating oil	1	Other kerosene (direct)	0.0723288	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	GHG Protocol/IE A v17 (04/2022) - eGRID2020
2.02	Generator Diesel	1	Gas/Diesel oil (direct)	0.0745288	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	GHG Protocol/IE A v17 (04/2022) - eGRID2020
2.03	Natural Gas	1	Natural gas (direct)	0.0562548	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	GHG Protocol/IE A v17 (04/2022) - eGRID2020
3.01	Diesel for Renishaw-owned/leased vehicles	1	Diesel (average biofuel blend) (Net CV basis) (direct)	0.07119722 2	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	Defra v11 (09/2022)
3.02	Petrol for Renishaw-owned/leased vehicles	1	Petrol (average biofuel blend) (Net CV basis) (direct)	0.06655833 3	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	Defra v11 (09/2022)
3.03	Distance driven in Renishaw-owned/leased vehicle use when fuel is NOT known: business journeys (excluding commuting)	1	Average car (unknown fuel) (direct)	0.00017067	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	Defra v11 (09/2022)
3.04	Distance driven in Renishaw-owned/leased petrol	1	Average petrol car (direct)	0.00017048	GHG Prot: GWP (Global Warming Potential,	Defra v11 (09/2022)

	vehicles when volume of fuel is not known: business journeys (excluding commuting)				100 years) [kg CO2e]	
3.05	Distance driven in Renishaw-owned/leased diesel vehicles when volume of fuel is not known: business journeys (excluding commuting)	1	Average diesel car (direct)	0.00017082	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	Defra v11 (09/2022)
3.06	Distance driven in Renishaw-owned/leased electric vehicles when volume of fuel is not known: business journeys (excluding commuting)	1	Car - Average car - Battery Electric - UK electricity for Evs (distance) (direct)	0.00004709	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	Defra v11 (09/2022)
2.06	District heating	2	EU-28: District heating mix (direct) Sphera	0.059924944	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e]	GaBi v14 (12/2021)

Grid Mix (2.04) and Renewable Purchased (2.05) Location-based

For location-based emissions (both grid mix and renewable purchased), the GHG Protocol library is used in all cases except the UK, where the DEFRA library is used.

All countries except UK and USA	Electricity [COUNTRY] (Total) (direct)	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e] or GHG Protocol/IEA v17 (04/2022) - eGRID2020
For sites based in the USA, state specific factors are used	[STATE CODE] - [STATE] (direct)	GHG Prot: GWP (Global Warming Potential, 100 years) [kg CO2e] or GHG Protocol/IEA v17 (04/2022) - eGRID2020

For all sites based in the UK, the DEFRA library is used	Electricity generated (direct)	Defra v11 (09/2022)

Grid Mix (2.04) Market-based

For market-based emissions (grid mix) supplier specific emission factors are applied to UK sites. These are updated annually based on the suppliers' fuel mix declarations. For all other countries, Sphera's Residual Mixes 10.0 (12/2022) is used if a profile is available for the country in question. In the absence of a residual profile, the GHG Protocol (direct) profile is used (duplicating the location based profile).

Scope 3

Category 1 Purchased Goods and services and Category 2 Capital Goods

Data is taken from our financial systems and cleansed via the process as show in Figure 1 below.

Uncategorised spend (accounting for 4% of total spend) was classified as GHG category 'other' in the Quantis Tool.

Spend data was required to be input into Quantis in USD so we averaged Renishaw's GBP to USD exchange rate across the reporting period to obtain a single exchange rate for this reporting.

Category 3 Fuel and energy related activities (not included in scope 1 or scope 2)

This is calculated in SCCS, using the consumption figures of energy and fuel in scopes 1 & 2, a scope 3 factor is applied to each consumption figure.

Category 4 Upstream transportation and distribution

Our major logistics partners provide us with a tCO_{2e} figure for the services they provide us, this is accessible either via an online portal found at [http://www.expeditors.com/ \(Expeditors\)](http://www.expeditors.com/), or from annual reports (UPS and DHL and other smaller providers) this data is calculated by these suppliers according to 'The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)'.

Category 5 Waste generated in operations

We collect the amount of waste arising from Renishaw locations across the world. It is expressed as an absolute amount in tonne. This includes production waste, both solid and liquid and hazardous and non-hazardous wastes that is sent off site for recycling, recovery or disposal, it includes catering waste, demolition/construction waste, where we are the project managers of the work, and it includes the disposal of surplus equipment if disposed of through our waste channels. Our UK Waste is reported through monthly reports from our two major waste contractors and this data is then entered into SCCS.

Other sites, outside of the UK, report their waste by weight using SCCS where the data is available to them. There are a number of sites where the waste data is not available, and we calculate an average per FTE of waste using comparable sites and use this to calculate a waste figure for sites without data.

This data is collected on a site-by-site basis and is recorded and calculated when necessary as per the rules in the Reporting Period above.

We calculate the percentage of waste that is produced by our facilities that is subsequently recycled as a percentage of total waste. Recycling is defined as the reprocessing of waste materials into products, materials or substances whether for the original or other purposes, for example, glass, metals, plastics, paper. For our reporting purposes we include recovery with our recycling figures, recovery is defined as incineration, incineration for energy recovery, composting, anaerobic digestion and the reprocessing of materials to be used as fuels or for backfilling operations.

The landfill rate is calculated as follows:

$$\frac{\text{total amount of waste sent to landfill}}{\text{total waste}}$$

Category 6 Business Travel

We capture the number of passenger kilometres (Pkm) for our rail and plane travel.

To capture this data we obtain the dates, passenger class and the departure & arrivals airports, this is entered into SCCS and it uses the airport codes to calculate the number of Pkm between the departure and arrival airports.

Flights are categorised into the following to enable the correct GHG conversion factors to be used:

Short = less than 463km

Medium = between 463km and 1108km

Long = more than 1108km

Category 7 WFH Emissions & Employee Commuting

Using data collected from our global HR system (WorkDay) we use the EcoAct/Carbon Clear whitepaper methodology to calculate employee commuting and WFH emissions, this is based on a subset of data and is extrapolated across the group using FTE as the base unit.

Category 8 Upstream leased assets

We collect the primary data from these sites in SCCS, this data being the energy used for the functioning of the site, we then flag the sites in SCCS as upstream leased assets and report it within this category.

We use the same collection methodology as we do for collecting scope 1&2 data (see the relevant sections for more detail)

Category 9 Downstream transportation and distribution

We don't believe this is material as the majority of our shipments are done under our control and therefore sit in Category 4.

Category 10 Processing of sold products

We do not do any processing of sold products as defined by the GHG Protocol

Category 11 Use of sold products and Category 12 End-of-life treatment of sold products

We have excluded emissions associated with our products in use and end of life / disposal as we are not confident in the methods used to calculate these emissions. These emissions are particularly difficult to quantify as we sell tens of thousands of unique products across a vast range of sectors and geographies. Our initial estimates for these emission sources suggest that they will account for a large part of our Scope 3 emissions. This is also why we want to take more time before disclosing these emissions to ensure our calculations methods are complete, consistent, accurate and transparent.

Category 13 Downstream leased assets

We have a site in the UK (Stone) and ULEV vehicles we lease to employees under a salary sacrifice scheme.

The sites scope 1 & 2 data is collected via and the GHG emissions are calculated using relevant in country GHG emissions factors.

The ULEV vehicles we lease to employees have estimated annual milage figures that employees will submit when leasing the car. We have assumed that they drive all of these miles and as all the leased cars are in the UK we have used DEFRA conversions factors to estimate the yearly emissions for the ULEV vehicles.

Category 14 Franchises

We have no franchises and so this category is not relevant.

Category 15 Investments

Businesses we have investments in report their scope 1 & 2 data to us. This data is reported in this category, is collected and calculated into GHG emissions as per the relevant scopes 1 & 2 categories. The amount of GHG emissions reported for these sites is reported as a percentage of their total emissions in line with our voting rights for the companies.

Figure 1 – Scope 3 - Category 1 and 2 methodology

