Basis of reporting 2024: environmental data

GSK report against the following metrics for all sites under operational control as defined in our organisational boundary approach. Our reporting period covers 1 January to 31 December. GSK use December prior year as a proxy for December current year where data is not available. GSK's baseline year for its environmental targets is 2020.

These environmental metrics were selected from the materiality assessment completed in 2021 and our published targets towards our net zero and nature positive ambition where indicators are available.

Sub-metric	Scope
Absolute greenhouse gas emissions (GHG) from emissions (tCO_2e which is converted to thousand tonnes CO_2e for ease of reading)	
Scope 1	Emissions from onsite fuel use Emissions from sales force vehicles Fugitive emissions of fluorinated gases (refrigerant losses, propellant losses)
Scope 2	Generation of purchased electricity following both market and location-based accounting Generation of purchased heat/steam, cooling and compressed air
Scope 3	Category 1: Purchased goods and services Category 2: Capital goods Category 3: Fuel- and Energy-Related Activities (Transmission Losses) Category 4: Upstream Transportation and Distribution Category 5: Waste Generated in Operations Category 6: Business Travel Category 7: Employee commuting and working from home Category 11: Use of sold products Category 12: End of life Category 15: Investments
Scope 1 & 2 GHG emissions intensity from energy	
per £m revenue	
per full time equivalent (FTE)	
Energy (GWh)	
Total energy for Operations % Renewable electricity	Natural gas purchased, electricity used, exported electricity, coal, other fossil fuels, renewable heat, purchased heating and cooling, purchased non-renewable electricity, purchased renewable electricity, on-site renewably generated electricity. The amount of energy exported back to the grid is removed from this total.
Industrialisation of low GWP Metered Dose Inhalers	
Industrialisation of low GWP Metered Dose Inhalers initiated with clinical and non-clinical data available to support regulatory submissions	
% $MTCO_2$ of 2030 carbon credits volume in project pipeline	
Volume of carbon credits secured in the portfolio is as a percentage of GSK emissions value in 2030	
Water (recorded as m^3 and converted to million m^3)	
Total water use	Supplied water from municipal, ground water, and tankers. Water at high-risk sites and recycled sources
Total wastewater discharged	To municipal sewer, surface water, land and others
% Of GSK sites and suppliers' compliance with AMR and wastewater API limits	Predicted no effect concentration (PNEC) and Environmental Hazard Assessment Concentration (EHAC)
Waste (metric tonnes converted to thousand tonnes)	
Total waste generated	Total waste recovered via a circular route Total waste disposed via a non-circular route
% circular waste	% of waste generated going into circular route
Total hazardous waste	Total hazardous waste recovered via a circular route Total hazardous waste disposed via a non-circular route
Total non-hazardous waste	Total non-hazardous waste recovered via a circular route Total non-hazardous waste disposed via a non-circular route
Total waste incinerated	Total hazardous waste incinerated Total non-hazardous waste incinerated
Total waste to landfill	Total hazardous waste to landfill Total non-hazardous waste to landfill
Biodiversity and sustainable sourcing	
% of paper and palm oil certified	

Note: Calculation methodologies for reported metrics are in Appendix 1. Ozone-depleting substances (kg of CFC11e) are no longer reported on grounds of materiality. GSK have reduced our inventory of hydrochlorofluorocarbon (HCFC) refrigerants, which deplete the ozone layer, to below reportable levels. This inventory is expected to be eliminated within the next five years as remaining equipment containing HCFCs becomes obsolete.

Scope of reporting

Organisational boundary

Environmental data is collected for facilities owned or leased by GSK and its joint venture partners over which GSK has full operational control. Any facilities that are not managed or operated by GSK are not required to report. Divestments or site closures are removed from scope from the date of divestment or notification of ceasing routine operations. In alignment with the GHG Protocol, site closures are not retrospectively removed from the data. Acquisitions, as aligned with the reporting boundary, will come into scope the following year, after review and update of the controlled real estate database.

All GSK locations, either owned or leased, are required to report energy, water, and waste data if any of the following criteria are met:

- The total energy usage >4,750MWh per annum or
- the total water in is >10,000 m^3 per annum or
- total waste generated >250 tonnes per annum

In 2020, baseline year, GSK set a de minimis threshold to ensure over 95% of environmental impacts from energy, water and waste are reported. Annually, if this threshold is not met through individual site reported data, an estimate based on the next largest site's square footage will be added to the year-end total for the relevant environmental impacts.

Reporting standards and frameworks

GSK report a range of greenhouse gas emissions across Scope 1, 2 and 3, water, waste and materials and biodiversity indicators. GSK align to the Greenhouse Gas Protocol Corporate Standard for Scope 1 and 2 carbon emissions reporting[1,2]. For Scope 3 emissions GSK align to Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard[3]. Operational impacts such as energy, water use, wastewater, waste, and Scope 1&2 GHG emissions are reported at site level, except for the impact of the sales fleet which is an operational impact that is reported at a global level. GSK have identified key suppliers annually for reporting of Anti-Microbial Resistance (AMR) and Active Pharmaceutical Ingredients (API) wastewater impacts in the supply chain, which are listed in an internal definition document.

Emissions factors

GSK measures and reports emissions arising from four of the main greenhouse gases that contribute to climate change, namely carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons (HFCs). Perfluorocarbon (PFC) and Nitrogen trifluoride (NF_3) are excluded on the basis that GSK do not use PFCs or NF3. Emissions from the greenhouse gasses (SF_6) were evaluated in 2024 based on the number of fume hoods and considered not material and excluded for further reporting.

The effect of these emissions is reported as a single figure, carbon dioxide equivalent (CO_2e), which represents their combined global warming potential (GWP). To get a meaningful comparison between the GHG emissions, conversion factors are used to convert the quantities consumed into tonnes of carbon dioxide equivalent (tCO_2e). CO_2e is a measure for describing the impact of each different GHG in terms of the amount of carbon dioxide that would create the same amount of global warming. Emission factors are sourced from the following organisations for application across GSK. These are updated annually. Emission factor details are included in Appendix 2.

- The International Energy Agency annual GHG emission factors for world countries from electricity and heat generation
- UK Government conversion factors for company reporting of greenhouse gas emissions[4] published annually by the Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy (Abbreviated as 'BEIS' for the purpose of this report)
- International Panel on Climate Change (IPPC) 4th Assessment Report[5]
- Pre-2021 GHG Emissions from Transport or Mobile Sources
- From 2021 onwards individual vehicle fuel emissions factors are supplied by fleet management providers

Energy conversion factors

Fuel calorific factors are used to convert fuel data that is reported in volumetric or mass units by sites. These are taken from UK Government conversion factors for company reporting of greenhouse gas emissions[6] published annually by BEIS.

1 GHG Protocol Corporate Accounting and Reporting Standard 2015 edition, https://ghgprotocol.org/corporate-standard last accessed 15 May 2024

2 Scope 2 Guidance 2015 edition, https://ghgprotocol.org/scope_2_guidance last accessed 15 May 2024

3 Corporate Value Chain (Scope 3) Accounting and Reporting Standard 2011 edition https://ghgprotocol.org/standards/scope-3-standard last accessed 15 May 2024

4 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 15 May 2024

5 AR4 Climate Change 2007: The Physical Science Basis, table 2.14, P212, Chapter 2, Global warming potential for 100 year, https://www.ipcc.ch/assessment-report/ar4/, https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf last accessed 15 May 2024

6 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 15 May 2024

Data Management

Data Collection and Documentation

Data that forms the basis of reporting was obtained from financial reporting systems, accounts payable records, other internal records, outside sources such as fleet management companies, utilities providers, and proprietary databases. GSK sites within the reporting boundary report energy use, supplied water, waste, wastewater, non-energy related Scope 1 emissions data, selected Scope 3 emissions data, and selected water quality data into a single system. Data is entered or collated either monthly, quarterly or annually depending on the source information and detailed in the relevant metric calculation methodology. Source data used for environmental metrics comes from a variety of inputs such as utility invoices, meter readings, waste transfer notes, financial systems, supplier contracts, or site control systems.

Scope 3 greenhouse gas emissions data is collected one year in arrears, so data reported in the current reporting year is from the prior year, except for patient use of Metered Dose Inhalers which is calculated from production of MDIs in the calendar reporting year.

As with previous years, reported figures include estimates or assumptions where actual data is unavailable. Estimates are based on historical data, spend data or other proxies as identified in the calculation methodology (Appendix 1). Both actual and estimated data are reported according to the Data Standard – Sustainability Performance Indicators (SPI).

Data Changes and Governance

Environmental indicator fields have controls applied which trigger the need for a comment to be reported in the database if a tolerance of +/-25% is exceeded compared to the previously reported value. This control identifies gross input errors such as incorrect unit of measures being used, or to identify when a site has a maintenance shut down event. Reported data is verified to ensure it follows 'Data Standard – Sustainability Performance Indicators (SPI)'. While the description in this document is intended to be as accurate as possible, invariably the inventory will contain some exceptions to this reporting basis. This might also include sites in areas of operation where due to extenuating circumstances data is not fully available (such as conflict or natural disasters).

GSK will restate the baseline year 2020 emissions or subsequent years emissions data in the event of a material structural change such as the demerger of an entire business unit. Historic data is restated where material changes (defined as >5% of total reported environmental metric) are made due to data improvements (e.g., refined estimation or calculation methodologies). GSK will not restate the baseline or subsequent years for smaller changes such as the closure of a manufacturing site or the divestment of a brand of products, but commentary may be provided in the narrative.

Monthly dashboards of key indicators are shared with business unit sustainability leads and quarterly performance reviews at the GSK Sustainability Council. There are additional business unit Councils to review specific environmental metrics and performance plans. The overall GSK environmental governance is set out in the Annual Report.

Key terms

GSK refer to a series of terms across the ESG report to reflect the environmental ambition and direction.

Term	Definition
Net zero impact on climate	Net zero emissions means reducing Scope 1, 2 and 3 emissions as much as is practicable in line with climate science to maintain global temperature increases below 1.5°C, and then balancing the remaining residual emissions through carbon removal credits. GSK's carbon reduction plan is available on gsk.com
Contributing to a net positive world	Contributing to a nature positive world means reducing environmental impacts across freshwater, land, ocean, biodiversity, waste and materials and investing in nature protection and restoration. GSK nature plan is available on gsk.com
Water neutral	We define water neutrality using three criteria: achieving the Alliance for Water Stewardship Standard certification, reducing water use by 20% and by replenishing water quantity in the basin equivalent to the site's 2030 footprint
Zero operational waste	We define zero operational waste as a 20% reduction in operational waste and 100% operational waste circularity, including zero waste to landfill
Environmental impact reduction of products and packaging	GSK measures the aggregated impact of products and packaging on climate, nature and health following the Environmental Footprint (EF) method[1]
Waste reduction from supply chain	GSK measures its waste footprint in the supply chain, and the reduction of the latter, through application of third party provided, LCA-based wastage rates to the tonnages of materials purchased

1 https://environment.ec.europa.eu/news/environmental-footprint-methods-2021-12-16_en#:~:text=The%20Environmental%20Footprint%20methods%20measure%20and%20communicate%20about,scientifically%20sound%20assessment%20methods%20agreed%20at%20international%20level. (Last accessed 1 November 2024)

Climate Related Reporting

GSK sites report all purchased energy such as grid electricity, natural gas, diesel, other fuels, and on-site renewable energy such as hot water, electricity and heat generated from solar, wind or biomass into a central database in units of energy or volume. Data is reported by energy type based on invoice data or meter readings. Energy is converted into kWh for reporting purposes using fuel calorific values taken from the BEIS conversion factor set and embedded energy conversion factors.

Purchased renewable electricity is renewable electricity generated by a supplier that is purchased under a supply agreement that includes evidence of origin such as REC, REGOs or as part of a Power Purchase Agreement (PPA). Renewable heat is heat generated from the combustion of a biofuel such as wood biomass. Data is recorded and verified per the 'Data Standard – Sustainability Performance Indicators (SPI)'. Energy values are reported internally in kilowatt hours (kWh) and converted to GWh for external reporting, except where noted.

Scope 1 and 2 carbon emissions

Reported Metric and KPI	Definition and scope	Source and calculated methodology (converted to GWh for external reporting)
Natural gas purchased	Energy from the combustion of purchased natural gas	Natural gas consumption data is reported by sites in local units of energy (kWh, GJ, decatherm, mmBTU etc) or volume (m^3, HCF, CCF etc). Data reported in volumetric units are converted to kWh.
Other fossil fuels	Energy from the combustion of purchased diesel/light fuel oil, heavy fuel oil, LPG, and solvent use for onsite energy recovery	Diesel, fuel oil, LPG, and solvent (used for onsite energy recovery) consumption data is reported into GSK's reporting database by sites in local units of energy (kWh, GJ, dekatherm, mmBTU etc) or volume (l, m^3, HCF, CCF etc). Data reported in volumetric units are converted to kWh. Sites report the value based on one of the following single methods throughout the year: 1. Tank level readings 2. Flow meter readings or 3. Invoices It is assumed that diesel fuel purchased during the fiscal year is used that year. This method likely overestimates actual emissions in some years and underestimates them in others but, over time, captures the related emissions.
Biomass fuels	CH4 and NOx gases released during the combustion of biomass	Scope 1 carbon emissions from the combustion of biomass consider that methane and N2O are released during combustion. Emissions are calculated using emission factors for bioenergy taken from BEIS. This value is reported in CO2e.
Purchased renewable electricity	Purchased electricity where there is contractual evidence in place of renewably sourced electricity	Where there is contractual evidence showing that the electricity used at a site is supported by electricity attribute certificates or unbundled certificates like RECs (North America), Guarantees of Origin (Europe) and I-RECs (other regions), GSK mark the electricity as 100% renewable within its reporting database. Retirement dates of certificates of origin do not align with the calendar year so these are not used as evidence at the time of reporting. Electricity consumption data is recorded as per details in this document, below. Data is reported into GSK's reporting database by sites in local units of energy and then converted to kWh.
Purchased non-renewable electricity	Purchased electricity supplied from the grid with no market intervention to source renewable electricity	Where there is no contractual evidence showing that the electricity used at a site is renewable, GSK mark the electricity as 100% non-renewable within its reporting database. Data is reported into GSK's reporting database by sites in local units of energy and then converted to kWh.
On-site renewably generated electricity	Electricity generated on a GSK site from a renewable source	On site renewable electricity data is from: 1. on-site solar PV installations 2. on-site wind turbines 3. electricity generated in a combined heat and power plant that uses biogas as fuel. The biogas is generated in an on-site anaerobic digestion plant that treats fermentation waste Consumption data is measured by site metering systems recorded on a monthly or bi-monthly basis by local facilities management teams, such as photo evidence, screen shots of meter reading or logged in Excel spreadsheets.
Offsite renewably generated electricity	Electricity generated offsite from a renewable source with a direct connection to the site	Offsite solar energy generated adjacent to the facility but connected to the site for usage. This value is sourced under a Power Purchase Agreement (PPA).
Exported electricity	Electricity generated on a GSK site that is exported back to the grid	This is the surplus electricity generated by on-site facilities, where an export meter exists. The power returned to the grid is measured via a separate fiscal meter; the utility provider issues an 'Export Statement' detailing the kWh exported and GSK raises an invoice. Import and export transactions are separate. For 2023 this was by two sites Ware R&D from a gas-powered combined heat and power plant and the Irvine site from renewable sources that is returned to the grid. The energy exported was deducted from the total, but the gas emissions used in the CHP were included in the Scope 1 emissions total.

Reported Metric and KPI	Definition and scope	Source and calculated methodology (converted to GWh for external reporting)
Renewable heat	Heat generated on a GSK site from combustion of biomass	One site in the network has a biomass boiler installed. Energy data is based on invoices from the supplier of biomass wood briquettes. Samples of the briquettes are tested periodically for moisture content, calorific value and ash content to confirm that the calorific value is ~3600 kcal per kg which is the conversion factor used in the data reporting platform.
	Hot water from on-site solar installations	Two sites in the network generate hot water from on-site solar installations.
Purchased heating and cooling	Purchased steam, compressed air, and chilled water	Purchased steam, compressed air and chilled water is supplied and invoiced from local utility providers.
Electricity used	Calculation	This is calculated from the total values of – purchased renewable and non-renewable electricity – renewably generated electricity on site using solar PV – renewably generated electricity on site using Wind Turbines – renewably generated electricity on site from combustion of biogas – renewably generated electricity offsite from solar – minus excess electricity generated on site from either combustion of fossil fuels or generated on site from renewable sources
Energy for operations	Calculation	This is calculated from the total values of – purchased natural gas and other fossil fuels – purchased renewable and non-renewable electricity – renewably generated electricity on site using solar PV – renewably generated electricity on site using Wind Turbines – renewably generated electricity on site from combustion of biogas minus excess electricity generated on site from either combustion of fossil fuels or generated on site from renewable sources as detailed above. Electricity that is generated from fossil fuel combustion on site such as from combined heat and power plants or from diesel generators is not included in this calculation to avoid double counting of the source fuel.
% Renewably sourced electricity	Calculation	This is calculated from the sum of purchased renewable electricity and electricity from on-site solar, wind or biogas divided by the sum of all purchased electricity and electricity from on-site solar, wind or biogas. Purchased renewable electricity claims are aligned to RE100 Credible Claims guidance (2016)[1], and are reported as a percentage.

Biogenically derived emissions

Reported Metric and KPI	Definition and scope	Source and calculated methodology
Fermentation related emissions	CO_2 released during fermentation processes	CO_2 released during fermentation is calculated from measuring the concentration of CO_2 in off gas from the fermenter, the air flow, the duration of the fermentation batch and the number of batches manufactured during the year. The mass of CO_2 in kg is calculated on the basis that 44kg of CO_2 occupies 22.4m^3 at Standard Temperature and Pressure. This value is reported in CO_2e.

1 RE100 Making Credible Claims, 2016 https://www.there100.org/sites/re100/files/2021-02/RE100%20Making%20Credible%20Claims.pdf last accessed 15 May 2024

Scope 3 carbon emissions

GSK started reporting Scope 3 emissions data in 2015 across all categories and screening each category for materiality and against spend data for completeness. The Scope 3 model uses financial and other data systems. Scope 3 emissions data reported in 2023 is based on data from the year 2022. GSK updates its Scope 3 emissions annually using a hybrid model combining primary activity-based data and economic data from GSK's financial system. The Scope 3 emissions model was developed, and quality assured by the Carbon Trust, with an annual quality check review. Scope 3 carbon emissions are measured in CO_2 equivalence (CO_2e).

Reported Metric and KPI	Definition and scope	Source and calculated methodology
1. Purchased goods and services	The extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2 – 8	Emissions are calculated using a hybrid approach to evaluating the impacts of purchased goods and services, combining existing carbon footprint assessment data for raw materials where available with calculations using environmentally extended input-output (EEIO) emission factors for other areas of spend applied to data from GSK's financial systems. The carbon factors applied are from proprietary databases or completed footprint assessments.
2. Capital goods	The extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year	Emissions are calculated using EEIO emission factors and data from GSK's financial systems.
3. Fuel and energy related activities	a. Upstream emissions of purchased fuels b. Upstream emissions of purchased electricity c. Transmission and distribution (T&D) losses	Emission factors for upstream emissions and T&D losses are applied to fuel and energy consumption data as reported in GSK's reporting database which detail energy type (fuel, purchased renewable and non-renewable electricity) in kWh by site and country.
4. Transportation and distribution (upstream)	The emissions from the transportation and distribution of products purchased or acquired by GSK in the reporting year in vehicles and facilities not owned or operated by GSK, as well as other transportation and distribution services purchased by GSK in the reporting year (including both inbound and outbound logistics)	This category covers site to site logistics and outbound logistics to in-country distribution centres and are calculated using EEIO emission factors and data from GSK's financial systems.
5. Waste generated in operations	Disposal and treatment of waste generated in GSK's operations in the reporting year in facilities not owned or controlled by GSK	Emissions are calculated by applying proprietary emission factors provided by the Carbon Trust to the amounts of waste and materials generated and reported by GSK sites for the route of recovery or disposal of each waste stream.
6. Business travel	Transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company)	Emissions for air travel are calculated by applying emission factors from BEIS for individual air tickets accounting for distance (long haul, short haul) and class of air ticket (first, business, economy). Remaining impacts from business travel (hotels, surface travel – rail, car hire, taxis) are calculated using EEIO emission factors and data from GSK's financial systems.
7. Employee commuting	Transportation of employees between their homes and their worksites during the reporting year. This excludes Scope 1 related emissions from sales teams travelling to customer locations	Emissions are calculated by applying a commuting model developed by the Carbon Trust that models' different modes of transport and distances for staff to travel to a GSK site. The model is applied to the number of Full Time Employees (FTE) and Complementary Workers (CW) by country. Employee populations vary throughout the year. GSK use data generated in November as a representative sample for a calendar year.
8. Leased assets (upstream)	Emissions from the operation of assets leased by GSK in the reporting year and not included in Scope 1 & 2 emissions reports	Emissions of leased assets are covered by GSK's Scope 1 & 2 reporting (where above de-minimis threshold).
9. Transportation and distribution (downstream)	Emissions from transportation and distribution of products sold by GSK in the reporting year between GSK's operations and the end consumer in vehicles and facilities not owned or controlled by GSK	GSK have a model to estimate emissions based on product weights delivered to market and an estimate for the average distance travelled by road for products between an in-country distribution centre and the final retail outlet, pharmacy or clinic using emission factors from BEIS.
10. Processing of sold products	Emissions from the processing of intermediate products sold in the reporting year by downstream companies to GSK	This category is not applicable for GSK products.

Reported Metric and KPI	Definition and scope	Source and calculated methodology
11. Use of sold products	This category includes emissions from the use of goods and services sold by GSK in the reporting year. Two product categories are currently reported – direct emissions from the use of Metered Dose Inhalers by patients (propellant-based inhalers) and indirect emissions from the chilled storage of doses of GSK vaccines in clinics prior to being dispensed	GSK calculate direct emissions of HFA134a gas released from the use of Metered Dose Inhalers based on the fill weight of products leaving manufacturing sites for commercial supply, based on financial systems within GSK. The Global Warming Potential (GWP) impact is calculated using 100-year lifetime emission factor for HFA134a as per the International Panel on Climate Change (IPCC) 4th Assessment Report. The assumption is that all propellant contained in the inhaler will be released to atmosphere. GSK calculates indirect emissions for the chilled storage of vaccines in clinics before dispensing using a model developed by the Carbon Trust that uses the total number of doses of vaccines supplied to markets in the reporting year to estimate the energy used by refrigeration equipment in clinics.
12. End of life	Waste disposal and treatment of products sold by GSK (in the reporting year) at the end of their life	GSK calculate emissions for end of life using the quantities of packaging materials purchased for products and emission factors provided by the Carbon Trust for average waste treatment processes.
13. Leased assets (downstream)	This category includes emissions from the operation of assets that are owned by GSK and leased to other entities in the reporting year that are not already included in Scope 1 or Scope 2	GSK assessed this category and determined it is not material and therefore excluded from reporting in Scope 3 (as included in Scope 1 & 2 above the de-minimis threshold).
14. Franchises	This category includes emissions from the operation of franchises not included in Scope 1 or Scope 2	GSK do not operate franchises.
15. Investments	This category includes Scope 3 emissions associated with GSK's investments in the reporting year, not already included in Scope 1 or 2	GSK calculate emissions from investments applying EEIO emission factors to financial data for Investments in associates and joint ventures from GSK's financial system.

Industrialisation of low GWP Metered Dose Inhalers

Reported Metric and KPI	Source and calculated methodology
Complete clinical studies to enable filing of low carbon *Ventolin*	GSK monitors progress towards delivery of low carbon Ventolin MDI. Governance for this project is managed by existing R&D and commercial governance bodies using established governance and escalation routes. Completion is defined as achievement of the milestones set in the prior year for current year.

Percent MTCO2 of 2030 offsetting carbon credits in Project Pipeline

Reported Metric and KPI	Definition and scope	Source and calculated methodology
% of carbon credits volume	Calculation	GSK has committed to an 80% absolute reduction in greenhouse gas emissions from a 2020 baseline, across all scopes and investment in nature-based solutions for the remaining 20% of our footprint by 2030. The volume of carbon credits secured in the portfolio is a percentage of GSK's planned emissions value in 2030. This value is calculated by taking credits available and planned for retirement against 2030 emissions, divided by 20% of GSK's total emissions in 2020 (the residual).

Nature Related Reporting

Water

GSK sites report water supplied to GSK from municipal supply, taken from groundwater wells located on sites or supplied in tankers by third parties. Captured rainwater and recycled water are also measured and reported but not included in the 'total water supplied' calculation. GSK sites report wastewater sent to a municipal sewer, discharged to surface water after treatment on site, wastewater used for irrigation, and wastewater used to recharge aquifers. Waste solvents and aqueous waste are reported in the waste category. Water data is entered in local units of measure by sites and converted into m^3 for reporting purposes.

Water used in regions of high-water stress

GSK define a region of high-water stress as a region where there is a combined risk of high or very high across the three elements of Quantity, Quality and WASH (Water, Sanitisation and Hygiene) from the following tools: WRI Aqueduct Water Risk Atlas and WWF Water Risk Filter. This methodology was refreshed in 2020. If a site was classified as a high-water stress site under a previous methodology, it has not been removed from the data set. Water is reported in cubic metres (m^3).

Reported Metric and KPI	Definition and scope	Source and calculated methodology
Municipal	Fresh water supplied to GSK by a utility company through a mains supply	Municipal water is reported into GSK's reporting database by sites in local units of volume (m^3, litre, imperial gallon, US gallon) and converted to m^3 within the reporting database. Where utility invoices are not lined up directly to the start of a calendar month, these are recorded as invoiced. This method likely overestimates actual usage in some years and underestimates them in others but, over time, captures the related data.
Ground water	Fresh water taken from a borehole or well located on a GSK site	As no invoices are available for the supply of water from groundwater data is collected from on-site meter readings.
Tankers	Fresh water supplied to GSK in tankers by a utility company	Supply of water from tankers data is obtained from invoices provided by the supply company.
Total water use	Calculation	The total values of: – Water from municipal supply – Water from groundwater – Water supplied in tankers
Recycled water	Fresh recycled water supplied to GSK by a third party	Fresh recycled water is obtained from invoices provided by the supply company.
Water use at high water risk sites	This is total water use (as calculated above) for sites identified by GSK as a high-water risk site	A region of high-water stress is defined by GSK as a region where there is a combined risk of high or very high across the three elements of Quantity, Quality and WASH (Water, Sanitisation and Hygiene) from the following tools: WRI Aqueduct Water Risk Atlas[1] and WWF Water Risk Filter[2]. GSK mapped the geographic location of its sites against outputs from these tools to identify sites located in regions of high-water stress. These sites are: – Karachi F268, Pakistan – Karachi West Wharf, Pakistan – Korangi, Pakistan – Nashik, India The site in Boudouaou, Algeria was classed as a high-water risk site under a previous methodology and is included in the list of high-water risk sites.

1 https://www.wri.org/aqueduct last accessed 15 May 2024

2 https://waterriskfilter.org/ last accessed 15 May 2024

Reported Metric and KPI	Definition and scope	Source and calculated methodology
Wastewater	The total of wastewater sent to a municipal sewer, wastewater discharged to surface water after treatment on site, wastewater used for irrigation, wastewater used to recharge aquifers in accordance with local regulations. Liquid waste such as waste solvents that contain water are reported separately as waste. Sites are not mandated to report the following wastewater streams, in accordance with GRI Standard 303.[1] – Untreated domestic sewage (e.g., offices, toilets, showers, and canteen) that discharge directly to a municipal sewer and is typically not metered. – non-contaminated rainwater (storm waters) – Evaporative losses	Wastewater data is reported by sites based on available information, including invoice data from utility companies and waste handlers, meter readings, or a calculation based on water use in the absence of a meter. In the absence of available data, sites may also provide a conservative data estimate by reporting that wastewater is equal to reported incoming water. In some cases, these values will be higher than incoming water due to the inclusion of 'bio sludge' or additional treatment of rainwater to mitigate API emissions.

GSK compliance with AMR Alliance and Wastewater API limits

Reported Metric and KPI	Definition and scope	Source and calculated methodology
Metric 1 - Figure (%) from "% of GSK sites that are compliant with AMR Alliance and Wastewater API limits"	The scope includes GSK-owned sites involved in: – Primary/non-biologic API drug substance manufacturing – Secondary/drug product manufacturing containing these APIs – R&D operations where the maximum potential mass of API disposed to wastewater would result in an exceedance of the PNEC limit Out of scope: – Sites only packaging API products, posing negligible environmental discharge risk – Sites that manufacture or use biologic APIs, due to their biodegradability, low likelihood of environmental impact, and exemption from European Medicines Agency (EMA) Environmental Risk Assessment Guidelines (2006)	All relevant sites calculate the concentration of API in wastewater discharges based on internally sourced assumption of API volumes and water flow rates and record if it is below the Predicted No-Effect Concentration (PNEC or Environmental Hazard Assessment Calculation EHAC) that has been determined by GSK for APIs or by the AMR Industry Alliance discharge limits for antibiotics. The number of sites that meet this target (or have appropriate corrective plans in place) is recorded as a percentage of the total. Previous iterations of the above paragraph stated that sites measure the concentration of APIs in wastewater discharges and compare this to a specified concentration limit. This has been changed to state that compliance for non-antibiotic APIs is calculated based on internally generated assumptions which are compared to an internally derived concentration limit. For antibiotics, the concentration is calculated based on internally generated assumptions which are compared to AMR Industry Alliance discharge limits.

1 'GRI standard 303: Water and Effluents 2018' – https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/ (Please note: registration is needed to access the document) last accessed 15 May 2024

Reported Metric and KPI	Definition and scope	Source and calculated methodology
Metric 2 - Figure (%) from "% of supplier locations used by GSK that are compliant with AMR Alliance and Wastewater API limits"	The scope includes a subset of GSK key suppliers involved in: – Primary/non-biologic API drug substance manufacturing – Secondary/drug product manufacturing containing these APIs – R&D operations where the maximum potential mass of API disposed to wastewater would result in an exceedance of the PNEC limit Out of scope: – Sites only packaging API products, posing negligible environmental discharge risk – Sites that manufacture or use biologic APIs, due to their biodegradability, low likelihood of environmental impact, and exemption from European Medicines Agency (EMA) Environmental Risk Assessment Guidelines (2006)	A desktop assessment conducted by the supplier confirms the discharge levels of APIs at their sites with respect to the Predicted No-Effect Concentration (PNEC) HEAC limits established by GSK or the AMR Industry Alliance discharge limits for antibiotics. The percentage of sites that comply with these standards, or that have effective corrective action plans in place, is reported as a proportion of the total number of sites.
Metric- Combined % sites and supplier locations compliant with AMR alliance and wastewater API limits	The scope includes GSK-owned sites, and a subset of GSK key suppliers involved in: – Primary/non-biologic API drug substance manufacturing – Secondary/drug product manufacturing containing these APIs – R&D operations where the maximum potential mass of API disposed to wastewater would result in an exceedance of the PNEC limit Out of scope: – Sites only packaging API products, posing negligible environmental discharge risk – Sites that manufacture or use biologic APIs, due to their biodegradability, low likelihood of environmental impact, and exemption from European Medicines Agency (EMA) Environmental Risk Assessment Guidelines (2006)	The combined figure is an average of Metric 1 and Metric 2.

Water stewardship

Reported Metric and KPI	Definition and scope	Source and calculated methodology
% sites that have achieved good water stewardship	A site is considered to have achieved good water stewardship if meeting the threshold of 85% compliance with the requirements of the Global Standard for Water stewardship. All GSK sites above the reporting de minimis threshold are in scope, except for sites with a closure date announced	Sites complete a water stewardship risk assessment following the Assessment Protocol for Water Stewardship Compliance in the Technical Support Document Quantitative Assessment for Good Water Stewardship at major water using and/or wastewater discharging GSK sites. The site responses for each question are assessed. This is completed by the site, with business unit oversight and internal business monitoring.

Operational waste

GSK apply the term total waste and materials to all routine operational hazardous and non-hazardous waste generated on and leaving our sites. Non-routine waste such as construction and demolition or gardening waste are excluded.

Waste data is reported by sites by waste stream classifications developed by GSK and combined into aggregate categories such as total hazardous waste. Waste data is based on invoice data, data from waste transfer notes or calculations of circularity and is collected at site level. If primary data is not available, estimates are used based on weight data from our waste vendors, or historical trends or other proxies. Where possible, waste data is entered in local units of measure by sites and converted into kg for reporting purposes using embedded conversion factors in the reporting system. Waste is reported in metric tonnes, except for percent circular waste, which is reported as a percentage. Specific material flows that leave site for re-use and that are not classified as waste under applicable legislation (such as certain wooden pallets, drums, covered by an organised reuse system) are not used for reporting purposes.

Reported Metric and KPI	Definition and scope	Source and calculated methodology
Total waste	The sum of all hazardous and non-hazardous routine waste leaving sites	Data on waste sent to a third party is obtained from waste invoices and waste transfer notes. Where sites receive invoices from multiple waste handling companies, data is consolidated by waste stream, routine and non-routine waste, hazardous and non-hazardous waste and converted to kg. Where invoices do not provide the weight of individual consignments of waste, sites estimate the weight of an item. Waste is classified as hazardous or non-hazardous using the classification provided by the waste vendor in accordance with local legislation. Waste is classified as routine if it is waste from production (including trial and validation batches), packaging, maintenance, forward or reverse distribution (including product recalls), office and other ancillary facility operations. Routine Waste is any material that leaves the site as a residue of the typical GSK day-to-day operational activities (referred to as Routine). Waste is classified as non-routine if it is from construction and demolition waste, gardening waste, or from decommissioning a building or area.
Total circular waste	Calculation	GSK classifies waste by its disposal or recovery route as sent to the waste receiving company. Circular waste is the sum of any routine waste (as defined above) that is sent to one of the following routes of processing: – Composting or anaerobic digestion – Land treatment resulting in benefit to agriculture or ecological improvement such as for compost – Off-site reuse of non-solvent waste – Off-site solvent reclamation/regeneration – Oil re-refining or other reuses of oil – Recycling/reclamation of materials
Total non-circular waste	Calculation	Non-Circular waste is the sum of any routine waste (as defined above) that is sent to one of the following routes of processing: – Land treatment with no benefit – Landfill – Off-site wastewater treatment plant for specialist treatment prior to sending wastewater to a wastewater treatment plant – Off-site for use principally as a fuel or other means to generate energy – Off-Site incineration without energy recovery – Permanent storage – Other routes of disposal on a case-by-case basis
Total waste to landfill	Calculation	Waste to landfill is the sum of all waste sent to landfill. This is a subset of total waste and materials, and total non-circular waste. For reporting purposes when materials and waste leave a GSK site, the next site that receives the material should be the point at which the disposal/recovery method should be identified and recorded. This means that GSK report waste sent to incineration off site as the destination after it has been accepted by the waste processer. GSK report ash waste sent to landfill for any waste incinerated on site. Local regulations may mandate that a GSK site must send a waste stream to landfill or if landfill as the best environmental option (e.g., for asbestos disposal). For sites that are required to send material to landfill for local regulations, GSK still consider that status as Zero Waste to Landfill.
% circular waste	Calculation	This is calculation from the total circular waste divided by the total waste and materials expressed as a percentage.
Waste otherwise disposed	Aqueous waste sent for specialist treatment offsite	Aqueous waste sent for specialist treatment offsite is the sum of any routine waste (as defined above) that is sent to off-site wastewater treatment plant for specialist treatment prior to sending wastewater to a wastewater treatment plant.

Sustainable sourcing

Reported Metric and KPI	Definition and scope	Source and calculated methodology
% of paper and palm oil certified	Calculation For paper packaging, Certified is defined as sourced from tier-1 and tier-2 suppliers covered by an FSC (Forest Stewardship Council) or PEFC (Programme for Endorsement of Forest Certification) Chain of Custody Certification OR material with 50% or greater recycled content For palm oil, Certified is defined as material certified under RSPO (Roundtable on Sustainable Palm Oil) Identity Preserved, Segregated, Mass Balance or Book & Claim credits	Total volume of paper packaging material meeting GSK's definition of 'certified/recycled Paper Packaging'/Total volume of paper packaging material purchased in agreed reporting period * 100. Acceptable evidence for demonstrating meeting GSK's definition of sustainably sourced paper packaging includes: 1) FSC and/or PEFC Certification numbers for relevant paper/pulp mills and converters/printers that have been checked against the FSC Database and/or PEFC database to be valid and within their expiration date. 2) Confirmation of % recycled content within GSK paper packaging provided by converter/printer and/or paper/pulp mill on a letter headed paper. 3) A purchase order/written confirmation from relevant procurement lead for the allocated volume of paper packaging which will be purchased from FSC or PEFC Certified entities in the next purchasing cycles. This is to cover scenarios where there is significant inventory which delays the next physical purchase of paper packaging, however the agreement to transition is in place. Palm Oil – Total volume of Palm Oil derivatives meeting GSK's definition of 'Certified Palm Oil' which includes material certified under RSPO Identity Preserved, Segregated, Mass Balance or Book & Claim credits/Total volume of palm oil material purchased in agreed reporting period * 100. Acceptable evidence for demonstrating palm oil derivatives meeting GSK's definition of Sustainably Sourced Palm Oil includes: 4) RSPO Certification number covering the material supplied to GSK with indication it is either Mass Balance, Identity Preserved or Segregated supply chain model. RSPO certification number for the supplying entity should also be verified as valid and in date on the RSPO Database. 5) A purchase order / written confirmation from relevant procurement lead for the allocated volume of palm oil derivative which will be purchased under acceptable RSPO Supply Chain models of mass balance, identity preserved or segregated during next purchase cycle. This is to cover scenarios where there is significant inventory which delays the next physical purchase of palm oil material, however the agreement to transition is in place. 6) Documentation for purchase of RSPO Book & Claim Credits including total volume purchased and to which grade.

Appendix 1: Reported Metric Calculation Methodology

Reported Metric and KPI	Definition and scope	Source and calculated methodology (Reported in CO_2e)
On-site fuel use	Scope 1 emissions from combustion of fossil fuels on site	Fuel consumption data is converted to units of CO_2e using carbon emission factors taken from BEIS. Sources are invoices, meter readings, on-site systems or proxy data as detailed in each category for site fuel.
Sales force vehicles	Scope 1 emissions for the vehicles leased for the sales force	CO2e emissions for vehicles used by the sale force are based on data from GSK's fleet leasing companies. and static country database which consist of details of leased and purchased vehicles. GSK collects data from fleet leasing providers' data systems and static country database (through direct feedback) to obtain a vehicle level report that contains annual contracted distance data for each vehicle and CO2e emissions data as published by vehicle manufacturers. Distance data is converted to km from miles in order to calculate total CO2e emissions for the calendar year. Vehicle data is consolidated across all vehicle providers to calculate CO2e emissions. In the case of vehicles for which annual contracted distance, contractual termination duration, CO2 emissions data are missing, fixed figures based on engine type of the vehicle (for CO2 emissions) and standard fleet policy of GSK (for annual contracted distance, contractual termination duration) are used.
Propellant emissions during manufacture of inhalers	Scope 1 emissions for the fugitive emissions of HFA134a gas released during manufacturing of GSK's Metered Dose Inhalers	Fugitive emissions of HFA134a are based on an inventory reconciliation methodology at the three sites where GSK's inhalers are manufactured and includes the amount of HFA134a: – Delivered to site as measured on weighbridges – Leaving site in finished product – Captured as waste – And calculating the fugitive releases from quality testing procedures for the different products
Refrigerant gas losses	Scope 1 emissions of refrigerant from ancillary equipment on GSK sites that contain >1kg of refrigerant	GSK sites maintain an inventory of equipment containing >1kg of refrigerants detailing the amount and type of refrigerant used. This is updated annually. Fugitive losses are measured by the amount of refrigerant that is required to top up ancillary equipment during regulatory inspections or following the identification of a leak.
Electricity (market-based emissions)	Scope 2 carbon emissions from electricity reflecting the sourcing choice that GSK have made for the purchased electricity	The market-based method derives emissions factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims. Where these are in place, GSK applies an emission factor of zero for the calendar year in line with the GHG Protocols. GSK applies factors sourced from the International Energy Agency for all other sites in the reporting boundary and not the residual mix factors to these sites as residual mix factors are not available for all markets where GSK operates.
Electricity (location-based emissions)	Scope 2 carbon emissions from electricity reflecting national grid averages	The location-based method involves using an average emission factor that relates to the local grid from which electricity is drawn. Data from the IEA database. From 2021 onwards, GSK only had manufacturing operations in Quebec province, Canada. The average national grid factor is not representative of the predominantly hydroelectric power mix in Quebec province, GSK use as a location factor for this site taken from the Canadian National Inventory 2022.
Purchased heating and cooling	Scope 2 carbon emissions from purchased heating and cooling	Scope 2 carbon emissions are for purchased steam and are calculated by converting reported energy in kWh to CO_2e using carbon emission factors from BEIS.
Scope 1 & 2 GHG emissions intensity from energy per £m revenue	Intensity ratio of GSK total Scope 1 & 2 emissions from energy using market-based accounting for the calendar year approach per £ revenue for the calendar year	The aggregate total Scope 1 & 2 emissions from energy reported by GSK divided by GSK total revenue as reported in the end of year financial statements. This value is reported in CO_2e per £.
Scope 1 & 2 GHG emissions intensity from energy per FTE	Intensity ratio of GSK total Scope 1 & 2 emissions from energy using market-based accounting for the calendar year approach per FTE for the calendar year	The aggregate total Scope 1 & 2 emissions from energy reported by GSK divided by GSK FTE sourced from Workday as reported in the company Annual Report. This value is reported in CO_2e per FTE.

Appendix 2: Scope 1 and 2 Emission Factors

Scope 1 Emission Factors

Year	Scope 1 fuels	Scope 1 HFCs from inhalers and refrigerants	Scope 1 sales force emissions	Scope 1 solvent waste to energy
2021	UK government conversion factors 2020	IPCC 4th Assessment report	Individual vehicle data provided by Fleet providers	UK conversion factors 2022 based on bioethanol as proxy
2022	UK government conversion factors 2021	IPCC 4th Assessment report	Individual vehicle data provided by Fleet providers	UK conversion factors 2022 based on bioethanol as proxy
2023	UK government conversion factors 2022	IPCC 4th Assessment report	Individual vehicle data provided by Fleet providers	UK conversion factors 2022 based on bioethanol as proxy
2024	UK government conversion factors 2023	IPCC 4th Assessment report	Individual vehicle data provided by Fleet providers	UK conversion factors 2022 based on bioethanol as proxy

Scope 2 Emission Factors

Year	Scope 2 imported electricity location factor	Scope 2 imported electricity market factor	Scope 2 imported steam, chilled water & compressed air	Scope 2 imported chilled water & compressed air
2021	IEA 2022 emission factor set	GSK replace location emission factors with a market factor when there is evidence of the purchase of Energy Attribution certificates	UK government conversion factors 2022	Uses imported steam factor as proxy
2022	IEA 2022 emission factor set		UK government conversion factors 2022	Uses imported steam factor as proxy
2023	IEA 2022 emission factor set		UK government conversion factors 2022	Uses imported steam factor as proxy
2024	IEA 2023 emission factor set		UK government conversion factors 2023	Uses imported steam factor as proxy

Outside of Scope 1 & 2 emissions	CO_2 from fermentation
2021	Calculated based on CO_2 concentration in fermentation off gas
2022	
2023	
2024	

Appendix 3: Reporting and Calculation Exceptions

General exceptions are:

- GSK do not use residual mix emission factors for Scope 2 market-based emissions for sites not purchasing renewable electricity as these factors are not available for all countries where GSK has operations that fall within the reporting boundary.
- Scope 3 emissions for upstream transportation between tier 1 suppliers and GSK.

The following are exclusions and additional detail for energy reporting exceptions:

- All mobile, back-up, and temporary equipment are excluded from reporting (either direct or third party), unless, where fuel is taken from central bulk fuel storage to power this equipment, then this use will be captured through the bulk fuel purchase data.
- Where GSK are directly using fuel for back-up installations, where the primary systems are down, this should be reported or estimated in lieu of the energy that would have been used in the primary system it is replacing (such as back-up power generation, or back-up chillers).
- All portable gas bottles are excluded from reporting. Fixed gas bottle/tank installations for operational use must report gas recharges and supported with an invoice, or marked as an estimate.
- Fuel used for onsite transport only is excluded (e.g., forklifts)
- All other fuel and energy use should be reported, or an explanation provided for non-reporting.
- CO_2 emissions from on-site waste treatment processes are excluded on grounds of materiality. This data historically has accounted for approximately 0.01% or total Scope 1 & 2 market emissions.

Site specific exceptions are:

Site boundaries:

- Two sites split their data reporting within the site boundary: Tres Cantos is required by country requirements to report based on business unit, so reports separately for R&D and Commercial. Upper Merion (Building 40) and Upper Merion (R&D) reports separately due to the complexity of legacy billing and metering set up.

Energy:

- Purchased non-renewable electricity: Egyptian site invoices are labelled one month in arrears – i.e., January use appears as February on the invoice.
- Canada National Inventory Report for Quebec region emission factor for electricity generation for the St Foy Vaccine manufacturing site[1] & Vendor provided emissions factors for purchased steam supplied to the Dresden and Evreux manufacturing site supported by evidence.
- Purchased heating and cooling: the Evreux and Dresden sites have provided evidence of how the steam that is purchased for these sites is generated along with an emissions factor from the vendor that has been embedded into the database.

Water:

- UM Biopharm site excludes water use from sprinkler system testing.
- The GSK site in Saudi Arabia is not considered to be a high-water stress site owing to the availability of water from desalination plants.

Wastewater:

- Barnard Castle and Montrose sites receives invoices for wastewater in metric tonne. This is converted to m3 using a conversion factor of one.
- Egyptian sites report an estimate based on the water supplied (via invoice) and the cost of sewage treatment (via invoice) to calculate the mass of wastewater.
- Conversion factors are based on the density of water is 1 g/cm3. 1 m^3 = 1,000 kg, 1 litre = 1 kg.

Total water use

There are some sites that consist of multiple buildings across more than 1 campuses (Sub sites, on top of main site). GSK may only use a part/portion of these for business purpose. These sites would have water meters entering the site that need to be recorded and reported.

1 Canada National Inventory report 2021, section 3, Table A13–6 Electricity Generation and GHG Emission Details for Quebec, electricity generation intensity p 65 https://unfccc.int/documents/271493