Basis of reporting 2022: environmental data

GSK report against the following metrics for all sites under 'operational control' as defined in our organisational boundary approach. Our 2022 reporting period covers 1 January to 31 December 2022. 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. 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 use data from December 2021 as a proxy for December 2022 where data is not available. Data submitted after 31 January 2023 will be included and re-stated in subsequent years reporting.

Scope 3 greenhouse gas emissions data is collected one year in arrears, so data reported in 2022 is from 2021, except for patient use of metered dose inhalers (MDI) which is calculated from production of MDI in the calendar year (2022). GSK's baseline year for its environmental targets is 2020. 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 (e.g. the demerger of the Consumer Healthcare business to form Haleon in 2022). 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.

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	Generation of heat/steam/electricity from combustion of fuels Emissions from sales force vehicles Fugitive emissions of fluorinated gases (refrigerant losses, propellant losses) Emissions from on-site waste treatment processes
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	
per £m revenue	
per full time equivalent (FTE)	
Energy (GWh)	
Total energy for operations	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
% renewable electricity	
Ozone-depleting substances (kg of CFC11e)	
Water (recorded as m^3 and converted to million m^3)	
Total water use Total wastewater discharged % of GSK sites and suppliers compliance with AMR and waste water API limits	Water from municipal supply, ground water, tankers. Water at high risk sites and recycled sources Wastewater to municipal sewer, surface water, land and others Predicted no effect concentrations (PNEC)
Waste (metric tonne converted to thousand tonnes)	
Total waste and materials % circular waste Total hazardous waste Total non-hazardous waste Total waste incinerated Total waste to landfill	The sum of all hazardous and non-hazardous waste materials generated by sites in routine operations The proportion of all hazardous and non-hazardous waste materials generated by sites in routine operations that is sent to a circular recovery route The sum of all hazardous waste materials generated by sites in routine operations The sum of all non-hazardous waste materials generated by sites in routine operations The sum of all hazardous and non-hazardous waste materials generated by sites in routine operations sent for incineration The sum of all hazardous and non-hazardous waste materials generated by sites that is sent to a landfill site
Biodiversity and sustainable sourcing	
% of sites with completed biodiversity assessments Number of high risk materials implementing sustainable sourcing roadmaps	

Table 1: These environmental metrics were selected from the materiality assessment completed in 2021 and our published targets towards our net zero and net nature positive ambition where indicators are available.

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. GSK collects and reports energy consumption data for all manufacturing, major R&D sites and offices where annual energy use is more than 4750MWh. In 2022, to ensure there was no significant understatement of consumption data for sites below the threshold, GSK used the property database and calculated the energy used for those sites with no reported energy data, using average industry data for different property types

The total calculated energy is 76,042 MWh per year representing less than 3% of GSK's 2021 reported total energy consumption (excluding Consumer Healthcare). GSK concluded to maintain its threshold that only sites over 4750MWh of consumption are required to collect and report their data. This is reviewed annually to ensure threshold levels are appropriate to manage material impacts to GSK's environmental metrics. This threshold criteria for energy was used as the reporting threshold for other site based environmental data such as water, waste and fugitive emissions of refrigerants.

Exceptions

GSK currently report against the full environmental metrics use within the reporting boundary as the operator of the site or facility, except for Evreux where appropriation for sub-tenants is provided and the Irvine social club that sits outside of the site boundary and represents <0.1 % of total site use. This is not considered to materially impact the total Scope 1&2 emissions data.

Changes to GSK network

Divestments are removed from the data from date of divestment or notification of ceasing routine operations and retrospectively where a full business is divested. In alignment with the GHG Protocol, site closures are not retrospectively removed from the data. During 2022 the Consumer Healthcare business was demerged from GSK. Although, environmental data was collected in GSK's reporting systems until the date of demerger. GSK treats data for the departed sites as discontinued business and will report and restate up to 4-year historical data without the contribution of the departed sites and respective environmental metrics. The enforcement of local regulatory requirements has delayed the demerger of one site in Brazil and data from that site will not be included in the aggregated restated data for GSK. Acquisitions, as aligned with the reporting boundary, are included as soon as the data becomes available or within 12 months, unless evaluated below the reporting threshold

Reporting boundary

GSK report a range of greenhouse gas emissions across Scope 1, 2 and 3, water, waste and materials and biodiversity indicators. As with all environmental data estimates and assumptions are included. For Scope 1&2 carbon emissions GSK align to the Greenhouse Gas Protocol Corporate Standard[1] and follow the guidance for Scope 2 emissions reporting[2]. 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. GSK use the IEA factors for generation of electricity. 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, site biodiversity assessments are reported at site level, except for the impact of the sales fleet which is an operational impact that is reported at business unit level. GSK have identified key suppliers in 2022 for reporting of Anti-Microbial Resistance (AMR) and Active Pharmaceutical Ingredients (API) wastewater impacts in the supply chain, which are further defined in internal standards. GSK identified 12 high-risk priority materials from agricultural, marine and forestry sources in 2022 to implement Wave 1 sustainable sourcing roadmaps with independent external advice. Waste and recycling data includes all routine operational regulated and non-regulated waste produced within the organisation reporting boundary.

Emissions factors

Greenhouse gases and carbon emission factors

GSK measures and reports emissions arising from the four of the main greenhouse gases that contribute to climate change, namely carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N2O), and hydrofluorocarbons (HFCs). The greenhouse gases (SF6) were evaluated in 2015 based on the number of fume hoods and considered not material (as 1300 tonnes of CO_2e or <0.1% of Scope 1&2 emissions) and excluded for further reporting. This is validated in 2022 to confirm no significant change. 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.

- 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 Business, Energy & Industrial Strategy (BEIS)

1 GHG Protocol Corporate Accounting and Reporting Standard 2015 edition, https://ghgprotocol.org/corporate-standard last accessed 9th November 2022

2 Scope 2 Guidance 2015 edition, https://ghgprotocol.org/scope_2_guidance last accessed 9th November 2022

3 Corporate Value Chain (Scope 3) Accounting and Reporting Standard 2011 edition https://ghgprotocol.org/standards/scope-3-standard last accessed 9th November 2022

4 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

– 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

Exceptions are
– Canada National Inventory Report for Quebec region emission factor for electricity generation for the St Foy Vaccine manufacturing site[6] & Vendor provided emissions factors for purchased steam supplied to the Dresden and Evreux manufacturing site supported by evidence

Year	Scope 1 fuels	Scope 1 HFCs from inhalers and refrigerants	Scope 1 sales force emissions	Scope 1 solvent waste to energy
2020	UK government conversion factors 2019	IPCC 4th Assessment report	GHG protocol Transport_Tool_v2_6 2015	UK conversion factors 2017 based on LNG as proxy
2021	UK government conversion factors 2020	IPCC 4th Assessment report	Individual vehicle data provided by Fleet providers	UK conversion factors 2017 based on LNG as proxy
2022	UK government conversion factors 2021	IPCC 4th Assessment report	Individual vehicle data provided by Fleet providers	UK conversion factors 2017 based on LNG as proxy

Scope 2 emission factors	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
2020	IEA 2021 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 2019	Uses imported steam factor as proxy
2021	IEA 2021 emission factor set		UK government conversion factors 2020,	Uses imported steam factor as proxy
2022	IEA 2021 emission factor set		UK government conversion factors 2021.	Uses imported steam factor as proxy

Outside of Scope 1&2 emissions	Biogenic releases from energy	CO_2 from fermentation
2020	UK government conversion factors 2019	Calculated based on CO_2 concentration in fermentation off gas
2021	UK government conversion factors 2020	
2022	UK government conversion factors 2021	

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 published annually by the Department for Business, Energy & Industrial Strategy (BEIS).

Data collection and documentation

Data that forms the basis of the 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. Some metrics that require transformation outside the main system. Monthly dashboards of key indicators are shared with business unit sustainability leads and quarterly performance reviews at 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.

Use of estimated data

The measuring and reporting of environmental performance data involves a degree of estimation and the use of assumptions. 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. Data reported as

– 'actual' includes utility invoices and screenshots or extractions from systems providing reproducible data
– Data reported as 'estimate' can be based on proxy data. Examples of proxy data include but are not limited to, data from a previous month or year where actuals are recorded, data from a meter reading where invoices are not received, logbooks which contain clear traceability of date, location and the person collecting data, data from a similar site, or (in the case of wastewater) a conservative estimate for manufacturing sites that all water supplied as incoming goes to wastewater.

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 9th November 2022

6 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

7 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

Data changes and governance

Environmental indicator levels have controls applied which trigger the need for a comment to be reported alongside an indicator 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. During 2022 additional verification of input data was applied to energy, water and waste by the central and business unit teams. Changes to older data will not be made unless there is a significant change of >5% of total reported environmental metrics, (e.g., refined estimation or calculation methodologies). 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). None of the known exceptions are considered to materially change the total emissions or environmental indicators reported.

Key terms

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

Definition	Details included
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 GSK aims to offset around 20% of our 2020 footprint using responsible and high-quality carbon removal solutions. Targets were verified by SBTi. GSK will update the SBTi verification for 2023 following the de-merger of Consumer Healthcare (Haleon) in 2022.
Net positive impact on Nature	Net nature positive means reducing environmental impacts across water, materials and biodiversity and investing in measures to protect and restore nature. GSK will approach this through the delivery of the water, waste and biodiversity goals. GSK are partnering with organisations such as the UN Water Resilience Coalition to support advice for a positive water impact in water stressed areas; the Ellen MacArthur foundation to support and provide advice on how to adopt a circular approach to waste and materials; the UN Environment Programme World Conservation Monitoring Centre to provide advice and guidance to place biodiversity at the heart of decision making. GSK aim to source agricultural, forestry and marine derived materials sustainably and GSK are a member of the Task Force on Nature Related Financial Disclosure (TNFD).
Water neutral	Water neutral means that all reasonable actions have been taken to reduce the existing water footprint of a site, and GSK aim to balance our impacts on water use, water quality and access within a water basin. GSK will approach this through investing in water efficiency projects at sites. GSK are partnering with the UN Water Resilience Coalition to address shared water challenges in a community to support the sustainable use of water within a water basin, such as rainwater harvesting projects that capture water at source for reuse
Zero operational waste	Zero operational waste means all routine waste and materials will be recovered by circular routes. GSK will approach this by reducing the amount of hazardous and non-hazardous waste generated on sites by 20% by 2030, and by working to eliminate non-circular methods of waste disposal for the remainder.

Calculation methodology

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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 UK Government conversion factors for company reporting of greenhouse gas emissions[8] published annually by the Department for Business, Energy & Industrial Strategy (BEIS). Sources are invoices, meter readings, on site systems or proxy data as detailed in each category for site fuel.	CO_2e
Sales force vehicles	Scope 1 emissions for the vehicles leased for the sales force	Carbon emissions for vehicles used by the sale force are based on data from GSK's fleet leasing companies. GSK collects data from leasing providers data systems to obtain a vehicle level report that contains annual contracted distance data for each driver and CO_2e emissions data as published by vehicle manufacturers. Distance data is converted to km from miles in order to calculate total CO_2e emissions for the calendar year. Vehicle data for ca. 9000 vehicles from 29 countries is consolidated across all vehicle providers. GSK applies a conservative approach to assume these are all Internal Combustion Engine (ICE) powered vehicles and applies the GSK mileage average and CO_2e average to these remaining vehicles. GSK take a full year for sales force lease from the fleet leasing companies during 2022, which can result in some overstatement of emissions based on vehicle acquisition and disposal. This is not considered material against the total Scope 1 emissions and during 2023 further refinement of granular data for sales force vehicle emissions will be developed.	CO_2e
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 between 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 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.	CO_2e
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. The GWP impact is calculated using 100-year lifetime emission factors for refrigerants as per the International Panel on Climate Change (IPCC) 4th Assessment Report.	CO_2e
Carbon emissions from other sources	Scope 1 emissions from on-site waste or wastewater treatment processes at manufacturing sites	On site waste treatment emissions for two sites (Aranda and Quality Road) are not measured directly but based on engineering estimates. One site estimate emissions from on-site wastewater treatment processes converting Chemical Oxygen Demand (COD) sample data to Biological Oxygen Demand (BOD), and from that data estimating the amount of methane and CO_2 generated in the sludge in a wastewater treatment plant[9] One site estimates CO_2 emissions from on-site waste treatment by measuring BOD (mg/m^3) upstream and downstream of the treatment unit recording the volume of wastewater. BOD data is obtained from routine sample testing data reports from an external lab provider. The volume of wastewater is estimated based on the number of batches produced by the main production plant. CO_2 emissions in milligram CO_2 are calculated from CO_2 Emissions [mg] = upstream BOD – downstream BOD x Volume of waste water. mg CO_2 are converted to kg CO_2 before reported.	CO_2e
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.	CO_2e
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 2021	CO_2e
Purchased heating and cooling	Scope 2 carbon emissions from purchased heating and cooling	Scope 2 carbon emissions are for purchased steam are calculated by default converting reported energy in kWh to CO_2e using carbon emission factors from UK Government conversion factors for company reporting of greenhouse gas emissions[10] published annually by the Department for Business, Energy & Industrial Strategy (BEIS). Two exceptions: 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.	CO_2e

8 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

9 Biological treatment of sewage by the activated sludge process, K Hanel from Ellis Horwood series in water and wastewater technology, Ellis Horwood, 1988

10 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

Intensity greenhouse gas emissions

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
Scope 1&2 GHG emissions intensity per £m revenue	Intensity ratio of GSK total scope 1&2 emissions using market-based accounting for the calendar year approach per £revenue for the calendar year	The aggregate total scope 1&2 emissions reported by GSK divided by GSK total revenue as reported in the end of year financial statements	CO_2e per £
Scope 1&2 GHG emissions intensity per FTE	Intensity ratio of GSK total scope 1&2 emissions using market-based accounting for the calendar year approach per FTE for the calendar year	The aggregate total scope 1&2 emissions reported by GSK divided by GSK FTE sourced from Workday as reported in the company Annual Report	CO_2e per FTE

Energy

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. If primary data is not available, estimates are used based on historical trends or proxy data as detailed in the following sections. Energy is converted into kWh for reporting purposes using fuel calorific values taken from the UK Government 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.

Note: Annual reporting is based on the opening actual for the year against the latest actual, for remaining months proxy data can be used from previous years actuals.

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
Natural gas purchased	Energy from the combustion of purchased natural gas.	Natural gas consumption data is obtained in the following priority: 1. Consumption data as provided by utility providers (actual) 2. If no invoice is available, meter readings provided by utility providers or taken by local facilities management teams are used and marked as estimated data 3. If no meter readings are provided sites can use proxy data based on previous years month, previous month, similar site usage or benchmark data from a recognised source. Data is reported by sites in local units of energy (kWh, GJ, decatherm, mmBTU etc) or volume (m3, HCF, CCF etc). Data reported in volumetric units are converted to kWh using fuel calorific value taken from UK Government conversion factors for company reporting of greenhouse gas emissions[11] published annually by the Department for Business, Energy & Industrial Strategy (BEIS) Exceptions: US based sites managed through Capturis use a calorific factor of 0.1026 decatherm per CCF.	kWh
Other fossil fuels	Energy from the combustion of purchased diesel or heavy fuel oil	Diesel and fuel oil consumption data is obtained in the following priority: 1. Delivery invoices as provided by utility/fuel providers (actuals) 2. Use data reported on a monthly basis based on flow meter readings recorder by site facilities teams (classed as estimates) 3. If no invoice is available, then meter readings provided by utility/fuel providers or taken by local facilities management teams are used and marked as estimated data 4. If no meter readings are provided sites can use proxy data based on previous years month, similar site usage, or benchmark data from a recognised source. Data is reported into GSK's reporting database by sites in local units of energy (kWh, GJ, dekatherm, mmBTU etc) or volume (l, m3, HCF, CCF etc). Data reported in volumetric units are converted to kWh within using fuel calorific values from UK Government conversion factors for company reporting of greenhouse gas emissions[12] published annually by the Department for Business, Energy & Industrial Strategy (BEIS). 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	kWh

11 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

12 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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 obtained in the following priority: 1. Consumption data as provided by utility providers (actuals) 2. If no invoice is available, then meter readings provided by utility providers or taken by local facilities management teams are used and marked as estimated data. 3. If no meter readings are provided sites can use proxy data based on previous years month, similar site usage or benchmark data from a recognised source. Data is reported into GSK's reporting database by sites in local units of energy and then converted to kWh, if complex aggregation is required this occurs outside the system but evidence is supplied.	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. Electricity consumption data is obtained in the following priority: 1. Consumption data as provided by utility providers (actuals) 2. If no invoice is available, then meter readings provided by utility providers or taken by local facilities management teams are used and marked as estimated data. 3. If no meter readings are provided sites can use proxy data based on previous years month, similar site usage or benchmark data from a recognised source. Data is reported into GSK's reporting database by sites in local units of energy and then converted to kWh. Exception: Egyptian site invoices are labelled one month in arrears – i.e January use appears as February on the invoice.	kWh
On-site renewably generated electricity (otherwise refereed to as on-site generated renewable 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. Where data can be extracted from a controlled system in a reproducible way, these results are reported as 'Actual'. Where these results are reported from proxy data or manually recorded meter readings, these are recorded as estimates. GSK performed sample verification of evidence.	kWh
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 2022 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	kWh
Renewable heat	Heat generated on a GSK site from combustion of biomass	The Nashik site in India has a biomass boiler installed. Energy data is based on invoices from the supplier of biomass wood briquettes. Samples of the briquettes are tested monthly for moisture content, calorific value and ash content to determine that the calorific value is ~3600 kcal per kg which is the conversion factor used by the site.	kWh
	Hot water from on-site solar installations	The Jurong and Dresden sites generate hot water from on-site solar installations. Dresden consumption data is measured by site metering systems recorded on a monthly or bi-monthly basis by local facilities management teams and is reported as an estimate.	kWh
Purchased heating and cooling	Purchased steam, compressed air and chilled water	Three sites purchase steam. Addenbrookes site is invoiced in units of mass converting pounds of steam to kwh using 0.3164 kwh per pound Marburg site are invoiced in metric tonnes and convert to kwh using 774 kWh per tonne. Dresden and Evreux site are invoiced in kwh The Marburg site purchases compressed air and is invoiced in m3. This is converted to kwh using a factor or 0.18kWh/m^3 based on the energy used to compress the air to the pressure supplied. One site purchases chilled water Marburg invoiced in kWh	kWh

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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 – minus excess electricity generated on site from either combustion of fossil fuels or generated on site from renewable sources Calculation the values are taken from those providing actual invoices or estimates as detailed in the sub-metrics.	kWh
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. Calculation the values are taken from those providing actual invoices or estimates as detailed in the sub-metrics	kWh
% renewable sourced electricity	Calculation	This is calculated as a percentage using the following fields: Sum (purchased renewable electricity + electricity from on-site solar, wind or biogas) / sum (all purchased electricity + electricity from on-site solar, wind or biogas) Purchased renewable electricity claims are aligned to RE100 Credible Claims guidance (2016)[13]	kWh
% renewable electricity aligned to RE100	Calculation	This is calculated as a percentage using the following fields: Sum (purchased renewable electricity + electricity from on-site solar, wind or biogas) / sum (all purchased electricity + electricity from on-site solar, wind or biogas + electricity from combustion of diesel + electricity from combustion of natural gas) Purchased renewable electricity claims are aligned to RE100 Credible Claims guidance (2016) Metric aligned to RE100 technical criteria (2021 version 3)[14] that includes accounting for electricity generated on site from fossil fuels	kWh

Biogenically derived emissions

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
Fermentation related emissions	CO_2 released during fermentation processes	CO_2 released during fermentation are 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 22.4m3 at Standard Temperature and Pressure	CO_2e
Biogenic emissions from wastewater treatment	CO_2 released during onsite wastewater treatment where the waste is biogenically derived	CO_2 released during wastewater treatment of biogenically derived waste are estimated in the same manner as CO_2 from on-site wastewater treatment emissions are calculated (see wastewater treatment emissions Scope 1 above)[15]. However, if the source of the waste is biogenically derived such as fermentation waste, these emissions are classed as biogenic emissions and reported as outside of scopes 1&2. The Irvine site reports wastewater treatment emissions of fermentation waste as biogenically derived. These are based on meter readings and COD sampling.	CO_2e
Biogenic emissions from combustion of biomass	CH4 and NOx gases released during the combustion of biomass	Carbon emissions from combustion of biomass (taken from invoices of biomass) are reported as net zero for scope 1 reporting purposes. However, methane and N2O are released during combustion. Emissions are calculated using emission factors for bioenergy taken from UK Government conversion factors for company reporting of greenhouse gas emissions[16] published annually by the Department for Business, Energy & Industrial Strategy (BEIS) and reported as outside of scopes 1&2.	CO_2e

13 RE100 Making Credible Claims, 2016 https://www.there100.org/sites/re100/files/2021-02/RE100%20Making%20Credible%20Claims.pdf last accessed 22nd November 2022

14 RE100 technical criteria, 2022 https://www.there100.org/sites/re100/files/2022-10/20221024_RE100%20technical%20criteria%2Bappendices.pdf last accessed 22nd November 2022

15 Biological treatment of sewage by the activated sludge process, K Hanel from Ellis Horwood series in water and wastewater technology, Ellis Horwood, 1988

16 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

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. Data is collated a year in arrears to allow financial data for a calendar year to be reconciled i.e. Scope 3 emissions data reported in 2022 is based on data from the year 2021. 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.

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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 footprinting assessments.	CO_2e
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.	CO_2e
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.	CO_2e
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 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 a) Inbound logistics between tier 1 suppliers and GSK. This is excluded in 2022. b) Site to site logistics and outbound logistics to in-country distribution centres are include in 2022 and are calculated using EEIO emission factors and data from GSK's financial systems.	CO_2e
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 by GSK sites for the route of recovery or disposal of each waste stream.	CO_2e
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 the UK Government conversion factors for company reporting of greenhouse gas emissions[17] published annually by the Department for Business, Energy & Industrial Strategy (BEIS) to 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.	CO_2e

17 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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.	CO_2e
8. Leased assets (upstream)	Emissions from the operation of assets leased by the GSK in the reporting year and not included in scope 1 & 2 emissions reports	GSK reviewed this category and determined it is not applicable to GSK. Emissions of leased assets are covered by GSK's scope 1&2 reporting (where above de-minimis threshold)	CO_2e
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 the UK Government conversion factors for company reporting of greenhouse gas emissions[18] published annually by the Department for Business, Energy & Industrial Strategy (BEIS). This will be included in the Carbon Trust model 2022 report and re-stated Scope 3 figures back to 2020.	CO_2e
10. Processing of sold products	Emissions from the processing of intermediate products sold in the reporting year by downstream companies to GSK	GSK assessed this category and determined it is not material and therefore excluded from reporting	CO_2e
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	CO_2e
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 for average waste treatment processes	CO_2e

18 https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting last accessed 9th November 2022

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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)	CO_2e
14. Franchises	This category includes emissions from the operation of franchises not 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)	CO_2e
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	CO_2e

Carbon offsets

GSK have a published position on the use of high-quality carbon offsets and during 2022 GSK has retired high quality carbon removal credits equivalent to 1657 tonnes CO_2e in 2022 in order to certify one product that is sold in the UK as carbon neutral as validated by the Carbon Trust. As this number is currently <0.1% of GSK's total emissions this is not deducted from the total in 2022.

Water

GSK sites report water supplied to GSK from municipal supply, taken from groundwater wells located on sites or supplied in tankers by 3rd 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, waste water used for irrigation, and wastewater used to recharge aquifers.

Where there are no invoice sources available, GSK applies location estimates using meter readings or calculations specific to the site. Liquid waste such as waste solvents that contain water are reported in the waste category.

Data is reported by source for water supplied and for wastewater and is based on invoice data or meter readings. If primary data is not available, estimates are used based on historical trends or other proxy data calculations documented by the site. Water data is entered in local units of measure by sites and converted into m3 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. GSK have excluded the Consumer Healthcare (Haleon) sites from 2022 reporting due to exit of the business. GSK site in Saudi Arabia is not considered to be a high-water stress site owing to the availability of water from desalination plants.

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
Municipal	Fresh water supplied to GSK by a utility company through a mains supply.	Municipal water supplied data is obtained in the following priority: 1. Consumption data as provided by utility providers (actual) 2. If no invoice is available, meter readings provided by utility providers or taken by local facilities management teams are used and marked as estimated data 3. If no meter readings are provided sites can use proxy data based on previous years month, similar site usage or benchmark data from a recognised source. Data 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. There are occasions where this is held outside the database due to aggregation of meters. As utility invoices are not lined up directly to start of a calendar month, these are recorded as invoiced. This method likely overestimates actual emissions in some years and underestimates them in others but, over time, captures the related data. Exceptions: UM Biopharm site excluded water use from sprinkler system testing, Brantford site water use is included in rental agreement, a flat rate estimate is reported based on office area	m^3
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 taken by local facilities management teams. Data is reported into GSK's reporting database by sites in local units of volume (m^3, litre, imperial gallon, US gallon) and converted to m3 within the reporting database. This is logged as an estimate. If a site uses a Supervisory Control and Data Acquisition (SCADA) system, or equivalent, to record groundwater, this value will be logged as 'Actual'.	m^3
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 (actual). Data 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.	m^3
Total water use	Calculation	The total values of – Water from municipal supply – Water from groundwater – Water supplied in tankers – (water from rainwater harvesting is excluded but reported separately)	m^3
Recycled water	Fresh recycled water supplied to GSK by a 3rd party	Fresh recycled water supplied data is obtained in the following priority: 1. Consumption data as provided by utility providers (actual) 2. If no invoice is available, then meter readings provided by utility providers or taken by local facilities management teams are used and marked as estimated data 3. If no meter readings are provided sites can use proxy data based on previous years month, similar site usage or benchmark data from a recognised source.	m^3
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[19] and WWF Water Risk Filter[20]. 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 This has been maintained in 2022 while the full assessments against the SBTN criteria is being completed in 2022.	m^3

19 https://www.wri.org/aqueduct last accessed 13th November 2022

20 https://waterriskfilter.org/ last accessed 13th November 2022

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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 wastes. Sites are not mandated to report the following wastewater streams – 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 'biosludge' or additional treatment of rainwater to mitigate API emissions. Invoiced data will be reported as actual, all other sources will be reported as estimate. Jurong provide wastewater estimates based on production volumes Data is reported into GSK's reporting database by sites in local units of volume (m^3, litre, imperial gallon, US gallon) and converted to m3 within the reporting database. Exceptions: Barnard Castle site receives invoices for wastewater in metric tonne. This is converted to m3 using a conversion factor of 1. Montrose receive invoices in units of weight and use a conversion that one metric Tonne equals one m^3. Egyptian sites report an estimate based the water supplied (via invoice) and the cost of sewage treatment (via invoice) to calculate the volume of waste water.	m^3

Zero Impact Active Pharmaceutical Ingredients (% of GSK sites and supplier locations used by GSK that are compliant with the AMR alliance and wastewater API limits)

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
% Zero Impact Active Pharmaceutical Ingredients (API) at GSK sites	GSK sites that manufacture API and manufacture formulated products containing API are in scope. Sites that are only involved in the packaging operations are out of scope 'Zero impact' refers to below predicted no effect concentration levels.	All relevant sites measure the concentration of an API in wastewater discharges 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 that API. The number of sites that meet this target is recorded as a percentage of the total.	%
% Zero Impact AMR discharges at GSK suppliers	GSK defined for 2022 a list of key supplier sites that manufacture API that for GSK 'Zero impact' refers to below predicted no effect concentration levels.	A desktop assessment records that discharges of API at a supplier site are below the PNEC or EHAC limits that has been determined for a specific API by GSK. Supplier self-assessments are validated by an audit performed within 12 months. The number of sites that meet this target is recorded as a percentage of the total. All suppliers have been audited.	%

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
% Zero Impact AMR discharges at GSK sites	GSK sites that manufacture API or formulated products where the API is an antibiotic. 'Zero impact' refers to below predicted no effect concentration levels.	Sites measure the concentration of an API in wastewater discharges and record if it is below the PNEC or EHAC that has been determined by GSK for that API. The number of sites that meet this target is recorded as a percentage of the total. GSK sites have had compliance confirmed by an internal GSK audit	%
% Zero Impact API at GSK suppliers	GSK defined for 2022 a list of supplier sites that manufacture API for GSK where the API is an antibiotic 'Zero impact' refers to below predicted no effect concentration levels.	A desktop assessment records that discharges of API at a supplier site are below the PNEC EHAC limits that has been determined for a specific API by GSK. Supplier self-assessments are validated by an audit performed within 12 months. The number of sites that meet this target is recorded as a percentage of the total.	%

Water stewardship

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
% sites that have achieved good water stewardship	A site is considered a 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 a site 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. Ulverston site was excluded from the water stewardship assessment due to site divestment	% age of total sites

Waste and materials

GSK apply the term total waste and materials to all routine operational hazardous and non-hazardous waste generated on our sites within the reporting boundary. 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 volumetric conversion factors. However, most waste conversions into kg are performed by sites before reporting into the database.

Historical waste data (before 2021) excluded waste and materials that did not leave GSK's sites, so excluded waste reused on site or waste incinerated on our sites. Waste and materials data for 2021 is being restated in 2022 to include the inventory of solvent recovered on site, as this data was not available for the 2021 ESG Performance Report. In some cases, local laws and regulations require certain waste be sent to landfill. For some types of waste (e.g. asbestos waste) landfill is the best environmental option. GSK report these wastes as waste sent to landfill.

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
Total waste and materials	The sum of all hazardous and non-hazardous waste materials generated by sites in routine operations	Waste data for materials sent to a 3rd 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. (or where available using the local metrics). Where invoices do not provide the weight of individual consignments of waste, sites estimate the weight of an item. Solvent Waste Reused on site is measured by recording the average inventory of solvent in the solvent recovery tankers from the year. On-site solvent incinerated as waste to energy is measured using flow meter readings. 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 solid and liquid waste and materials from production (including trial and validation batches), packaging, maintenance, forward or reverse distribution (including product recalls), office and other ancillary facility operations. Waste is classified as non-routine if it is from construction and demolition waste, gardening waste, or from decommissioning a building or area In 2021 GSK changed the reporting methodology to include waste solvent incinerated on site to generate energy at a site in Singapore, and materials recycled and reused on site. GSK will restate 2021 data to include the recycled solvent inventory. Waste data for 2019 and 2020 is the waste generated that that left GSK boundaries.	Metric tonne
Total circular waste	Calculation	GSK classifies waste by its disposal or recovery route as sent to the waste processing 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 – On-Site Reuse of non-solvent waste – On-site Solvent reclamation/regeneration. To avoid distorting the data, an annual inventory of recovered solvent is used in place of totalising the volumes of solvent recycled multiple times throughout the year – Recycling/reclamation of materials 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.	Metric tonne
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 – On-Site incineration without energy recovery – On-site use principally as a fuel or other means to generate energy – Permanent storage – Other routes of disposal on a case-by-case basis For reporting purposes when materials & waste leave a GSK site, the next site that receives the material should be the point at which the disposal/recovery method is recorded.	Metric tonne

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
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 do report ash waste sent to landfill for any waste incinerated on site. Where local regulations mandate that a GSK site must send a waste stream to landfill or if landfill is the best environmental option (eg for asbestos disposal) These exceptions for 2022 are Jurong (ash waste due to Singapore regulations), Tres Cantos (medical waste that is sterilised and sent to landfill due to Spanish regulations) and Boronia due to local covid regulations to not transport waste over state lines.	Metric tonne
% Circular waste	Calculation	This is calculation from the total circular waste divided by the total waste and materials expressed as a percentage.	Metric tonne

Sustainable sourcing

Reported Metric and KPI	Definition and scope	Source and calculated methodology	Units
Number of high-risk materials implementing sustainable sourcing roadmaps	GSK have identified 12 high-risk materials sourced from key agricultural, forestry and marine derived materials. Sustainable sourcing is defined as the integration of social, ethical, and environmental performance factors into the process of selecting materials, suppliers and supply chains. A sourcing roadmap which indicates sustainable sourcing strategy pathway, an overview of the supply chain and existing standards and timelines to achieve sustainable sourcing as recognised by a third party certification standard or equivalent.	Sources of information: GSK sustainable sourcing framework and information collected from suppliers. Sustainable sourcing consists of (i) Supply chain engagement and mapping, (ii) Supply chain assessment (iii) Closure of gaps vs GSK standards and (iv) Third party verification of results	Number
% of sites with completed biodiversity assessments	% of number of baseline biodiversity assessments completed at qualifying sites.	Number of sites assessed/total number of sites in scope	% of sites

Changes in methodology over time

GSK started reporting scope 3 emissions data in 2015 across all categories. Emissions from Category 1 Purchased Goods and Services use data in GSK's financial systems. Emissions from purchased goods combine supplier-specific activity data with emission factors that are either from recognised databases, were generated specifically for GSK or calculated by GSK using established product foot printing methodologies. These are assured by the Carbon Trust on an annual basis. GSK are engaging its suppliers in order to continuously improve and refine emission factors for purchased goods and services and develop greater detail for transportation and logistics. In line with the WRI/WBSCD GHG Protocol Corporate Value Chain (Scope 3) Standard, GSK defines the scope 3 quantitative materiality threshold at 5% of total scope 3 in the reporting period. These will be updated and where >5% re-stated to the baseline of 2020, this will occur in 2022 due to the de-merger of GSK Consumer Healthcare (Haleon).

GSK also completed a detailed assessment of the MDI losses during production across the 3 manufacturing sites in 2022 and provided an updated methodology, which is maintained internally. Numbers will be restated back to 2020 and narrative provided.

GSK will seek to have limited third party assurance of selected environmental data.