

Virgin Atlantic 2023 Non-Financial Reporting Criteria

March 2024

2023 Non-Financial Reporting Criteria covers the methodologies, scopes and boundaries used for the following areas:

1. Greenhouse Gas Emissions
2. Diversity, Equity, and Inclusion

1. Greenhouse Gas Emissions

Overview

This statement summarises Virgin Atlantic Airway's (VAA's) carbon footprint reporting methodology for 2023. The methodology and Scope for reporting (except for scope 3 category 11) are consistent with The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol Corporate Standard) and mandatory carbon reporting requirements of the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013.

Organisational boundary

VAA use the operational control approach to establish the organisational boundary of the carbon footprint reporting. In accordance with the GHG Protocol Corporate Standard, this includes 100% of GHG emissions from activities of owned or leased assets over which VAA has operational control (full authority to introduce and implement its operating policies at the operation) in the UK. VAA defines operational control as where we have operational activities and equipment that we control, including the implementation of operating policies. **Both Virgin Atlantic and Virgin Holidays are included together under the single VAA operation.**

Operational Scope

All GHG emissions under the operational boundary of VAA are included and categorised by Scope 1 (direct), Scope 2 (indirect) and Scope 3 (indirect value chain) emissions.

The Scope of VAA's operations covered by this approach include:

- VAA aircraft
- VAA's offices and buildings
 - The VHQ, Crawley
 - Clubhouse, London Heathrow
 - Revivals Lounge, London Heathrow
 - London Heathrow Hangar
 - London Heathrow offices, rooms, desks
 - Manchester Airport offices, rooms, desks
 - POBL Alexandra House, Swansea
 - Virgin Holidays retail stores
- VAA vehicle fleet

Emissions factors:

- UK Government GHG Conversion Factors for Company Reporting (2023)¹
- United States Environmental Protection Agency (US EPA) Supply Chain Greenhouse Gas Emission Factors (v1.2 by NAICS-6), published April 2023²
 - This is a comprehensive dataset of supply chain emission factors covering all categories of goods and services in the US economy. It is deemed appropriate to use these US factors for the GHG calculation given VAA's predominantly transatlantic operation, and the accessibility and detailed categorisation of the dataset.

Scope 1 & 2

VAA's Scope 1 and Scope 2 carbon footprint is calculated using activity consumption data, multiplied by an appropriate UK Government emissions factor. The tables below summarise the activity sources, data collection approach emissions factor.

Scope 1

Activity	Unit	Source
Jet fuel consumption on VAA aircraft	Tonnes	Measured actuals. Fuel consumption is calculated for every flight taken during the year, using fuel on board data collated directly from the aircraft and recorded/invoiced fuel uplifts. Data is independently audited by an accredited environmental verification body
Gas consumption in VAA offices & hangars	kWh	Energy supplier invoices – measured actuals
Gas consumption in LHR clubhouse and LHR revivals lounge	kWh	Estimated using the CIBSE Restaurant Gas benchmark for gas consumption (1250 kWh/m ²) and the known floor space and number of days active
Diesel (airport equipment)	Litres	Energy supplier invoices – measured actuals
Refrigerants (VHQ and retail property)	Kg	Property manager invoices – measured actuals
Vehicles (airport and operational)	Miles	Measured actuals. Data is collected by the VAA Facilities team, requesting year-end mileage data of each vehicle from drivers of all ground fleet vehicles

Scope 2

Activity	Unit	Source
Electricity at VAA offices, hangars, airport properties and retail stores	kWh	Energy supplier invoices

CO₂e emissions from purchased electricity are calculated using both a location-based and market-based approach.

The location-based approach is a method to quantify Scope 2 GHG emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries and is calculated using the UK grid average emission factors from UK Government conversion factors, representing average emissions from energy generation occurring in the UK in 2023.

The market-based approach is a method to quantify the Scope 2 GHG emissions of a company based on the specific GHG emissions emitted by the generators from which the company has chosen to purchase energy from, including any contractual instruments such as Renewable Energy Guarantees of Origin and energy supplier contractual evidence. This is calculated using emission factors derived from the GHG emission rate represented in the contractual instruments that meet Scope 2 Quality Criteria.

¹ <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>

² <https://catalog.data.gov/dataset/supply-chain-greenhouse-gas-emission-factors-v1-2-by-naics-6>

Scope 3

VAA calculate and report on indirect value chain emissions from 9 out of the 15 Scope 3 categories. These categories were both material and relevant to VAA. The methodologies and data used to calculate these are summarised below.

Categories 1, 2 & 4

A cost-based approach has been used to calculate the emissions for categories 1, 2 and 4.

- Category 1 – The indirect emissions from the extraction, production, and transportation of VAA's purchased goods and services, calculated using VAA's operational expenditure data on items and services purchased for their processes in the reporting year. This spend data is based on actual spend in year, on a cash basis, as opposed to the year the spend relates to. Fuel expenditure is excluded as this is captured in our Scope 1 and Scope 3 (category 3) emissions.
- Category 2 – The indirect emissions from the extraction, production, and transportation of VAA's capital goods, calculated using VAA's operational expenditure data on items and services purchased for their processes in the report year. This spend data is based on actual spend in year, on a cash basis.
- Category 4 – The indirect emissions from the transportation and distribution of products and services purchased, calculated using data on VAA's purchased logistics between all suppliers and its own operations. This spend data is based on actual spend in year, on a cash basis.

Each line-item value of spend was multiplied by an assigned cost-based United States (U.S) EPA emissions factor, providing a GHG emissions value for each item of spend. U.S. EPA categories were applied based on the category that best suited the expenditure, using the 3-tiered category information (categorised) or nominal information (uncategorised) detailed in the raw data.

For category 1. Purchased goods and services, this was done for both categorised and uncategorised spend.

As U.S. EPA factors relate to kgCO₂e/USD spend, VAA calculations have converted GBP to USD, using a 2023 average GBP: USD exchange rate of 1.2439 (source: Bloomberg). Given the transatlantic nature of VAA operations, the use of US EPA emissions factors was deemed appropriate.

Category 3 – Fuel and energy-related activities not included in Scope 1 or Scope 2

This includes emissions from three distinct activities:

- (1) Upstream emissions of purchased fuels (both stationary and mobile combustion).
- (2) Upstream emissions from purchased electricity.
- (3) Transmission & Distribution (T&D) Losses from purchased electricity.

The indirect upstream extraction, production, and transportation emissions from VAA's aviation fuel, office gas consumption, ground vehicle fuel and purchased electricity are calculated using the activity consumption data (used in Scope 1 and Scope 2 calculations) and applying UK Government well-to-tank emissions factors, plus transmission and distribution emissions factors for electricity (UK Government conversion factors).

Category 5 – Waste generated in operations

This includes emissions from the disposal and treatment of waste generated in the reporting year in facilities owned or controlled by VAA. VAA's waste is split into 3 distinct categories.

- (1) Ground waste (VHQ and LHR Hangar only – data provided by contractor. Waste at all other sites including airport properties (including Clubhouse), retail properties and Alexandra House, is managed by airport, shopping centre, and building management respectively)
- (2) Onboard aircraft cabin amenities waste
- (3) Catering waste onboard aircraft and production facility

Primary waste data of tonnages by waste pathway (recycling, incinerated for energy recovery, anaerobic digestion, and landfill) is provided by VAA's waste contractors, for VHQ ground waste, onboard waste and catering and production waste. UK Government emissions factors for given waste pathways are then applied, to calculate the emissions from each waste source. The following waste emissions factors are used:

- Waste Disposal, Open loop

- Waste Disposal, Refuse, Household residual waste, Combustion
- DEFRA 2023 Factors, Waste Disposal, Refuse, Organic: Mixed food and garden waste, Anaerobic digestion Waste Disposal, Refuse, Household residual waste, Landfill

Clubhouse ground waste is estimated using an extrapolation of VHQ waste, based on floor area, due to lack of primary data. This accurately uplifts ground waste to account for all ground waste.

Category 6 – Business travel

The calculation of emissions from VAA employee business travel includes staff business travel flights on Virgin Atlantic flights and ground-based staff business travel including, hotels, transportation, and fuel expenses, as well as crew hotel stays and crew ground transport. This category does not include flight crew flying emissions when operating a flight.

Staff business travel flights data is recorded for all staff flights booked internally, flown on VAA flights. Using this data, the distance (Great Circle Distance) determined by the route of travel, and the cabin class is used to assign the appropriate UK Government cabin-specific per passenger kilometre (pax.km) emissions factor to each journey.

Staff business travel distance travelled (miles) by vehicle-type is recorded via the employee expenses system, detailing the claimed mileage expenses for staff business travel. The appropriate UK Government passenger transport emissions factor (kgCO₂e/km, kgCO₂e/pax.km) emissions factor is assigned and applied to the total mileage by vehicle type. The emissions factors reflect tank-to-wake emissions.

Hotel stay related business travel data is recorded via the employee expenses system, detailing the number of nights hotel stay by country. The appropriate UK Government country-specific hotel stay (kgCO₂e/night) emissions factor is assigned and applied to the total night's hotel stay by country. Where a country-specific factor is not available, a European average factor was applied to non-listed European countries, and a global average factor was applied to non-listed ex. European countries.

A cost-based approach has been used to calculate the indirect emissions from the extraction, production, and transportation related to expensed business travel fuel purchases, and expensed airfare (non-VS flights), rail, bus, and taxi business travel journeys. These emissions were calculated using employee expenses data reflecting claimed expenses spend in-year, on a cash basis. The total expensed value of each expenses category of spend was multiplied by an assigned cost-based U.S. EPA emissions factor, providing a GHG emissions value for each item of spend. U.S. EPA categories were applied based on the category that best suited the expenditure, using the category information provided.

As U.S. EPA factors relate to kgCO₂e/USD spend, VAA calculations have converted GBP data to USD, using a 2023 average GBP:USD exchange rate (source: Bloomberg). Given the transatlantic nature of VAA operations, the use of US EPA emissions factors was deemed appropriate.

Category 7 – Employee Commuting

The calculation of employee commuting emissions between home and work is based on the results of a VAA staff commuting survey and UK Government emissions factors (well-to-wake) by mode of transport. Modes of transport included car, car share, train, bus, taxi, motorbike, air travel, walk and cycle. The responses from staff provided a dataset of commuting distance and mode. The survey data was split by ground-based staff and flight crew, as they typically have different commuting patterns. Using the distance and mode and commuting frequency assumptions, the total emissions were calculated by applying the relevant UK Government emissions factor to the distance commuted by each mode. The emissions were then uplifted to reflect the total number of staff (ground and flight crew).

Category 9 – Downstream transportation and distribution

The calculation of emissions from transportation and distribution of products sold between VAA's operations and the end consumer is based on passenger travel to the airport of departure and from the airport where they land to their final destinations. Data on the number of passengers by route and average distances from destination and origin airports to town centres were applied to calculate emissions. Average UK Government emission factors for both train and unknown fuel car transport types were used. Total travel distance was doubled to account for travel either side of each airport.

Category 11 – Use of sold products

The emissions related to hotel accommodation sold by VAA is calculated using sales data detailing the number of hotel nights sold, by country. The appropriate UK Government country-specific hotel stay (kgCO₂e/night) emissions factor is assigned and applied to the total night's hotel stay by country. Where a country-specific factor is not available, a European average factor was applied to non-listed European countries, and a global average factor was applied to ex. European countries. This 2023 methodology related to sold hotels reflects an update to the methodology used by Virgin Atlantic, in an effort to capture as much category 11 emissions aligned to the GHG protocol as possible.

The remaining emissions related to the end use of other goods and services sold by VAA is calculated based on cost of sales. Cost of sales is categorised by type of sales, including Virgin Holidays tours, transfer costs etc. Each item's/service's total cost of sales value was multiplied by an assigned cost-based US EPA emissions factor, providing a GHG emissions value associated with each cost of sale. US EPA categories were applied based on the category that best suited the expenditure, using the category information provided. It is assumed that 80% of the cost of sales from flights is attributable to Virgin Atlantic, and therefore not included as these emissions are already accounted for in the aircraft fuel burn emissions. 20% is attributable to Virgin Holidays and is included in this category emissions calculation. This assumption is based on historic average data of the split between VAA vs. other airlines cost of sales from flights.

As U.S. EPA factors relate to kgCO₂e/USD, VAA calculations have been converted GBP data to USD, using a 2023 average GBP: USD exchange rate (source: Bloomberg). Given the transatlantic nature of VAA operations, the use of US EPA emissions factors was deemed appropriate.

Virgin Atlantic is further working to improve the remaining calculation of category 11 use of sold products emissions in future reporting cycles, by improving data quality and methodological approach.

Excluded

The remaining 6 Scope 3 categories are not calculated by VAA, as they are either not relevant to the operation, or are deemed as immaterial.

Excluded as not relevant:

- Category 8 – Upstream leased assets.
 - The emissions from upstream leased assets have already been included under Scope 1 and 2 inventory, as the footprint has been calculated following the operational control approach
- Category 10 – processing of sold products
 - Not relevant, VAA do not sell intermediate products
- Category 14 – Franchises
 - No relevant franchises
- Category 15 – Investments
 - No relevant investments

Excluded as immaterial:

- Category 12 – End of life treatment of sold products
 - VAA sold products are fundamentally transportation services, from which there is no end-of-life treatment
- Category 13 – Downstream leased assets
 - VAA have minimal downstream leased assets

Emissions factors

GHG emissions are reported in line with the UK Government's 'Environmental Reporting Guidelines: including mandatory greenhouse gas emissions reporting guidance' (2013). These emissions calculations use:

Emissions source	Emissions factor	EF units	UK 2023 Conversion Factor Name/Source
Aircraft fuel	3,178.37	kgCO ₂ e/tonne	Fuels - Liquid Fuels - Aviation Turbine Fuel - tonnes
Natural gas	0.1829	kgCO ₂ e/kWh	Fuels - Gaseous Fuels - Natural Gas - kWh (Gross CV)
Refrigerants – Rf10a	1,924.00	kgCO ₂ e/kg	Refrigerant & Other - Kyoto Protocol - blends - R410a
Diesel	2.5121	kgCO ₂ e/litres	Fuels - Liquid Fuels - Diesel (average biofuel blend) - litres
Diesel Small Car	0.2242	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Small Car - Diesel
Diesel Medium Car	0.2690	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Medium Car - Diesel
Diesel Large Car	0.3357	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Large Car - Diesel
Petrol Small Car	0.2266	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Small Car - Petrol
Petrol Hybrid Medium Car	0.1755	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Medium Car - Hybrid
Petrol Hybrid Large Car	0.2453	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Large Car - Hybrid
Diesel Class I Van	0.2287	kgCO ₂ e/miles	Delivery vehicles- Vans - Class I (up to 1.305 tonnes) - Diesel
Diesel Class II Van	0.2801	kgCO ₂ e/miles	Delivery vehicles- Vans - Class II (1.305 to 1.74 tonnes) - Diesel
Diesel Class III Van	0.4079	kgCO ₂ e/miles	Delivery vehicles - Vans - Class III (1.74 to 3.5 tonnes) - Diesel
Diesel Average Van	0.3722	kgCO ₂ e/miles	Delivery vehicles - Vans - Average (up to 3.5 tonnes) - Diesel
Petrol Average Van	0.3240	kgCO ₂ e/miles	Delivery vehicles- Vans - Average (up to 3.5 tonnes) - Petrol
Electric (car)	-	kgCO ₂ e/miles	Passenger vehicles - Cars (by size) - Average Car - Battery Electric Vehicle
Electric Van	-	kgCO ₂ e/miles	Delivery vehicles - Vans - Average (up to 3.5 tonnes) - Battery Electric Vehicle
WTT small car diesel	0.0546	kgCO ₂ e/miles	WTT pass vehs & travel land - Cars (by size) - Small Car - Diesel
WTT medium car diesel	0.0656	kgCO ₂ e/miles	WTT pass vehs & travel land - Cars (by size) - Medium Car - Diesel
WTT large car diesel	0.0821	kgCO ₂ e/miles	WTT pass vehs & travel land - Cars (by size) - Large Car - Diesel
WTT small car petrol	0.0629	kgCO ₂ e/miles	WTT pass vehs & travel land- Cars (by size) - Small Car - Petrol
WTT medium car Petrol Hybrid	0.0456	kgCO ₂ e/miles	WTT pass vehs & travel land - Cars (by size) - Medium Car - Hybrid
WTT large car Petrol Hybrid	0.0625	kgCO ₂ e/miles	WTT pass vehs & travel land - Cars (by size) - Large Car - Hybrid
WTT van class I diesel	0.2287	kgCO ₂ e/miles	WTT - delivery vehs & Freight - WTT vans - class I diesel
WTT van class II diesel	0.2801	kgCO ₂ e/miles	WTT - delivery vehs & Freight - WTT vans - class II diesel
WTT van class III Diesel	0.4079	kgCO ₂ e/miles	WTT - delivery vehs & Freight - WTT vans - class III diesel

WTT average van diesel	0.3722	kgCO2e/miles	WTT - delivery vehs & Freight - WTT vans - average van diesel
WTT average van petrol	0.3240	kgCO2e/miles	WTT - delivery vehs & Freight - WTT vans - average van petrol
WTT electric (car)	0.0196	kgCO2e/miles	WTT - passenger vehicles - Cars (by size) - Average Car - Battery Electric Vehicle
WTT electric Van	0.0263	kgCO2e/miles	WTT - delivery vehicles - Vans - Average (up to 3.5 tonnes) - Battery Electric Vehicle
WTT Aviation turbine fuel	661.79	tonnes	WTT Fuels - Liquid Fuels - Aviation turbine fuel - Tonnes
WTT Natural Gas	0.0302	kWh	WTT Fuels - Gaseous Fuels - Natural Gas (Gross CV)
WTT Diesel	0.6110	litres	WTT Fuels - Liquid Fuels - Diesel (average biofuel blend) - litres
Purchased Electricity – location-based	0.2071	kgCO2e/kWh	UK Electricity generated
Purchased Electricity – market-based	-	kgCO2e/kWh	Energy supplier
T&D - Electricity	0.0179	kgCO2e/kWh	Transmission and Distribution
WTT - Electricity	0.0459	kgCO2e/kWh	WTT UK & Overseas elec
WTT T&D	0.0040	kgCO2e/kWh	WTT - Elec Transmission and Distribution
Waste recycled	21.2808	kgCO2e/tonne	Waste Disposal, Open loop
Waste incinerated	21.2808	kgCO2e/tonne	Waste Disposal, Refuse, Household residual waste, Combustion
Waste anaerobic digestion	8.9124	kgCO2e/tonne	Waste Disposal, Refuse, Organic: Mixed food and garden waste, Anaerobic digestion
Waste landfill	497.0447	kgCO2e/tonne	Waste Disposal, Refuse, Household residual waste, Landfill
Air business travel - Long-haul, to/from UK - Economy class	0.2001	kgCO2e/passenger.km	Air business travel - Flights - with RF - Long-haul, to/from UK - Economy class
Air business travel - Long-haul, to/from UK - Premium economy class	0.3202	kgCO2e/passenger.km	Air business travel - Flights - with RF - Long-haul, to/from UK - Premium economy class
Air business travel - Long-haul, to/from UK - Business class	0.5803	kgCO2e/passenger.km	Air business travel - Flights - with RF - Long-haul, to/from UK - Business class
Air business travel - International, to/from non-UK - Economy class	0.1346	kgCO2e/passenger.km	Air business travel - Flights - with RF - International, to/from non-UK - Economy class
Air business travel - International, to/from non-UK - Premium economy class	0.2154	kgCO2e/passenger.km	Air business travel - Flights - with RF - International, to/from non-UK - Premium economy class
Air business travel - International, to/from non-UK - Business class	0.3904	kgCO2e/passenger.km	Air business travel - Flights - with RF - International, to/from non-UK - Business class
Business travel - small car - diesel	0.2242	kgCO2e/mile	Business travel - land - Cars - Small car - Diesel - miles
Business travel - large car - diesel	0.3357	kgCO2e/mile	Business travel - land - Cars - Large car - Diesel - miles
Business travel - medium car - diesel	0.2690	kgCO2e/mile	Business travel - land - Cars - Medium car - Diesel - miles

Business travel - small car - petrol	0.2266	kgCO2e/mile	Business travel - land - Cars - Small car - Petrol - miles
Business travel - large car - diesel	0.4381	kgCO2e/mile	Business travel - land - Cars - Large car - Petrol - miles
Business travel - medium car - diesel	0.2868	kgCO2e/mile	Business travel - land - Cars - Medium car - Petrol - miles
Business travel - average car - unknown	0.2682	kgCO2e/mile	Business travel - land - Cars - Average car - Unknown - miles
Business travel - motorbike - average	0.1829	kgCO2e/mile	Business travel - land - Motorbike - Average - miles
Passenger vehicles- Average car- unknown fuel	0.1666	kg CO2e/km	Passenger vehicles- Average car- unknown fuel
Business Travel- Land- Rail- National Rail	0.0355	kg CO2e/passenger km	Business Travel- Land- Rail- National Rail
Business Travel- Land- Bus- Average local bus	0.1022	kg CO2e/passenger km	Business Travel- Land- Bus- Average local bus
Business Travel- Land- Taxi- Regular Taxi	0.1486	kg CO2e/passenger km	Business Travel- Land- Taxi- Regular Taxi
Passenger vehicles- Average Motorbike	0.1137	kg CO2e/km	Passenger vehicles- Average Motorbike
Business Travel-air- Domestic- Average passenger- With RF	0.2726	kg CO2e per passenger km	Business Travel-air- Domestic- Average passenger- With RF
WTT-pass vehs & travel - land- Average Car- unknown fuel	0.0437	kg CO2e/km	WTT-pass vehs & travel -land- Average Car- unknown fuel
WTT-pass vehs & travel - land- National Rail	0.0090	kg CO2e/passenger km	WTT-pass vehs & travel -land- National Rail
WTT-pass vehs & travel - land- Average local bus	0.0249	kg CO2e/passenger km	WTT-pass vehs & travel -land- Average local bus
WTT-pass vehs & travel - land- Regular Taxi	0.0370	kg CO2e/passenger km	WTT-pass vehs & travel -land- Regular Taxi
WTT-pass vehs & travel - land- Average Motorbike	0.0296	kg CO2e/km	WTT-pass vehs & travel -land- Average Motorbike
WTT-Business travel air- Domestic- Average Passenger- With RF	0.0335	kg CO2e per passenger km	WTT-Business travel air- Domestic- Average Passenger- With RF
Hotel stay - Average	38.78	kgCO2e/night	Hotel stay - average of non-European countries
Hotel stay - Brazil	8.70	kgCO2e/night	Hotel stay - Brazil
Hotel stay - Canada	7.40	kgCO2e/night	Hotel stay - Canada
Hotel stay - China	53.50	kgCO2e/night	Hotel stay - China
Hotel stay - Europe average	11.57	kgCO2e/night	Hotel stay - Average of European countries
Hotel stay - France	6.70	kgCO2e/night	Hotel stay - France
Hotel stay - Germany	13.20	kgCO2e/night	Hotel stay - Germany
Hotel stay - India	58.90	kgCO2e/night	Hotel stay - India
Hotel stay - Italy	14.30	kgCO2e/night	Hotel stay - Italy
Hotel stay - Jordan	68.90	kgCO2e/night	Hotel stay - Jordan

Hotel stay - Maldives	152.20	kgCO2e/night	Hotel stay - Maldives
Hotel stay - Netherlands	14.80	kgCO2e/night	Hotel stay - Netherlands
Hotel stay - Philippines	54.30	kgCO2e/night	Hotel stay - Philippines
Hotel stay - Portugal	19.00	kgCO2e/night	Hotel stay - Portugal
Hotel stay - South Africa	51.40	kgCO2e/night	Hotel stay - South Africa
Hotel stay - Spain	7.00	kgCO2e/night	Hotel stay - Spain
Hotel stay - Switzerland	6.60	kgCO2e/night	Hotel stay - Switzerland
Hotel stay - Turkey	32.10	kgCO2e/night	Hotel stay - Turkey
Hotel stay - UK (London)	11.50	kgCO2e/night	Hotel stay - UK (London)
Hotel stay - United Arab Emirates	63.80	kgCO2e/night	Hotel stay - United Arab Emirates
Hotel stay - United Kingdom	10.40	kgCO2e/night	Hotel stay - United Kingdom
Hotel stay - United States	16.10	kgCO2e/night	Hotel stay - United States
Hotel stay - Vietnam	38.50	kgCO2e/night	Hotel stay - Vietnam
Hotel stay - Hong Kong, China	51.50	kgCO2e/night	Hotel stay - Hong Kong, China
Hotel stay - Indonesia	62.70	kgCO2e/night	Hotel stay - Indonesia
Hotel stay - Mexico	19.30	kgCO2e/night	Hotel stay - Mexico
Hotel stay - Singapore	24.50	kgCO2e/night	Hotel stay - Singapore
Hotel stay - Thailand	43.40	kgCO2e/night	Hotel stay - Thailand

US EPA industry category emissions source	Emissions factor	EF units
813B00 - Civic and Social Organizations	0.136	kg CO2e/USD
722A00 - Caterers	0.155	kg CO2e/USD
541200 - Other Accounting Services	0.050	kg CO2e/USD
541300 - Engineering Services	0.125	kg CO2e/USD
52A000 - Monetary Authorities-Central Bank	0.048	kg CO2e/USD
541800 - Advertising Agencies	0.129	kg CO2e/USD
541512 - Computer Systems Design Services	0.077	kg CO2e/USD
721000 - Hotels (except Casino Hotels) and Motels	0.183	kg CO2e/USD
524200 - Insurance Agencies and Brokerages	0.034	kg CO2e/USD
561700 - Other Services to Buildings and Dwellings	0.167	kg CO2e/USD
518200 - Data Processing, Hosting, and Related Services	0.148	kg CO2e/USD
541610 - Other Management Consulting Services	0.084	kg CO2e/USD
561400 - All Other Business Support Services	0.118	kg CO2e/USD
561500 - All Other Travel Arrangement and Reservation Services	0.103	kg CO2e/USD
561600 - Security Systems Services (except Locksmiths)	0.080	kg CO2e/USD
515100 - Radio Networks	0.110	kg CO2e/USD
611B00 - Professional and Management Development Training	0.125	kg CO2e/USD
233262,233210,2332A0,233240,230302,233412,2332D0,2334A0,233230,233411,230301 - Other Foundation, Structure, and Building Exterior Contractors	0.245	kg CO2e/USD
541100 - All Other Legal Services	0.054	kg CO2e/USD
812300 - Drycleaning and Laundry Services (except Coin-Operated)	0.162	kg CO2e/USD

550000 - Corporate, Subsidiary, and Regional Managing Offices	0.130	kg CO2e/USD
517A00 - All Other Telecommunications	0.125	kg CO2e/USD
54151A - Computer Facilities Management Services	0.087	kg CO2e/USD
561300 - Executive Search Services	0.033	kg CO2e/USD
315000 - Apparel Accessories and Other Apparel Manufacturing	0.145	kg CO2e/USD
480000 - All Other Miscellaneous Store Retailers (except Tobacco Stores)	0.163	kg CO2e/USD
621900 - All Other Miscellaneous Ambulatory Health Care Services	0.181	kg CO2e/USD
48A000 - Other Airport Operations	0.208	kg CO2e/USD
485000 - Limousine Service	0.499	kg CO2e/USD
813B00 - Professional Organizations	0.136	kg CO2e/USD
423400 - Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	0.085	kg CO2e/USD
423400 - Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	0.085	kg CO2e/USD
5419A0 - Marketing Research and Public Opinion Polling	0.075	kg CO2e/USD
5419A0 - Translation and Interpretation Services	0.075	kg CO2e/USD
423400 - Other Professional Equipment and Supplies Merchant Wholesalers	0.085	kg CO2e/USD
481000 - Scheduled Passenger Air Transportation	0.976	kg CO2e/USD
541300 - Architectural Services	0.125	kg CO2e/USD
233411, 233240, 2332A0, 230301, 2332D0, 2334A0, 233210, 230302, 233262, 233230, 233412 - All Other Specialty Trade Contractors	0.245	kg CO2e/USD
48A000 - Air Traffic Control	0.208	kg CO2e/USD
611B00 - Educational Support Services	0.125	kg CO2e/USD
512100 - Motion Picture and Video Distribution	0.071	kg CO2e/USD
517110 - Wired Telecommunications Carriers	0.082	kg CO2e/USD
33721A - Office Furniture (except Wood) Manufacturing	0.305	kg CO2e/USD
339940 - Office Supplies (except Paper) Manufacturing	0.292	kg CO2e/USD
621400 - All Other Outpatient Care Centers	0.116	kg CO2e/USD
621300 - Offices of All Other Miscellaneous Health Practitioners	0.120	kg CO2e/USD
336411 - Aircraft Manufacturing	0.150	kg CO2e/USD
532400 - Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.140	kg CO2e/USD
493000 - Other Warehousing and Storage	0.568	kg CO2e/USD
561900 - All Other Support Services	0.121	kg CO2e/USD
484000 - General Freight Trucking, Long-Distance, Truckload	1.115	kg CO2e/USD
485000 - All Other Transit and Ground Passenger Transportation	0.499	kg CO2e/USD
447000 - Gasoline Stations with Convenience Stores	0.196	kg CO2e/USD
532100 - Passenger Car Rental	0.143	kg CO2e/USD
485000 - Taxi Service	0.499	kg CO2e/USD
48A000 - Scenic and Sightseeing Transportation, Other	0.208	kg CO2e/USD
483000 - Deep Sea Passenger Transportation	0.618	kg CO2e/USD
713100 - Amusement and Theme Parks	0.138	kg CO2e/USD

Reporting of Sustainable Aviation Fuel (SAF) emissions and avoided emissions

In 2023, VAA purchased and used 1,671 metric tonnes of neat SAF. Neat SAF refers to the sustainable portion (bioquantity) of the SAF only, and not the fossil jet fuel that it is blended with. The emissions from the consumption of this SAF on our aircraft are reported as an additional disclosure. These emissions are reported on a well-to-wake basis, as an additional disclosure separate to VAA's main Scope 1 and 3 reported emissions. The well-to-wake basis reflects the fact that the emissions of SAF relate to both Scope 1 and Scope 3 and are encompassed in one emissions factor related to the fuel used.

The emissions of the SAF are calculated using data provided by the producer of the SAF, evidenced through the Product Transfer Document, or Proof of Sustainability, documentation. VAA's 2023 SAF emissions are calculated using data provided by Neste Oyj. The emissions data of the SAF are calculated by Neste Oyj against a fossil fuel comparator of 94 gCO₂e/MJ, as per Renewable Energy Directive (2018/2001/EU Annex V) ("RED II").

The emissions savings of SAF are reported on the same basis as above, using the % reduction in emissions intensity (gCO₂e/MJ) vs. the fossil fuel comparator. Note, SAF is not yet recognised by the GHG protocol, and is therefore reported as a supplementary disclosure.

Carbon intensity metric: CO₂/RTK

Virgin Atlantic disclose an annual carbon emissions intensity metric of CO₂ per revenue tonne kilometre (RTK). This is carbon efficiency metric related to Virgin Atlantic's aircraft fuel burn only. It is calculated as follows:

$$\frac{\text{Total CO}_2 \text{ emissions (kg)}}{\text{Total revenue tonne kilometres}}$$

Total CO₂ emissions relates to the emissions from Virgin Atlantic's annual aircraft fuel burn from all flights in 2023.

- Total CO₂ emissions = Total tonnes of jet fuel burn x 3.1497 kgCO₂/kg emissions factor
- Tonnes jet fuel data is tracked in Virgin Atlantic's Sustainability Warehouse database at flight level and is calculated using fuel on board data collated directly from the aircraft and recorded/invoiced fuel uplifts.
- Emissions factor source: UK Government 2023 conversion factors, Aviation turbine fuel

Revenue tonne kilometre is calculated as the annual total revenue-generating tonnage flown and multiplied by distance over which it is flown.

- Revenue generating tonnage is the sum of revenue paying passengers * 100 kg/pax (industry recognised standard value), and the weight of revenue cargo, collated from each flight's final load sheet.
 - Revenue passengers refers to all fare-paying passengers, non-revenue passengers refers to non-fare paying passengers, including infants.
 - Revenue cargo refers to the loadsheet net weight, excludes non-revenue generating cargo weight including pallet weight, ULDs and equipment.
- This is multiplied by the Great Circle Distance (GCD) kilometres flown +8%. GCD is the shortest distance between two points, measured along the surface of the earth. GCD is taken from the flight planning system, where it is calculated using the Vincenty formula.
- As aircraft rarely fly this direct route exactly, an additional factor is used to account for indirect routing, holding etc. The additional +8% is determined by UK Greenhouse Gas Inventory reporting³.
- Both the revenue tonnes and GCD are tracked in Virgin Atlantic's Sustainability Warehouse database at flight level.

Reporting period

Virgin Atlantic report carbon emissions on a calendar year basis. This report summarises the period 1st January 2023 to 31st December 2023.

Restating of historic emissions

Virgin Atlantic follow the GHG Protocol accounting procedures that require that historic emissions data be recalculated as organisations undergo significant structural changes such as acquisitions, divestments, and

³ [DfT](#), Journey emissions comparisons: Methodology and guidance

mergers or methodology changes such as error correction and changes in calculation methodology. Historic year adjustments are necessary as structural and methodological changes will change the historical reporting profile, making meaningful comparisons over time difficult. To allow like-for-like comparison over time, historic emissions data may need to be recalculated. Virgin Atlantic approach to GHG emissions restatement follows our internal restatement policy, defining the approach and restatement threshold used to determine any historic emissions restatement. Virgin Atlantic's approach is continuously reviewed during the year. No restatement of historic emissions were required in 2023.

2. Diversity, Equity and Inclusion Methodology

Overview

Annual Report methodology

Calculation methodology data is extracted from the HR management system to calculate our diversity figures. The diversity figure published is calculated based on the number of employees at the 31st of December 2023. An employee is defined as a person with an employment relationship with Virgin Atlantic, who is paid by Virgin Atlantic through our payroll. This includes those who are on short/long-term leave and on parental leave, however, excludes those who are on Income Protection.

Percentage of women in D+ leadership roles

We define those who are in leadership positions as those who are in the following grades: D, E, F, G, H and I. Our leadership population does not include our pilot workforce as they are graded out with our leadership structure. All our gender data relies on our employees' classification of their own gender as male or female. This is a mandatory, binary field in our HR system and therefore Virgin Atlantic has a gender disclosure rate of 100%.

We use the following methodology to calculate: Percentage of females in D+ roles = (females in D+ roles) / (total D+ workforce)

Ethnicity of entire workforce

Total workforce refers to all employees, regardless of paygrade. The table below shows the groups that are defined as diverse and non-diverse. This data relies on our employees self-disclosing. Diverse employees are those that have self-declared their diversity status. Individuals who have chosen not to declare their diversity status are included in the calculation as non-diverse employees. At the 31st of December 2023, 91.5% of employees had disclosed their ethnicity.

We use the following methodology to calculate: Percentage of ethnic minority workforce = (Total ethnic minority employees) / (Total employees).

American Indian Alaskan Native	Ethnically diverse	Mixed – Any other mixed or multiple ethnic background	Ethnically diverse
Asian	Ethnically diverse	Mixed – White & Asian	Ethnically diverse
Asian – Any other Asian background	Ethnically diverse	Mixed – White & Black African	Ethnically diverse
Asian – Bangladeshi	Ethnically diverse	Mixed – White & Black Caribbean	Ethnically diverse
Asian – Chinese	Ethnically diverse	Native Hawaiian and Other Pacific Islander	Ethnically diverse
Asian – Indian	Ethnically diverse	Other – Any other ethnic group	Ethnically diverse
Asian – Pakistani	Ethnically diverse	Other – Arab	Ethnically diverse
Black – African	Ethnically diverse	White – Any other white background	Non-diverse
Black – Any other	Ethnically diverse	White	Non-diverse
Black – Caribbean	Ethnically diverse	White – English/Welsh/Scottish/Norther Irish/ British	Non-diverse
Black or African American	Ethnically diverse	White – Gypsy or Irish Traveller	Non-diverse
Chinese	Ethnically diverse	White – Irish	Non-diverse
Hispanic	Ethnically diverse	White and Black African	Non-Diverse
Indian	Ethnically diverse		