MESSE FORUM

# MESSEFORUM OY

# GREENHOUSE GAS EMISSION INVENTORY 2024

Calculation according to Greenhouse Gas Protocol

Accounting and Reporting Standard

July 7th, 2025

# 1. INTRODUCTION

## 1.1. Organisation

Messeforum Oy is a Finnish exhibition stand builder and exhibition service expert. Messeforum has calculated carbon footprints of its exhibition stands since 2020 and offers carbon neutral exhibition stands for its customers. The overall carbon footprint of Messeforum Oy has been calculated since 2022. In July 2024 the company's trade fair representations were transferred to a new group company Evenos Oy, which is also included in this carbon footprint calculation. Before that, all emissions currently generated by Evenos, were attributed to Messeforum.

This report presents the greenhouse gas inventory (Scope 1, 2 and 3) of Messeforum and Evenos in 2024 including activity data and emission factors used as well as the results of the emission calculation.

Total net revenue of Messeforum and Evenos together was 3.67 million euros in 2024.

## 1.2. The GHG emissions inventory

The Scope 1, 2 and 3 greenhouse gas emissions inventory is based on Greenhouse Gas Protocol Accounting and Reporting Standard and The Corporate Value Chain (Scope 3) Accounting and Reporting standard.

The greenhouse gas (GHG) emissions inventory considers all Scope 1, 2 and 3 direct and indirect GHG emissions of a given entity:

- Direct GHG emissions from emission sources owned or controlled by the company (scope 1)
- Indirect GHG emissions from the generation of purchased energy (scope 2)
- Indirect GHG emissions from the value chain of the company (scope 3)

The GHG emissions inventory gives an idea of the climate burden caused by the companies

The climate impact is caused by the release of greenhouse gases such as carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) into the atmosphere. The greenhouse gas (GHG) emissions are expressed in terms of carbon dioxide equivalents (CO2e), considering the different global warming potentials (GWP) of different greenhouse gases.

GWPs represent the global warming potential of different greenhouse gas emissions over a 100-year time horizon. The GWPs presented in the IPCC Sixth Assessment Report are:

- Carbon dioxide (CO2) 1
- Methane, fossil – combustion (CH4) 27
- Nitrous oxide (N2O) 273

The calculations were performed using the OpenCO2net organization specific carbon footprint calculator.

# 2. BUSINESS GOALS

The goal of the project was to calculate scope 1, 2 and 3 GHG emissions of Messeforum Oy and Evenos Oy in 2024.

The results of the calculation can serve the following business goals:

- Increasing the understanding of the organization
- Identifying emission reduction measures
- Setting the emission reduction target (Science Based Target, SBT)
- Stakeholder communication

## 3. CALCULATION BOUNDARY

### 3.1. Organisational and geographical boundaries

Organisational boundary was set to companies' operations and sold exhibition stands. Geographical boundary was set to companies' operations in Finland and to exhibitions stands Messeforum Oy was providing in 2024 in Europa, Asia and USA. The office of Messeforum included into the organisational boundary is included in Tuusula and covers 28.3 m2.

### 3.2. Operational boundaries

All scope 1, 2 and 3 emissions related to the company's operations and value chain that are under Messeforum Oy's and Evenos Oy's operational control, were included in the calculation.

### 3.3. Temporal boundaries

Time boundary was set to the year 2024

## 4. IDENTIFICATION OF GHG EMISSION SOURCES

### 4.1. Emission sources included in the calculation

The following emission sources were included in the inventory of greenhouse gas emissions

Scope 1

- Owned vehicles

Scope 2

- Purchased electricity

Scope 3

- Purchased goods and services (Category 1)
- Fuel- and energy-related activities not included in Scope 1 or 2 (Category 3)
- Upstream transportation and distribution (Category 4)
- Business travel (Category 6)
- Use of sold products (Category 11)

### 4.2. Emission sources excluded in the calculation

The following emission sources were excluded in the inventory of greenhouse gas emissions

Scope 1

- Fuel consumption of own energy production
- Direct GHG emissions

Scope 2

- District heating

Scope 3

- Capital goods (Category 2)
- Employee commuting (Category 7)
- Upstream leased assets (Category 8)
- Downstream transportation and distribution (Category 9)
- Processing of sold products (Category 10)
- End-of-life treatment of sold products (Category 12)
- Downstream leased assets (Category 13)
- Franchises (Category 14)
- Investments (Category 15)

All scope 3 categories have been screened. The reason for excluding some scope 3 categories from the calculation has been that there are no activity or related emissions.

Employees of Messeforum are working remotely so there is no employee commuting. Some of the excluded categories are included in other categories, such as category 1: Purchased goods and services. Leased assets (office) are included in Scope 2 (energy consumption). Waste generated in the operations are from dismantling of exhibition stands and related waste management is part of the exhibition centers' operations. Transportation of waste in included in upstream transportation and distribution.

## 5. GHG EMISSIONS CALCULATION APPROACH AND TOOLS

The calculation was conducted on the OpenCO2net Carbon Footprint Platform, which is based on Greenhouse Gas Protocol and ESRS E1 standards. OpenCO2net is an emission calculation platform, developed by experts, providing tools for companies for low-carbon future. The company-specific calculator uses the OpenCO2 emissions database, including more than 7000 up-to-date emission factors selected and validated by experts.

Internationally accredited certification and rating agency DNV has validated the calculation methods of the OpenCO2net platform and the data collection process of the emissions database in the context of the validation of the OpenCO2net carbon footprint label. The DNV's statement confirms that the OpenCO2net carbon footprint complies with the requirements of the Greenhouse Gas Protocol and ISO 14067 standards.

## 6. ACTIVITY DATA FOR THE CALCULATION

The activity data and emission factors used in the calculation and the assumptions made are described below.

### 6.1. Activity data

The following Scope 1 activity data was used in the calculation (Table 1)

Table 1: Scope 1 activity data

| Scope 1 activity data | |
|---|---|
| Emission source | Consumption |
| Hybrid car, gasoline | 605,31 l |

The following Scope 2 activity data was used in the calculation (table 2)

Table 2: Scope 2 activity data

| Scope 2 activity data | | |
|---|---|---|
| Faculty / office | Emission source | Energy consumption |
| Tuusula officew | Electricity | 1530 kWh |

Electricity is purchased from Oomi by the owner of the building.

The following scope 3 activity data and GHG Protocol calculation methods were used in the calculation (table 3)

Table 3: Scope 3 activity data type, GHG protocol calculation methods and percentage of emissions calculated based on supplier reports

| Scope 3 activity data and GHG protocol calculation methods | | | |
|---|---|---|---|
| Scope 3 - category | A description of the quality of the data used in the calculation of emissions and the sources of activity data from company's own activities | Calculation method (based on consumption/fuel etc. ) | Percentage (%) of emissions calculated from information received from suppliers/other value chain partners |
| Category 1: Purchased goods and services | All relevant invoice data and purchased goods and materials for exhibition stands energy | Spend-based average data | 0 % |
| Category 3: Fuel- and energy-related activities not included in Scope 1 or 2 | Upstream emissions and emissions from transmission and distribution for consumed energy and electricity | Average-data | 0 % |

| | | | |
|---|---|---|---|
| Category 4: Upstream transportation and distribution | Transportation and distribution for materials and wastes to and from exhibition stands | Average-data | 0 % |
| Category 6: Business travel | Flights, hotels and other travelling | Supplier reports, distance-based, spend-based | 24 % |
| Category 11: Use of sold products | Electricity used in exhibition stands | Average-data | 0 % |

### 6.2. Emission factors

The calculations have been performed using best and most recent emission factor data available at the time of the calculation. Primary data from suppliers have been used in the calculation if possible. Where emission data from suppliers were not available, the calculation has been based on emission factors from OpenCO2 emissions database.

CO2 equivalents have been in the calculation whenever possible. If CO2 equivalent values were not available, CO2 values have been used instead.

The following emission factors have been used in the calculation (Table 4).

Table 4: Sources of emission factors

| Emission category | The source of the emission factors |
|---|---|
| Scope 1 | OpenCO2.net/Statistics Finland |
| Scope 2 | OpenCO2.net/Statistics Finland/Motiva |
| Scope 3 | |
| Category 1: Purchased goods and services | OpenCO2.net |
| Category 3: Fuel- and energy-related activities not included in Scope 1 or 2 | OpenCO2.net |
| Category 4: Upstream transportation and distribution | OpenCO2.net |
| Category 6: Business travel | OpenCO2.net |
| Category 11: Use of sold products | OpenCO2.net |

### 6.3. Assumptions

In the calculation some assumptions had to be made due to lack of access to accurate information.

Messeforum has previously calculated carbon footprints of its exhibition stands and emissions from these calculations are included in Company's scope 3 categories: Purchased goods and services, Upstream transportation (and waste), Business travel and Use of sold products (electricity consumption of exhibition stands).

Downstream transportation and distribution are not specified in the calculations, as they are already included in upstream transportation and distribution. The share of downstream transportation emissions is approximately one quarter of all Messeforum's transportation emissions.

In the calculation of Scope 1 emissions, the average consumer gasoline price for the year 2024 (1,829 €/l) was used, defined by Statistics Finland (www.stat.fi).

Because the electricity of the Messeforum office is included in the rental costs and the owner of the premises could not provide the amount of Messeforum's electricity consumption, its calculation is based on the average electricity consumption of normal office premises (17 kWh / m3), defined by Motiva (www.motiva.fi).

## 7. RESULTS AND GHG INVENTORY QUALITY

### 7.1. GHG emissions

This section presents the results of the greenhouse gas emissions inventory. The table below (table 5) shows the emissions of Scope 1, 2 and 3 in 2024.

Total emissions in 2024 were 307.10 tons CO2e (market-based) and 306.30 tons CO2e (location-based).

The most significant emission sources were

- purchased materials for exhibitions stands (212.40 t CO2e)
- business travel (46.6 t CO2e) in which 35.4 t CO2e are exhibition stands related business travel and 11.2 t CO2e other business travel.
- transportation of exhibition stands materials and wastes (45 t CO2e)

Table 5: Results of greenhouse gas inventory for 2024. All units are in metric tons of CO2 equivalent.

| | Emissions 2024 (metric tons of CO2e) | Emissions 2023 (metric tons of CO2e) | Change of 2024 results compared to 2023 |
|---|---|---|---|
| Total emissions, market-based | 307,10 | 313,56 | -2,06 % |
| Total emissions, location-based | 306,30 | 312,79 | -2,08 % |

| | Emissions 2024 (metric tons of CO2e) | Share of total emissions | Emissions 2023 (metric tons of CO2e) | Change of 2024 results compared to 2023 |
|---|---|---|---|---|
| Scope 1 | 1,22 | 0 % | 1,29 | -5,45 % |
| Scope 2 market-based | 0,85 | 0 % | 0,9 | -5,56 % |
| Scope 2 location-based | 0,07 | (0 %) | 0,13 | -46,15 % |
| Scope 3 | 305,00 | 99 % | 311,37 | -2,05 % |
| Category 1: Purchased goods and services | 212,40 | 69 % | 197,05 | +7,79 % |
| Category 3: Fuel- and energy-related activities not included in Scope 1 or 2 | 0,32 | 0 % | 0,35 | -8,57 % |
| Category 4: Upstream transportation and logistics | 45,00 | 15 % | 48,04 | -6,33 % |
| Category 6: Business travel | 46,60 | 15 % | 62,76 | -25,75 % |
| Category 11: Use of sold products | 0,77 | 0 % | 3,16 | -75,63 % |

The increase of Scope 3 category 1 (purchased goods and services) emissions is due to the Messeforum's increased activity and larger number of projects during the year.

On the other hand, Messeforum and Evenos have been able to decrease the overall GHG emissions by optimizing and decreasing travelling and optimizing Messeforum stand constructions business's transportations.

The following table (Table 6) presents GHG intensity based on Messeforum's and Evenos' net revenue in 2023 and 2024. In the previous year's calculation both Messeforum and Evenos activities were under Messeforum Oy so the figures for 2023 and 2024 are comparable. The GHG intensity is calculated by relating the total annual GHG emissions to the companies' net revenue. The emissions

intensity relative to net revenue has decreased both in calculation of market-based and location-based results.

Table 6: GHG intensity per net revenue

| GHG intensity per net revenue | | | |
|---|---|---|---|
| Year | Net revenue (M€) | Total GHG emissions (market-based) per net revenue (tCO2e/M€) | Total GHG emissions (location-based) per net revenue (tCO2e/M€) |
| 2023 | 3,45 | 90,91 | 90,68 |
| 2024 | 3,6 | 85,31 | 85,08 |

### 7.2. Uncertainties and exclusions

It is important to note that the calculation results are subject to uncertainties, and efforts are made to minimize their impact through continuous improvement in data collection. Messeforum has been calculating the carbon footprints of their exhibition stands for many years already (since 2020) and their overall GHG emissions since 2022, and therefore, with the knowledge of the activity nature and emissions continuously growing, this calculation of 2024 does not contain many uncertainties.

Spend-based analysis has inherited uncertainties in activity data categorization and choosing the proper emission factor (significant). Spend-based emission factors are from the years 2018-2021 and inflation has not been considered. However, using spend-based emission factors the carbon footprint is rather overestimated.

Energy emission factors do not include other greenhouse gases than CO2, but the uncertainty is negligible.

## 8. EMISSION DEVELOPMENT 2022-2024

| Emissions development | | | |
|---|---|---|---|
| | 2022 (metric tons CO2e | 2023 (metric tons CO2e) | 2024 (metric tons CO2e) |
| Total emissions, market-based | 267,35 | 313,56 | 307,10 |
| Total emissions, location-based | 267,57 | 312,79 | 306,30 |
| Scope 1 | 1,10 | 1,29 | 1,22 |

| | 2022 (metric tons CO2e | 2023 (metric tons CO2e) | 2024 (metric tons CO2e) |
|---|---|---|---|
| Scope 2 market-based | 0 | 0,9 | 0,85 |
| Scope 2 location-based | 0,18 | 0,13 | 0,07 |
| Scope 3 | 266,29 | 311,37 | 305 |
| Category 1: purchased goods and services | 154,36 | 197,05 | 212,40 |
| Category 3: Fuel- and energy-related activities not included in cope 1 or 2 | 0,31 | 0,35 | 0,32 |
| Category 4: Upstream transportation and logistics | 26,83 | 48,04 | 45 |
| Category 6: Business travel | 81,93 | 62,76 | 46,40 |
| Category 11: Use of sold products | 2,86 | 3,16 | 0,77 |

In the yearly comparison it is important to note, that year 2022 was the first whole year in exhibition business after Covid pandemic, and the Messeforum 2022 activity and turnover (2.9 million euros) had not yet fully recovered to its normal pre-pandemic level. Therefore, also the emissions, especially the ones related to the materials used for stand construction business, are lower than in the following years 2023 and 2024 with much higher activity level.

## 9. GHG REDUCTIONS

Messeforum and Evenos achieve emission reductions among others with following actions:

- by procuring potential new leased cars powered by electricity or biogas (small impact)
- by purchasing products with a defined carbon footprint
- by procuring low-emission products and setting carbon footprint criteria for suppliers in the procurement process
- by reusing the materials of Messeforum's exhibition stands
- by developing new material-efficient stand construction methods
- by optimizing transportation routes and fleet
- by paying attention to business travel and flights:
    - reducing travelling when possible
    - favouring direct flights when possible
    - favouring rail travel instead of car rental when possible
    - favouring rental electric cars

Messeforum's stand construction activity is based on continuous effort in seeking new ways to reduce the GHG emissions. A dedicated team was founded in 2024 to concentrate on developing the activity, do refine the emission calculation and to find new low-carbon technical and material solutions to stand construction.  An important target is also to increase subcontractors' commitment to Messeforum's emission reduction objectives.

## FURTHER INFO

Further information about the Messeforum Oy and Evenos Oy GHG emission calculation, about this report and about Messeforum's stand construction activity:

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## REFERENCES

GHG Protocol Corporate Accounting and Reporting Standard

GHG Protocol Value Chain (Scope 3) Standard

OpenCO2.net platform

Statistics Finland, average gasoline price 2024

Motiva, average electry consumption 2024