Basis of Reporting

For Non-Financial Metrics

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Contents

1. Purpose

This purpose of this document is to specify the approach, boundaries and methodologies applied by Genus Plc to the reported non-financial metrics and targets published in the Annual Report.

2. Non-financial metrics and targets

Genus has determined the non-financial metrics it will calculate, track and respond to, to drive improvement in sustainability performance. The reported non-financial metrics include:

Non-financial metric	Reported unit
Scope 1 Greenhouse Gas (GHG) emissions	tCO_2e
Scope 2 GHG emissions (location-based)	tCO_2e
Scope 2 GHG emissions (market-based)	tCO_2e
Scope 3 Category 1 GHG emissions: Purchased goods and services	tCO_2e
Scope 3 Category 2 GHG emissions: Capital expenditure	tCO_2e
Scope 3 Category 3 GHG emissions: Upstream fuel and energy related activities	tCO_2e
Scope 3 Category 4 GHG emissions: Upstream transport and distribution	tCO_2e
Scope 3 Category 5 GHG emissions: Waste generated in Operations	tCO_2e
Scope 3 Category 6 GHG emissions: Business travel	tCO_2e
Total energy consumed	kWh
Women in management roles	%
Recordable Injury Frequency Rate	%
Genomic Bull Net Merit Index	NM$
Annual reduction in carbon emissions from genetic improvements (dairy)	tCO_2e

These metrics are used to quantify and monitor performance against the following sustainability targets:

1. Reduce Primary Intensity Raio (PIR) by 25% by 2030 from the 2019 base-year

2. Reduce absolute GHG emissions in accordance with Net Zero Roadmap

3. Increase genomic bull net merit index by one standard deviation per generation

4. Increase the proportion of female employees in management roles

5. Reduce Recordable Injury Frequency Rate (RIFR) by 5% year-on-year

3. Reporting period

Genus's sustainability reporting period is 1 April to 31 March. The financial year is 1 July to 30 June. The sustainability reporting period was changed in FY24 to improve the accuracy and completeness of data reported, and to reduce the use of estimates to enable a full twelve months to be reported.

4. Boundaries and approach

When applying boundaries to non-financial metrics, Genus incorporates its own operations across all business units, subsidiaries and joint ventures, and in all countries in which it operates. Any exception to the boundaries applied to a metric or target is documented within the metric or target methodology.

Genus aligns its approach to GHG emission reporting to the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (Revised Edition: WRI). GHG emissions are accounted for based on 'equity share approach' as defined by the Greenhouse Gas Protocol. GHG emissions which derive from joint ventures are reported at a level equivalent to Genus's investment in the venture.

Where appropriate, Genus calculates and reports its GHG emissions in accordance with methodologies defined within applicable Greenhouse Gas Protocol standards and/or technical guidance. Reference to the specific standard or guidance applied to calculations can be found within the related methodology.

4.1   Greenhouse Gas emissions reporting scope

The GHG emissions that have been reported include carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4). These gases are reported on a carbon dioxide equivalent (CO_2e) basis (IPCC's Sixth Assessment Report).

In relation to GHG Scope 3 emissions, Genus is able to estimate most of the applicable activities that contribute to its upstream value chain emissions. Excluded from Genus's upstream Scope 3 emissions are emissions from employee commuting (Scope 3 Category 7). Due to the consolidation approach taken by Genus, emissions from upstream leased assets (Scope 3 Category 8) are included within Genus's Scope 1 and 2 emissions.

The emissions calculated for purchased goods and services (Scope 3 Category 1) currently excludes emissions related to bovine multipliers.

Genus is unable to estimate emissions from its downstream Scope 3 activities (Categories 9 to 15) at the current time.

The following image summarises the Scopes and activities includes in Genus's Greenhouse Gas emission reporting:
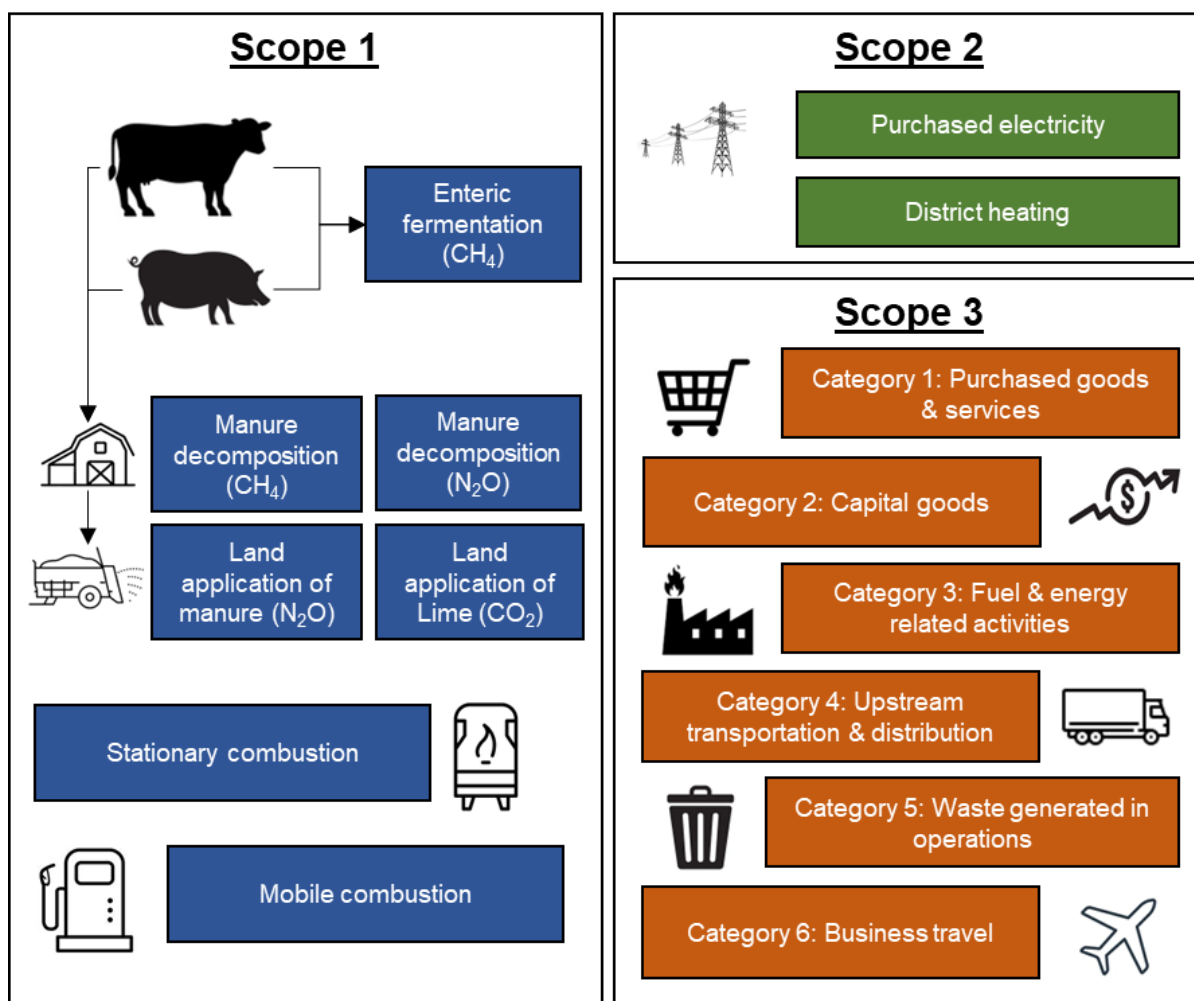
4.2   Base-year and re-baselining policy

Genus has determined its base-year as 2019 due to being the earliest verifiable data set.

To maintain consistency and relevance, base year GHG emissions may be retrospectively recalculated when significant changes occur in the company or its subsidiary business units (such as acquisitions or divestments).

In addition, changes to methodologies such as improved emission factors, improved activity data and arising best-practice can materially impact a baseline. Furthermore, discovery of significant errors in past reporting, and small errors that are collectively significant, may also require us to recalculate our base year.

Genus has determined the threshold for significant changes for recalculating baseline at +/- 10%. All decisions related to re-baselining are taken by the Genus Sustainability Committee.

4.3   Sources of GHG emission factors

1. Emissions Factor Data Source IPCC 'Guidelines for National Greenhouse Gas Inventories'

2. Department for Environment, Food & Rural Affairs (DEFRA)/DECC UK Government Greenhouse Gas Conversion Factors for Company Reporting (released 28 June 2023)

3. Environmental Protection Agency (US-EPA): Emission Factors for Greenhouse Gas Inventories (modified February 13, 2024)

4. Carbon Footprint Ltd Country Specific Electricity Grid Greenhouse Gas Emission Factors 2023 (released 30 July 2023)

5. Supply Chain Greenhouse Gas Emission Factors v1.2 by NAICS-6 (released 2021)

6. Global Livestock Environmental Assessment Model (GLEAM): Model Description version 3.0 by the UN Food and Agriculture Organisation (accessed April 2024)

5. Methodologies for calculating non-financial metrics

The follow tables detail the methodologies and required inputs for each activity contributing to the non-financial metrics.

5.1   Scope 1: Stationary Combustion emissions and energy

Standard and/or method applied:	Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (Revised Edition: WRI).
Primary data required:	Volume or mass of each fuel type (i.e., Natural Gas, Diesel, Petrol/Gasoline, Propane/LPG, burning Oil) consumed in stationary combustion processes.
Sources of primary data:	Fuel consumption for stationary combustion is maintained by the individual locations and is reported using a template or through providing fuel invoices or receipts.
Secondary data (emissions):	Emission factors (EF) for the primary fuel sources combusted, e.g., $kgCO_2e$/litre. Source: DEFRA Conversion Factors 2023 (updated 28 June 2023).
Calculation:	$$\sum (Fuel\ consumed\ (e.g., litre)\ x\ EF\ for\ that\ fuel\ (e.g., \frac{kgCO2e}{litre})$$
Related targets/KPIs:	Scope 1 emissions are included within both the PIR and net zero roadmap.
Secondary data (energy):	Energy conversion factors that consider the fuel properties, e.g., kWh/litre. Source: DEFRA Conversion Factors 2023 (updated 28 June 2023)
Specific considerations:	GHG emissions related to the extraction, refining and transportation of fuel are calculated separately under Scope 3 Category 3.

5.2   Scope 1: Mobile combustion emissions and energy

Genus leases and operates its own fleet of vehicles, either as part of the larger UK and North America fleets, or as smaller locally managed fleet. Genus also owns and operates non-road vehicles on our farms, such as tractors or forklift trucks.

Standard and/or method applied:	Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (Revised Edition: WRI). Hybrid-method (fuel-based and distance-based).
Primary data required:	Volume of mass of each fuel type (e.g., petrol, diesel, CNG) used in mobile combustion of vehicles owned and/or operated by Genus. Distances travelled, categorised within combinations of (1) vehicle type, (2) vehicle/engine size, and (3) fuel type (e.g., Van - Class II - Petrol).
Sources of primary data:	UK Fleet: Centralised system report (vehicle information and distances). North America Fleet: Centralised system report (vehicle information and distances). All other locations: Location template detailing vehicle information, and fuel consumed or distances.
Secondary data (emissions):	Emission factors for the primary fuel sources combusted, e.g., $kgCO_2e$/litre. Emission factors (distance-based) for each vehicle combination, e.g., $kgCO_2e$/mile. Source: DEFRA Conversion Factors 2023 (updated 28 June 2023).
Calculation:	$\sum(Fuel\ consumed\ (e.g., Litre)\ x\ EF\ for\ the\ fuel\ (e.g., \frac{kgCO2e}{Litre}) +$ $\sum(distance\ (e.g., km)\ x\ EF\ for\ the\ vehicle\ combination(e.g., \frac{kgCO2e}{mile}))$
Targets/KPIs:	Scope 1 emissions are included within both the PIR and net zero roadmap.
Secondary data (energy):	Fuel-based energy conversion factors that consider the fuel properties of the applicable fuel, e.g., kWh/litre. Distance-based energy conversion factors to calculate energy use where only distance data is available, e.g., kWh/mile. Source: DEFRA Conversion Factors 2023 (updated 28 June 2023)
Specific considerations:	GHG emissions related to the extraction, refining and transportation of fuel are calculated separately under Scope 3 Category 3. When calculating emissions from Diesel the emission factors for average biofuel blend is applied, in line with DEFRA guidance. The exception is for diesel consumed in the USA. In that instance, it is assumed diesel is 100% mineral oil. In some instances, when using the distance-based method we may not have, or may not be certain of, vehicle size and/or fuel type. In these instances, an average vehicle (car or van) emission factor is used and/or an emission factor where fuel type is unknown.

5.3   Scope 1: Enteric fermentation emissions

Several global locations within both the porcine (PIC) and bovine (ABS) business units house livestock which contributes to our Scope 1 emissions. Enteric fermentation is a digestive process that takes place in the rumen, where microorganisms break down carbohydrates and release methane as a byproduct.

Method applied:	Enteric fermentation livestock emissions are calculated using a proprietary model developed by Promar which uses the IPCC guidelines and the 2019 refinements to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, specifically Volume 4, Chapter 10 (Emissions from Livestock and Manure Management).
Primary data required:	Animal inventory (number of animals and average animal weight in defined life stages). Diet (composition of diet ingredients and related metabolic or digestible energy).
Sources of primary data:	Centralised system report of animal inventory numbers and average weights. Centralised records of dietary information. Locally provided data using provided template for inventory, weight, and diet where it is unavailable centrally.
Secondary data required:	Promar model is proprietary and so specific methodology and secondary data required are not relevant to this basis of reporting.
Targets/KPIs:	Scope 1 emissions from enteric fermentation are included within both the PIR and net zero roadmap. Animal weight is used to calculate the PIR.
Specific considerations:	The Promar model has been validated by the Carbon Trust and is widely used across the UK dairy sector to enable large dairy farmers, milk processors and retailers to manage their carbon footprint.

5.4 Scope 1: Manure and land management emissions

Further emissions relate to the livestock held by Genus in the form of methane and nitrous oxide. These gases are emitted directly to atmosphere from bulk stores (i.e., storage silos, pits, lagoons) of animal manures. Nitrous oxide is also emitted from the application of manure on land.

Method applied:	Manure management livestock emissions are calculated using a proprietary model developed by Promar which uses the IPCC guidelines and the 2019 refinements to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, specifically Volume 4, Chapter 10 (Emissions from Livestock and Manure Management).
Primary data required:	Animal inventory and diet information as used in Scope 1 enteric fermentation calculations. Land summary (area farmed by Genus, area housing deep litter, proportion of manure Genus is responsible for storing and applying, who applies manure). Manure application (destination split of applied manure). Manure management (storage methods of manure).
Sources of primary data:	Animal inventory and diet information as used in Scope 1 enteric fermentation calculations. Locally provided data using template provided for manure management and land management.
Secondary data (emissions):	Promar model is proprietary and so specific methodology and secondary data required are not relevant to this basis of reporting.
Targets/KPIs:	Scope 1 emissions from manure management are included within both the PIR and net zero roadmap. Animal weight is used to calculate the PIR.

5.5 Scope 2: Purchased electricity emissions

All global locations use purchased electricity, either solely or partially obtained from the local standard grid. In some instances, Genus procures renewable or green electricity.

Standard and/or method applied:	Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (Revised Edition: WRI). Genus reports separately on Scope 2 purchased electricity GHG emissions using the location-based method and the market-based method.
Primary data required:	Quantity of electricity purchased and consumed from the local standard grid, in kWh. Quantity of renewable electricity purchased and consumed, in kWh.
Sources of primary data:	Electricity consumption records are maintained by the individual locations, and is reported using a provided template, with identification of standard electricity and renewable electricity.
Secondary data required (emissions):	Location-based emission factors for standard grid electricity consumption are obtained for all locations where purchased electricity from the grid is used. These emission factors are time and country specific (and in some cases, state or regional specific). Sources include: • DEFRA Conversion Factors 2023 (updated 28 June 2023) • U.S. EPA Emission Factors for Greenhouse Gas Inventories 2023 (modified February 13, 2024) • Carbon Footprint Country Specific Electricity Grid Greenhouse Gas Emission Factors (Released 30 July 2023) Market-based emission factors are obtained from contractual instruments issued by the supplier, such as contracts for renewable tariffs, energy attribute certificate or supplier specific emission factors.
Calculation:	Location-based: $$\sum Standard\ grid\ electricity\ consumed\ x\ location\ based\ EF\ (e.g., \frac{kgCO2e}{kWh})$$ Market-based: $$\sum (Standard\ grid\ electricity\ consumed\ x\ location\ based\ EF)$$ $$+ \sum (Renewable\ electricity\ consumed\ x\ contractual\ instrument\ EF)$$
Targets/KPIs:	Scope 2 (location-based) emissions are included within both the PIR and net zero roadmap. Scope 2 (market-based) emissions are included in the net zero roadmap.
Secondary data (energy):	Electricity is reported at source in required energy units (kWh).
Specific considerations:	Genus only calculates market-based emissions for renewable electricity purchased where there is an acceptable (as guided by Greenhouse Gas Protocol guidance) contractual instrument stating emission factor(s). Where renewable electricity is procured but Genus has no access to a contractual instrument, it is not included in market-based calculations and Genus solely applies the location-based calculation. Emissions related to the extraction, refining and transportation of fuels used to generate electricity, and T&D losses are calculated separately under Scope 3 Category 3.

5.6 Scope 2: District heating emissions

Standard and/or method applied:	Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (Revised Edition: WRI).
Primary data required:	Quantity of district heating, in kWh.
Sources of primary data:	District heating consumption records are maintained by the individual location and is reported using a template.
Secondary data required (emissions):	Location specific district heating emission factor. Source: Sphera and VDA Emission Factors for electricity, district heating and fuels (December 2022)
Calculation:	$\sum (district\ heating\ consumed\ in\ a\ location\ x\ EF\ for\ that\ location)$
Targets/KPIs:	Scope 2 emissions are included within both the PIR and net zero roadmap.
Secondary data (energy):	District heating is reported at source in required energy units (kWh).
Specific considerations:	Scope 2 emissions from district heating are minimal, with applicability to only one smaller location.

5.7 Scope 3 Category 1: Purchased goods and services emissions

This category includes the GHG emissions of products and services purchased by Genus not included in Scope 1, 2 or reported Scope 3 categories. Genus includes TAME porcine multiplier emissions within Scope 3 Category 1. Due to differences in calculations, Scope 3 Category 1 methodology is provided separately for:

- All purchased goods and services excluding porcine and bovine multiplier emissions; and
- TAME porcine multiplier emissions.

5.7.1 Scope 3 Category 1: Purchased goods and services emissions (excluding porcine and bovine multiplier emissions)

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0): Category 1: Purchased Goods and Services. Spend-based method.
Primary data required:	Amount spent on purchased goods or services in USD, categorised by procurement category and by subsegment.
Sources of primary data:	Global procurement data primarily sits within the D365 ERP system, with few locations still utilizing external and legacy systems. All spend is assigned a procurement category at the point of order. Procurement categories are transaction specific, and therefore relate to what was purchased. Where a procurement category is too vague to provide detail on what was procured, a secondary vendor specific category of subsegment can be used.
Secondary data required (emissions):	Spend-based emission factors. The NAICS-6 data base comprises of emission factors for over 1000 commodities. Source: Supply Chain Greenhouse Gas Emission Factors v1.2 by NAICS-6 (2021)

Calculation:	Each procurement category and subsegment is assigned the most applicable NAICS-6 emission factor in a lookup table. Procurement data is run through the lookup tables, which first attempts to assign an emission factor to the spend using the procurement category. If the procurement category has is too vague, the lookup process moves on to assigning an emission factor using the subsegment. As well as assigning a NAICS-6 emission factor to procurement categories and subsegments, the related GHG emission Scope (and Category for Scope 3) is also assigned. This enables extraction of spend on goods or services where Genus already calculates GHG emissions using more accurate data. Furthermore, it enables us to move appropriate spend-based calculated emissions to other Scope 3 categories where Genus is not elsewhere calculating those emissions, namely Category 2 (Capital Expenditure) and Category 5 (Waste in Operations). At the end of FY24, only 1% of procurement data was not mapped to a NAICS-6 code using either procurement category or subsegment. To obtain Scope 3 Category 1 emissions, all emissions assigned to Scope 3 Category 1 are summed and extrapolated by 1% to account for unmapped spend.

5.7.2   Scope 3 Category 1: Purchased goods and services – TAME porcine multiplier emissions

These are the emissions related to pigs on third party TAME multiplier farms for which Genus holds an economic interest and therefore maintains transactional records.

Method applied:	Average-based method, utilizing industry average pig emission factor adjusted for improvements resulting from PIC genetics.
Primary data required:	Transactional records for the number of pigs on multiplier farms for which Genus has economic interest, either by way of returning to Genus herd or for sale on to Genus customers. PIC Lifecycle Assessment (LCA) results (2024).
Sources of primary data:	Transactional records held in D365 and Legacy Oracle systems.
Secondary data required (emissions):	Industry average emission factor for pig: 'North America' average. Source: GLEAM (accessed April 2024) (GLEAM calculator parameters: Area = North America; Species = Pigs; Production system = Industrial; Reference = Animal; Emission Source = Enteric fermentation (CH_4) + Manure (CH_4) + Manure (N_2O) + Feed (CH_4 + LUC (CO_2) + Direct on farm energy (CO_2) + Embedded on farm energy (CO_2); Nodes = Species)
Calculation:	$Number\ of\ pigs\ x\ ('North\ America'\ average\ EF\ for\ a\ pig - 7.0\%)$
Specific considerations:	Contract multipliers under joint venture agreement where Genus holds an equity stake are excluded from Scope 3 GHG emissions and sit within the Scope 1 GHG emissions bucket.

5.8   Scope 3 Category 2: Capital expenditure emissions

This category includes the upstream emissions from the production of capital goods purchased.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0): Category 2: Capital Goods. Spend-based method.
Primary data required:	Amount spent on capital goods in USD, categorised by procurement category and by subsegment.
Sources of primary data:	As described for Scope 3 Category 1 Purchased goods and services.
Secondary data required (emissions):	As described for Scope 3 Category 1 Purchased goods and services.
Calculation:	As described for Scope 3 Category 1 Purchased goods and services.
Specific considerations:	We have agreed the determination between 'goods and services' and 'capital goods' to be based on the assigned procurement category. Emissions from capital expenditure are accounted for in the year of purchase and are not subjected to depreciation or amortization over the capital items lifespan.

5.9 Scope 3 Category 3: Upstream fuel and energy related activities emissions

These GHG emissions are related to the production of fuels and energy purchased and consumed by Genus.

Due to the granularity of calculating these emissions, methodology is split into:

(i) Upstream emissions of purchased fuels (for energy, heat and transportation);
(ii) Upstream emissions of purchased electricity; and
(iii) Transmission and distribution (T&D) losses.

5.9.1 Scope 3 Category 3: Upstream fuel and energy related activities – upstream emissions of purchased fuels

Upstream emissions of purchased fuels includes emissions from the extraction, production, and transportation of fuels (e.g., well-to-tank emissions) consumed by Genus and used for stationary combustion, mobile combustion and business travel.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 3: Fuel- and Energy- Related Activities Not Included in Scope 1 or Scope 2. Average-data method, which involves calculating emissions by using secondary (e.g., industry average) emission factors for upstream emissions per unit of consumption (e.g., kg CO_2e/litre).
Primary data required:	Primary data to enable calculation of these emissions will already be available in the form of Scope 1 and Scope 3 Category 6 activity data.
Sources of primary data:	Existing data used in Scope 1 and Scope 3 Category 6 calculations.
Secondary data required (emissions):	Well-to-tank (WTT) emissions factors for fuels consumed in stationary and mobile combustion (fuel-based in units of mass, volume or energy), e.g., kgCO_2e/litre. WTT emissions factors for mobile combustion (distance-based for each vehicle type, size and fuel combinations), e.g., kgCO_2e/mile.

	WTT emission factors for business air travel (distance-based for distance and class combinations in line with the associated Scope 3 Category 6 data provided), e.g., kgCO$_2$e/mile (with RFI).
	WTT emission factors for business rail travel (distance-based in line with the associated Scope 3 Category 6 data provided), e.g., kgCO$_2$e/mile.
	WTT emission factors for business road travel (distance-based for vehicle type, size and fuel combinations as reported under Scope 3 Category 6), e.g., kgCO$_2$e/mile.
	Source: DEFRA Conversion Factors 2023 (updated 28 June 2023)
Calculation:	$\sum (unit\ of\ fuel\ consumed\ x\ WTT\ EF\ for\ that\ fuel)$ $+ \sum (distance\ travelled\ within\ vehicle\ category\ x\ WTT\ EF\ for\ that\ vehicle\ category)$
Specific considerations:	Where business travel data is only available as spend, this is excluded from Scope 3 Category 3 calculations on the basis of no corresponding emission factors being available.

5.9.2 Scope 3 Category 3: Upstream fuel and energy related activities – upstream emissions of purchased electricity

Upstream WTT emissions from the extraction, production, and transportation of fuels consumed in the generation of electricity.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 3: Fuel- and Energy- Related Activities Not Included in Scope 1 or Scope 2 Average-data method.
Primary data required:	Primary data to enable calculation of these emissions will already be available in the form of Scope 2 data.
Sources of primary data:	Existing data used in Scope 2 calculations.
Secondary data required (emissions):	Emission factor for extraction, production, and transportation of fuels per unit of consumption of electricity (e.g., kg CO$_2$e/kWh). Source: DEFRA Conversion Factors 2023 (updated 28 June 2023)
Calculation:	$\sum (unit\ of\ electricity\ x\ WTT\ EF\ for\ electricity)$

5.9.3 Scope 3 Category 3: Upstream fuel and energy related activities – T&D losses

This includes the lifecycle emissions of electricity that is lost in a T&D system.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 3: Fuel- and Energy- Related Activities Not Included in Scope 1 or Scope 2 Average-data method.
Primary data required:	Primary data to enable calculation of these emissions will already be available in the form of Scope 2 data.

Sources of primary data:	Existing data used in Scope 2 calculations.
Secondary data required (emissions):	T&D emission factors or loss rates for countries (or region where available) where electricity is consumed from the Grid. Sources: • DEFRA Conversion Factors 2023 (updated 28 June 2023) • Carbon Footprint Country Specific Electricity Grid Greenhouse Gas Emission Factors – 2023 (Released 30 July 2023)
Calculation:	$\sum (units\ of\ electricity\ consumed\ for\ country\ x\ T\&D\ EF\ for\ that\ country)$
Specific considerations:	T&D loss emission factors are available for most counties. In Canada, they are available at regional level. For the USA, the US-EPA calculated grid gross losses at 5.1%[1]. Therefore, 5.1% of the applicable USA Egrid subregion is applied for electricity T&D in the USA.

5.10   Scope 3 Category 4: Upstream transport and distribution emissions

Upstream transport and distribution include third party transportation services purchased by Genus, including inbound logistics, outbound logistics and transportation between Genus's own operations. Transportation includes air, sea and land.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 4: Upstream Transport and Distribution. Distance-based (or distance-mass based) method.
Primary data required:	Distances (and masses for air and sea freight) of shipments categorised as follows: • Air freight (split into Long-haul (>2300 miles) and short-haul (<2300 miles)) • Sea freight • Road freight (split into combinations of vehicle type, vehicle/engine size, load capacity (HGV only), fuel type)
Sources of primary data:	Centralised reports available for: • PIC North America 3rd Party transport log • ABS North America 3rd Party transport log • China Breeder transport log All other locations: Location template detailing type of transport, distances, and masses.
Secondary data required (emissions):	Distance or distance-mass based emission factors for: • Air freight (for each distance category), e.g., $kgCO_2e$/ton-km. • Sea freight, e.g., $kgCO_2e$/ton-km. • Road freight (for each vehicle type, size and fuel combinations), e.g., $kgCO_2e$/km, or $kgCO_2e$/ton-km. Source: DEFRA Conversion Factors 2023 (updated 28 June 2023)

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[1] US-EPA, The emissions and generation resource integrated database eGRID Technical Guide with Year 2022 Data, available at: https://www.epa.gov/system/files/documents/2024-01/egrid2022_technical_guide.pdf

Calculation:	$$\sum (mass \; x \; distance \; x \; EF \; for \; transport \; type)$$ $$+ \sum (distance \; x \; EF \; for \; transport \; type)$$
Specific considerations:	Outbound logistics are categorised as upstream transport and distribution as it is a purchased service. Whilst mass-distance is preferred for road freight, emission factors are available for distance only.

5.11 Scope 3 Category 5: Waste generated in Operations emissions.

This category includes the emissions from third party disposal and treatment of waste generated within Genus's operations.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 5: Waste Generated in Operations Spend-based method
Primary data required:	Amount spent on waste disposal and treatment in USD.
Sources of primary data:	As described for Scope 3 Category 1 Purchased goods and services.
Secondary data required (emissions):	As described for Scope 3 Category 1 Purchased goods and services.
Calculation:	As described for Scope 3 Category 1 Purchased goods and services. To obtain Scope 3 Category 5 emissions, all emissions assigned to Scope 3 Category 5 are summed and extrapolated by 1% to account for unmapped spend.

5.12 Scope 3 Category 6: Business Travel emissions

Scope 3 Category 6 includes GHG emissions from the transportation of employees for business related activities in vehicles owned or operated by third parties, such as aircraft, trains, buses, and cars. It includes employees own vehicles used for approved business purposes. GHG emissions related to hotel stays are also included.

Due to the granularity of calculating business travel GHG emissions, the methodology is split into: i) air travel; ii) road travel; iii) rail travel; and iv) hotels.

5.12.1 Scope 3 Category 6: Business Travel – air travel

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 6: Business Travel Hybrid-method (distance-based and spend-based)
Primary data required:	Passenger air travel distance, split into eight defined categories of a combination of distances (Short-haul (<2300 miles), and long-haul (>2300 miles)) and class of travel (economy, premium economy, business and first class). Spend on employee air travel not booked via travel system.

Sources of primary data:	Genus operates a global corporate travel system (Egencia) that enables employees to book flights, rail travel, rental cars, and hotels. Most global locations have access to, and utilize, Egencia. For locations not utilizing Egencia, business travel activity data is obtained from the D365 expense system or directly from the data provider at the operating location via the issues template.

Secondary data required (emissions):	Distance based GHG emission factors for each distance and class combination categories (i.e., Short-haul economy class, long-haul premium economy class etc.), (e.g., kgCO$_2$e/passenger-km).
	
	Spend based GHG emission factors for average passenger flights (e.g., kgCO$_2$e/$).
	
	Sources:
	
	    • DEFRA Conversion Factors 2023 (updated 28 June 2023)
	    • Supply Chain Greenhouse Gas Emission Factors v1.2 by NAICS-6 (2021)
	
	Genus includes the indirect effects of non-CO$_2$ emissions when reporting air travel GHG emissions to capture the full climate impact of air travel, therefore, selected emission factors are those "with RF".

Calculation:	$$\sum \left(distance \; x \; EF \; for \; distance \; \&class \left(e.g., \frac{kgCO2e}{km} \right) \right)$$ $$+ \sum \begin{array}{l} (\$ \; passenger \; flights \; x \\ spend \; based \; EF \; (e.g., kgCO2e/\$) \end{array}$$
Specific considerations:	Definitions of distance categories can vary globally. As a global organization, Genus has defined distance categories as <2300 miles or >2300 miles to enable alignment to the DEFRA conversion factors for short haul and long-haul travel respectively. In some instances, when using the distance-based calculation method we may not have, or may not be certain of, the length of individual journeys and/or class of travel. In these instances, an average distance flight emission factor and/or an unknown class of travel emission factor is used.

5.12.2 Scope 3 Category 6: Business Travel – road travel

Business road travel may include travel undertaken by employees for the purpose of business in either their own personal vehicles, or in rented vehicles.

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 6: Business Travel. Hybrid-method (distance-based and spend-based).
Primary data required:	Distances travelled for business purposes in employees own vehicles, categorised by 'vehicle combination' of (1) vehicle type, (2) vehicle/engine size, and (3) fuel type. Spend on rental cars.
Sources of primary data:	Expense system (D365) report for employees own vehicle business travel. Location template for business travel in employees own vehicles (where location is not part of D365 expense system). Corporate travel system (Egencia) report for rental car spend information.
Secondary data required (emissions):	Distance based GHG emission factors for each vehicle type/size/fuel combination (e.g., kgCO$_2$e/passenger-km). Spend based Greenhouse Gas emission factors for rental cars (e.g., kgCO$_2$e/$).

	Sources:
	- DEFRA Conversion Factors 2023 (updated 28 June 2023) - Supply Chain Greenhouse Gas Emission Factors v1.2 by NAICS-6 (2021)
Calculation:	$$\sum(distance\ for\ vehicle\ combination\ x\ EF\ for\ vehicle\ combination)$$ $$+ \sum(spend\ on\ rental\ cars\ x\ Spend\ based\ EF)$$
Specific considerations:	In some instances, when using the distance-based calculation method we may not have, or may not be certain of, vehicle/engine size and/or fuel type. In these instances, an average car or van emission factor and/or an unknown fuel Greenhouse Gas emission factor is used.

5.12.3 Scope 3 Category 6: Business Travel – rail travel

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 6: Business Travel Hybrid-method (distance-based and spend-based)
Primary data required:	Distance travelled by rail, categorised by national and international rail travel. Spend on rail travel.
Sources of primary data:	Corporate travel system (Egencia) report. Expense system (D365) report for rail travel not booked via Egencia. Location template for rail travel not booked via Egencia and for locations not included in D365 expense system.
Secondary data required (emissions):	Distance based emission factors for national and internation rail travel (e.g., $kgCO_2e$/passenger-km). Spend based emission factors for rail travel (e.g., $kgCO_2e$/$). Sources: - DEFRA Conversion Factors 2023 (updated 28 June 2023) - Supply Chain Greenhouse Gas Emission Factors v1.2 by NAICS-6 (2021)
Calculation:	$$\sum(distance\ travelled\ by\ rail\ in\ category\ x\ EF\ for\ category\ of\ rail\ travel)$$ $$+ \sum(spend\ on\ rail\ travel\ x\ Spend\ based\ EF)$$

5.12.4 Scope 3 Category 6: Business Travel – hotel stays

Standard and/or method applied:	Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Category 6: Business Travel Activity-based method (Activity = # nights)
Primary data required:	Number of nights spent in hotels categorised by country.
Sources of primary data:	Corporate travel system (Egencia) report.

Secondary data required (emissions):	Emission Factors for the countries in which hotel stays occurs (e.g., $kgCO_2e$/night)

Sources:

- DEFRA Conversion Factors 2023 (updated 28 June 2023)
- Hotelfootprints.org (accessed April 2024) |
| Calculation: | $\sum (number\ of\ hotels\ nights\ in\ a\ country\ x\ EF\ for\ hotel\ in\ that\ country)$ |

5.13   Genomic Bull Net Merit Dollar Index (NM$)

The Genomic Bull Net Merit Dollar Index measures the genetic quality of Genus's bulls released to market, based on economically relevant traits for farmers.

Standard and/or method applied:	Council on Dairy Cattle Breeding (CDCB's) is an independent company who provides USA based genomic evaluations to the dairy industry (www.escdcb.com).

Dairy's sustainability improvements occurred via genetic selection for increased lifetime Energy Corrected Milk (ECM) production, improved health and fertility, increased longevity, and decreased feed requirements. |
| Net merit indices: | NM$ is the U.S. national selection index that combines information on about 40 traits, including yield, conformation, health and fitness, feed efficiency and fertility. Composite selection indices are valuable tools in modern dairy cattle breeding because they enable information from many traits to be combined into a single value for ranking animals, thus simplifying selection decisions.

When a trait has both economic value and genetic variation, including it in the lifetime merit indices increases profitability for dairy herds using the index. Traits are weighted based on their genetic impact on farm profitability.

NM$ is the US dollar lifetime value of when compared to a baseline animal born in 2020. |
| Calculation: | The CDCB collaborates with U.S. and global partners to produce independently assessed dairy genetic evaluations and data services. These CDCB results benefit dairy farmers worldwide as they work to improve the health and productivity of their cattle. The CDCB maintains the national cooperator database – the world's largest animal database – that integrates genomic information and more than 80 years of recorded U.S. dairy animal performance. The database is typically rebased every five years.

Genus's bovine business unit, ABS, releases bulls for genomic testing in accordance with production standards and ensures that the most significant releases occur to coincide with CDCB triannual schedule. Genomic testing schedules are available on the CDCB website (www.escdcb.com). |
| Related target: | Improvement of one genetic standard deviation (234 NM$) per one generation (3.5 years), equal to $66.9 average improvement per year. |

5.14   Reduction in dairy carbon emissions from genetic improvement

Standard and/or method applied:	To determine the reduction in dairy carbon emissions from genetic improvement as a result of Holstein sires released by Genus in the year, Genus utilizes a dairy model that incorporates the bovine business unit (ABS) and the CDCB trait evaluations, and the proprietary Promar model to determine emissions.

Primary data required:	• Total number of living females born from Holstein sires released in the year over the year based on unit type (embryo, sexed semen, or conventional semen), and unit type usage. • Heifer survivability. • Conception rates, abortion rates and stillbirth rates. • Herd inventory, diet and manure management. • Milk yield.
Secondary data required:	CDCB breeding trait values: • Stature • Strength • Body Depth • Thurl width • Dairy Form • Productive Life • Feed Saved • Milk • Protein (in kg) • Protein% • Fat (in kg) • Fat% Holstein average trait values • Body Weight • Dry Matter Intake (DMI) per Lactation • Daily DMI • Productive life • Milk • Protein • Fat • Heifer survival • CP% of feed • Birthweight
Calculation:	The estimated annual reduction in dairy carbon emissions represents the reduction in lifetime emissions as a result of genetic improvement this year versus last year based on the same amount of Energy Corrected Milk (ECM) produced. ECM determines the amount of milk produced adjusted to 3.5% fat and 3.2% protein. The following equation is used to calculate ECM: $$ECM\ (kg) = [Milk\ yield\ (kg)]\ x\ (0.337 + (0.116\ x\ (Fat\%\ x\ 100)) + (0.06\ x\ (Protein\%\ x\ 100)))$$ To determine the lifetime emissions from ECM produced, the following equation is applied: $$Lifetime\ emissions\ from\ ECM\ produced\ (kgCO2e) = Lifetime\ yield\ x\ carbon\ footprint$$ Where: 1. $Lifetime\ yield\ (kg) = ECM\ (kg)\ x\ number\ of\ lactations$ 2. $Carbon\ footprint\ \left(\frac{kgCO2e}{kgECM}\right) = \frac{Lifetime\ emissions\ (kgCO2e)}{lifetime\ yield\ (kg)}$ Promar proprietary model is used to determine average lifetime emissions (kgCO$_2$e) each year, based on body weight, health, residual feed intake, total lactation months and

	heifer survivability (see detail under Scope 1 Enteric Fermentation and Scope 1 Manure and Land Management methodologies).
	To calculate the reduction in emissions per cow for the same amount of ECM produced, the lifetime emissions equation is repeated using consistent (current years) lifetime yield and using (1) the current year carbon footprint and (2) the previous years carbon footprint. The difference in outputs is the reduction in emissions per cow for the same ECM produced. $$Reduction\ in\ emissions\ per\ cow\ for\ same\ ECM\ produced$$ $$= (lifetime\ yield^x\ x\ carbon\ footprint^{x-1})$$ $$- (lifetime\ yield^x\ x\ carbon\ footprint^x)$$ Where 'x' is the current full year. The reduction in emissions per cow is then multiplied by the number of Holstein females born alive from FY's Holstein genomic sales. $$Total\ estimated\ annual\ reduction\ in\ dairy\ carbon\ emissions$$ $$= Reduction\ in\ lifetime\ emissions\ per\ cow\ x\ Number\ live\ females\ born$$ Number of live Holstein females born alive from FY's Holstein genomic sales is calculated using: • Dairy conventional and sexed semen and embryo sales • Conception rate • Sexed and conventional semen usage rates • Sexed and conventional semen female skew rate • Abortion and stillbirth rate
Related target:	Determine annual reduction in dairy carbon emissions (tCO$_2$e).
Specific considerations:	Carbon equivalent emissions have been included for enteric fermentation (direct emissions from livestock), manure methane, and manure nitrous oxide emissions estimated using a 'standard' US split of slurry, solid storage, and pasture storage. Emissions for heifers that would have died before lactation and for the first 3 months of a male dairy calf were included. Dairy conventional and sexed semen and embryo sales do not include sales to India. 90% of conventional and sexed semen sales are Holstien.

5.15   Women in M-Grade roles

Primary data required:	Number of employees by gender within management (M-grade) roles.
Sources of primary data:	D365 HR System reports, available monthly from HR.
Secondary data required:	None.
Calculation:	The number of management (M-grade) roles filled by women divided by the total number of management positions.
Targets/KPIs:	Increase number of women in management (M-grade) roles to at least 36.3% by 2030.
Specific considerations:	Genus has defined career bands within its job framework overview. Management (M-grade) roles are defined as people managers who achieve goals through the work of others, and is expressed as a proportion of total employees holding management (M-grade) roles.

	Data is anonymized to protect personal data.
	Our target excludes women who hold roles in joint ventures.

5.16 Recordable Injury Frequency Rate (RIFR)

Primary data required:	Number of recordable incidents (as defined by Occupational Safety and Health Administrator (OSHA)).
	Total number of hours worked.
Sources of primary data:	H&S system reports
Secondary data required:	The value of 200,000 hours is used to calculate RIFR. This is provided by OSHA and represents the number of hours that 100 employees working 40 hours per week for 50 weeks per year would work and provides the standard base for calculating incidence rate for an entire year.
Calculation:	$$RIFR = \frac{Number\ of\ injuries\ and\ illnesses\ x\ 200{,}000}{Employee\ hours\ worked}$$
Targets/KPIs:	Achieve at least a rolling 5% year-on-year reduction in recordable injury frequency rate.
Specific considerations:	The Recordable Incident Frequency rate excludes contractors working at our locations, working hours from joint venues, minor first aid treatment, near-miss and hazard observation.
	Recordable injuries are work related incidents that result in injury or illness, work restriction, or require treatment other than first aid.

6. Document control

Version No.	Document ID	Date	Changes Made
Draft 0.1		*June 2023*	*Document creation for comment*
Draft 0.2		*June 2023*	*Included H&S RIR definition*
Draft 0.3		*August 2023*	*Feedback from third party assurance provider incorporated to correct minor errors in definitions.*
Version 1.0		*September 2023*	*Final consistency check*
Version 2.0	ESG-00011-Ref	August 2024	Full update to include current process and to incorporate information on expanded scope of GHG reporting.