

Reporting principles for calculating Scope 3 greenhouse gas emissions reported in the sustainability reports of Metsä Group and Metsä Board

Metsä Group (including Metsä Board) calculates its Scope 3 emissions in accordance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The materiality of each of the 15 Scope 3 categories was determined using a spend-based materiality assessment. All the categories assessed to be material to at least one of the Group's business areas were calculated. Categories in which the amount of greenhouse gases was insignificant were also included in the Scope 3 inventory.

The following three categories out of the 15 were assessed as non-material and therefore excluded from the calculation: upstream leased assets, downstream leased assets and franchising. Metsä Group does not have significant leased assets under Scope 3 that are not already included in Scope 1 and Scope 2. Metsä Group does not engage in franchising. All the Group's companies are included in the calculation.

The Scope 3 inventory has been calculated as CO₂ equivalent tonnes excluding biogenic carbon dioxide. The operational data used in the calculation is obtained from the Group's internal systems. In the absence of accurate data, assumptions have been used. The emission factors used are mainly from global databases such as ecoinvent 3.11, EXIOBASE 3, DEFRA's GHG conversion factors (full set for advanced users 2024), and IEA's Life Cycle Upstream Emission Factors (2023).

Supplier-specific emission factors have been used for logistics (58% of operational data for Metsä Group and 56% for Metsä Board) as well as for raw materials and packaging materials (53% of operational data for Metsä Group and 81% for Metsä Board, excluding raw wood). Some of the supplier-specific emission factors in logistics only cover CO₂ in current calculations, but they will be updated to include other essential greenhouse gases in the next few years as international disclosure guidelines for logistics develop. Currently, many of the supplier-specific emission factors for logistics cover only TTW (tank-to-wheel) emissions. As a rule, WTW (well-to-wheel) emission factors are used if available from suppliers. To improve accuracy, supplier-specific emission factors are collected when available. The emission factors are reviewed annually to ensure the latest emission factors are in use.

Metsä Board's investment emissions data is based on the company's share of Metsä Fibre's Scope 1 and Scope 2 emissions, corresponding to Metsä Board's holding (24.9%) in Metsä Fibre, excluding the emissions associated with pulp raw materials procured from Metsä Fibre that have been assigned to the first category of the Scope 3 inventory.

Scope 3 category	Calculation method, sources of emission factors, and the most significant assumptions in the calculation
1 Purchased goods and services	Average-data method & Hybrid method In the absence of precise data, assumptions and generalizations have been made, for example, in selecting the appropriate emission factor for certain procurement categories or individual materials and services. Additionally, for raw materials and packaging materials, assumptions have been made in converting materials from various units of measurement to tonnes, if average conversion factors for the material have been used in the calculations due to the lack of more specific product data. Sources of emission factors: <ul style="list-style-type: none"> • Raw materials and packaging materials: Supplier-specific emission factors and ecoinvent database • Other products and services: Spend-based emission factors from the EXIOBASE database
2 Capital goods	Average-product method Source of emission factors: <ul style="list-style-type: none"> • EXIOBASE database spend-based emission factors
3 Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	Average-data -method Sources of emission factors: <ul style="list-style-type: none"> • Fuels and energy: DEFRA and ecoinvent database • Transmission and distribution losses of purchased electricity: IEA
4 Upstream transportation and distribution	Distance-based method for transportation Transport kilometers are mostly based on online map data, but supplier-specific data has been utilized when available. For suppliers and transport routes without supplier-specific emission factors, the most appropriate library factor has been used. The selection of the emission factor involves making assumptions about the mode of transport and the specific type of transport equipment, based on the available activity data. Sources of emission factors: <ul style="list-style-type: none"> • Supplier-specific emission factors (Primarily CO₂ equivalent factors have been used when available, but some supplier-specific factors currently cover only CO₂. WtW emission factors are used primarily when available.) • DEFRA and Clean Cargo transport mode-specific emission factors Spend-based method for storage and ports Source of emission factors: <ul style="list-style-type: none"> • EXIOBASE database spend-based emission factors
5 Waste generated in operations	Waste-type-specific method Source of emission factors: <ul style="list-style-type: none"> • Ecoinvent database
6 Business travel	Distance-based method Operational data obtained from the travel agency. Source of emission factors: <ul style="list-style-type: none"> • DEFRA's per passenger-kilometer emission factors

7 Employee commuting	Average-data method Commuting travel distances and methods assumed. Source of emission factors: <ul style="list-style-type: none"> • IEA database average WTW emission factors for commuting
9 Downstream transportation and distribution	Distance-based method Transport distances and methods have been estimated based on Metsä Group's sales data. Sources of emission factors: <ul style="list-style-type: none"> • DEFRA transport mode-specific database emission factors • Clean Cargo transport mode-specific database emission factors
10 Processing of sold products	Average-data method In the absence of precise data, assumptions have been made about the further processing methods of products sold to customers. The Group's calculations are not based on primary data collected from customers. Appropriate emission factors have been selected for the assumed further processing methods of the products. Sources of emission factors: <ul style="list-style-type: none"> • Metsä Group's EPD documentation and carbon footprint calculations, as applicable, at the business area level and, in the absence of more detailed database information, at the Group level. • Cepi and Fefco statistics • Ecoinvent database
11 Use of sold products	Material activity: biomass sold for energy use Biogenic CO ₂ emissions calculated separately but excluded from the 2024 report, as the assessment of biogenic emissions for other Scope 3 categories will be refined during 2025. Source of emission factors: <ul style="list-style-type: none"> • DEFRA emission factors
12 End-of-life treatment of sold products	Waste-type-specific method The waste treatment methods for products have been assessed based on publicly available location-based waste treatment data, such as statistics (Eurostat, Statista, national statistical agencies) and studies (EPA, PEFCR, ResearchGate, MDPI), as well as the Group's knowledge of the sales areas of the company's products. The location-based waste treatment statistics have been updated in the calculations to use the latest available data, which has contributed to a reduction in emissions for the year 2024 (particularly due to updated statistics from China). The Group's calculations are not based on primary data collected from customers or end-users, and in the absence of precise data, assumptions have been made about the final waste treatment methods of sold products based on sales areas and publicly available waste treatment statistics. Source of emission factors: <ul style="list-style-type: none"> • Ecoinvent database

15 Investments**Investment-specific method**

The emission data related to Metsä Board's investments is based on its ownership share of Metsä Fibre's Scope 1 and 2 emissions, excluding the emissions calculated in the first category of the Scope 3 inventory for pulp raw materials purchased from Metsä Fibre. The emissions related to the Group's investments have been estimated using energy consumption data or Scope 1 and 2 data provided by the companies. If the companies have shared their energy consumption data, appropriate average emission factors have been used for the emission calculations (DEFRA, Statistics Finland, Statista).