Methodological guide and emission factors

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Introduction

This methodological guide compiles all the Emission Factors (EF) used in the Climeet tool, as well as the various assumptions made. For each EF, the name, database and version are given. For shareable databases, the values are given. The EFs used in Climeet are in kg of CO_2e, and include all the greenhouse gases covered by the Kyoto Protocol (1997), with a 100-year Global Warming Potential (GWP).
This guide was last updated in July 2026 and corresponds to Climeet version 5.0.
The next Climeet EF update is scheduled for late 2026.

New in the guide:

July 2026 update:

- The "Dedicated work-days" item is renamed "Design and (dis)assembly"
- **Material and space planning**: overhaul of the "Material and space planning" items: new breakdown of equipments into 15 categories (Lighting, Network & cabling, Power & energy, Consumables, Video, Sound, IT-Photo-Office, Truss-Motor-Stage, Furniture, Kitchen-Cooling-Sanitation, Fabrics, Signage, Print, Security, Plants)
- **Material and space planning**: update of many emission factors (sound, video, lighting, carpet...) and addition of new materials/items in "Stands and structures" (concrete, drywall/plaster, metal, green wall, layer/scaffolding)
- **Energy & Water**: overhaul of the "Energy" item into "Energy & Water": addition of the water Emission Factor (distribution + wastewater treatment) and integration of a water consumption estimate into unknown consumption
- **Transport**: clarification of the "Car", "Electric car" and "Hybrid car" labels with the mention "individual" to differentiate them from the "carpooling" modes
- **Transport** : addition of the EF "Individual van"
- **Catering** : for "Drinks" separation of the purchase container from the final container with the new fields "Container at the purchase" and "Drinking container"
- **Catering** : "Unknown" option for cutlery and for meal composition
- **Accommodation**: addition of the "Unknown" distance choice
- **Goodies**: addition of the EFs "pen", "pencil", "paper notebook", "reusable steel bottle" and "reusable plastic bottle"

Design and (dis)assembly

The "Dedicated work-days" item has evolved and has been renamed "Design and (dis)assembly".
It is now possible to add as many lines as required in this item.
The distinction between the upstream phase and assembly/disassembly is now possible via the "task" field, where you can choose between:

- Office (formerly upstream design time)
- Warehouse (new field, corresponding to logistics or warehousing work)
- On site (formerly assembly and disassembly)

The Emission Factors (EF) used are in kgCO2e/work-day and are weighted according to the energy mix of the country concerned, which must also be provided.

Office

This section calculates emissions linked to the event's organization and design phase, in office spaces (or remote working). The user enters the work-days worked upstream by the organizing teams and intellectual service providers.

They are based on the average carbon footprint of an FTE (Full-Time Employee) working in a service company in Belgium over a working year, i.e. 220 days, in tCO2e/year. The footprint per FTE includes Scopes 1, 2 and 3, i.e. all the emissions associated with an employee's energy use (electricity, heating, air conditioning), commuting and the purchase of consumables.
This value comes from two benchmarks carried out by South Pole on a dozen service companies, mainly in Belgium. This average figure was used to calculate the average EF of a Belgian employee per day worked, on the assumption that an average FTE works 220 days a year.
This EF was then extrapolated to the various countries according to the EF of each country's energy mix.

Task name	Data to be entered	EF unit	EF source
Office	Number of work-days	kgCO2e/work-day	South Pole

On-site

It is difficult to obtain information about the travel required by on-site teams to get to the event. It was decided to approximate these emissions by calculating the number of on-site work-days (including the assembly and disassembly phases) and using the EF from the previous section, per FTE.
The EF used varies according to the country of the event, to be selected in the dedicated field.

Warehouse

For time spent upstream in warehouses for logistics or warehousing work, it is now possible to enter the number of work-days dedicated to the event. The EFs used are the same as for the other tasks, adapted to the selected country.

Transport for staff and participants

Emissions linked to the travel of organizing teams, suppliers and participants are calculated on the basis of distances travelled per person, according to mode of transport. The EFs were taken from metric databases and then converted to imperial, the values of which are given below.

Combustion vehicles

For all thermal modes of transport, the emissions calculated include upstream emissions (vehicle manufacture) and emissions generated during use. EF are in kgCO2e/person.km.

Electric vehicles

The EF used for electric vehicles is broken down into upstream and in-use emissions.
Emissions from the upstream phase (vehicle manufacture) are calculated using the "Passenger car - Mid-range - Compact vehicle - Electric - France" EF from Base Carbone® V23.1, taking only the upstream part.
Emissions generated during use are calculated on the basis of the average electricity consumption of an electric car per person and per km, and the CO2 intensity of the energy mix of the country hosting the event (source: IEA 2022, non-shareable basis).

Total EF = Upstream EF (kgCO2e/pers.km) + EF of the energy mix of the country hosting the event (kgCO2e/kWh) x Average electricity consumption of an electric car (kWh/pers.km)

Carpooling

For car-sharing, whatever the engine type, the assumption is an average occupancy rate of 3 people, compared with 1.3 for an average vehicle for the emission factor in Base Carbone® V23.1. The EF for car-sharing is therefore calculated on the basis of the EF for an average vehicle of the same engine type, with a ratio of 1.3/3.

Bicycle/ on foot

Emissions linked to the manufacture of the bicycle are not taken into account. Emissions linked to travel are equal to 0, so the EF used is zero.

Electric bicycle

The EF used for electric bicycles is broken down into upstream and in-use emissions.
Upstream emissions are calculated on the basis of the "Electric-assisted bicycle - France" EF from Base Carbone® V23.1, taking only the upstream part.

Emissions generated during use are calculated on the basis of the average electricity consumption of an electric bicycle per person and per km, and the CO2 intensity of the energy mix of the country hosting the event (source: IEA 2022, non-shareable basis).
The average power consumption chosen is that of an average electric scooter, in a conservative approach, and is 0.014 kWh/km, according to a manufacturer of electric bikes and scooters.

Total EF = Upstream EF (kgCO2e/pers.km) + EF of the energy mix of the country hosting the event (kgCO2e/kWh) x Average electric consumption of an electric scooter (kWh/pers.km)

Train

For trains, the EF is adapted according to the CO2 intensity of the energy mix in the country of the event (source: IEA 2022, non-shareable basis).

Sailing boats

Emissions linked to the manufacture of the sailboat are not taken into account. Emissions linked to travel are equal to 0, so the EF used is zero.

Mode of travel	Electricity consumption (kWh/ pers.km)	EF (kgCO2e/ pers.km)	Source	EF title
Individual car		0,23	Base Carbone® V23.1	Car - Medium engine - 2018 - France
Individual electric car	0,170	0,084	Base Carbone® V23.1	EF upstream: Passenger car - Mid-range - Compact vehicle - Electric - France Average electricity consumption: 0.17 kWh/km Source: Selectra
Individual hybrid car		0,183	Base Carbone® V23.1	Passenger car - Mid-range - Compact vehicle - Hybrid, full, P2
Individual van		0,257	BEIS 2023	Van - Average (up to 3.5 tonnes) - Petrol - Global
Carpooling		0,10	Based on Base Carbone® V23.1	Based on the EF of the Base Carbone® "Car - Medium engine - 2018 - France", assumption of 3 people versus 1.3 for an average vehicle in the ADEME study
Electric carpooling	0,074	0,036	Based on Base Carbone® V23.1	Based on the "electric car" EF, assumption of 3 people versus 1.3 for an average vehicle in the ADEME study
Hybrid carpooling		0,079	Based on Base Carbone® V23.1	Based on the "hybrid car" EF, assumption of 3 people versus 1.3 for an average vehicle in the ADEME study
Motorcycle/scooter		0,134	Based on Base	Average of the EF "Motorcycle <=250cm3 - mixed 2018" and the EF "Motorcycle >250cm3 - mixed 2018"

			Carbone® V23.1	
Electric motorcycle/scooter	0,06	0,0212	Based on Base Carbone® V23.1 and Eccity	Average consumption of a 125 electric scooter: 6kWh/100 km, i.e. 0.06kWh/km EF upstream: average of the upstream EFs "Motorcycle <=250cm3 - mixed 2018" and "Motorcycle >250cm3 - mixed 2018"
Metro/ Tramway		0,005	Base Carbone® V23.1	Metro, tramway, trolleybus - 2018 - Conurbation of 100,000 to 250,000 inhabitants - France
Bicycle/on foot		0,000		Upstream emissions are not taken into account: the EF is equal to 0
Electric bicycle	0,014	0,009	Base Carbone® V23.1	EF upstream: Electric-assisted bicycle - France Average electricity consumption of a scooter: 0.014 kWh/km
Public bus		0,113	Base Carbone® V23.1	Bus - Diesel - France
Electric public bus	0,17	0,009	Based on Base Carbone® V23.1 and MTE	Upstream: vehicle manufacturing EF from the Base Empreinte documentation for Bus-Coach of 4 kgCO2e/kg, occupancy rate of 10 people, weight of 10.7 tonnes and total distance of 480,000 km Electricity consumption of 168 kWh/100 km (very dense environment). Source: Analyse des coûts bénéfices des véhicules électriques - autobus et autocars, 2018 Assumption: occupancy rate of 10 people
Minibus		0,041	Mobitool 2020	
Coach / shuttle		0,0295	Base Carbone® V23.1	Coach - diesel
Electric coach / shuttle	0,06	0,004	Based on Base Carbone® V23.1 and MTE	Upstream: vehicle manufacturing EF from the Base Empreinte documentation for Bus-Coach of 4 kgCO2e/kg, occupancy rate of 30 people, weight of 12 tonnes and total distance of 361,884 km Electricity consumption of 165 kWh/100 km (mixed environment). Source: Analyse des coûts bénéfices des véhicules électriques - autobus et autocars, 2018 (MTE) Assumption: occupancy rate of 30 people

Train		Varies according to the country of the event	BEIS 2022, IEA electricity EFs 2022	Based on BEIS 2022 and adapted to the country according to the EF of the energy mix (IEA 2022), non-shareable basis
Sailing boats		0,000		Upstream emissions are not taken into account: the EF is equal to 0
Motorboat		0,064	Base Carbone® V23.1	River shuttle - 2009 data - France
Cruise ship		0,39	Howitt, et al., 2010	Source "Carbon emissions from international cruise ship passengers' travel to and from New Zealand" Howitt, Revol, Smith, 2010

Aerial

Plane

For air travel, EFs vary between short, medium and long-haul flights. An index function has been created to select the short, medium or long-haul column according to the distance entered by the user. Short-haul flights are considered for a one-way distance of less than 463 km, medium-haul flights for a one-way distance of between 463 and 3,700 km, and long-haul flights for a one-way distance of over 3,700 km.

We also differentiate between economy and business class, with different EFs: a business passenger occupies more space in the aircraft, and therefore has a higher carbon footprint. EFs do not take into account the services offered on board the aircraft.

Air EFs take into account condensation trails.

Mode of travel	Short-haul kgC02e/pers.km	Medium-haul kgC02e/pers.km	Long-haul kgCO2e/pers.km	EF source	EF title
Plane - economy	0,205	0,225	0,151	BEIS V1.1	Economy class, Well-To-Tank, with RFI
Plane - business class	0,308	0,652	0,438	BEIS V1.1	Business class - Well-To-Tank emissions - with RFI
Private jet	2,9	2,9	2,9	My daily jet	Average based on CO2e/pers emissions of 7 private jets on a Paris - London trip
Helicopter	0,542	0,542	0,542	Based on OFAC and the Base Carbone® V23.1	Average of the "AvGas" and "Kerosene" EFs Upstream: "vehicle manufacturing" EF

Private jet

The private jet EF is calculated from the average CO2e/person emission results of 7 private jets that flew Paris - London:

Aircraft	Co2 emissions per pers.
Beechcraft Hawker 400XP	474 kg Co2
Beechcraft King Air 350	645 kg Co2
Bombardier Challenger 850	484 kg Co2
Bombardier Learjet 60	1 200 kg Co2
Cessna Citation CJ2	1 299 kg Co2
Embraer Phenom 300	866 kg Co2
Dassault Falcon 7X	1 452 kg Co2

Source: https://mydailyjet.com/ressources/ecologie-jet-prive-empreinte-carbone

Helicopter

The Helicopter EF is broken down between upstream emissions and in-flight emissions.

Upstream emissions:
The EF calculation is based on a document produced by the FOCA (Swiss Federal Office of Civil Aviation), which gives fuel consumption per hour for almost 150 helicopter models.
From the list of models, we estimated the average weight of a helicopter at 3,500 kg. The "vehicle manufacturing" EF from Base Carbone® V23.1 is 5.5 kgCO2e/kg.
We assume a service life of 20 years, with 500 flight hours per year and an average speed of 220 km/h. This gives a total distance covered over the entire service life of 2,200,000 km.
Based on the helicopter models on the list, the average passenger capacity is 8 passengers.
Upstream emissions/passenger.km = 0.001067073 kgCO2e/passenger.km

In-flight emissions:
The FOCA document gives an average consumption per hour of 257 kg of fuel. According to the models on the list, 50% use AvGas, and 50% use kerosene.
By averaging the "AvGas" and "Kerosene" EFs, Europe zone, from Base Carbone® V23.1, the helicopter fuel EF equals 3.8 kgCO2e/kg.
With the average speed of a helicopter being 220 km/h and the average capacity 8.2 passengers, we obtain the EF for a helicopter flight = 0.540486243 kCO2e/km.person.

The upstream EF and the flight EF are added together to obtain a helicopter EF = 0.5416 kgCO2e/km.person.

Mode of transport: unknown

The user can also select "Unknown" as the mode of transport, if the information is not available.
Assumptions on the distribution of transport modes have been made according to the distance travelled entered by the user. These assumptions are set out in the table below.
In a conservative approach, when assumptions are made about a journey made by car, the tool only uses the EFs of a combustion-engine car. The EF used for the train is the France train EF.

The user thus enters the origin of the participants and the number of participants, and the tool will use an EF calculated from the various EFs of the transport modes present in the tool, according to the distribution percentages of the transport modes and the distance range entered.

Example: 100 participants of national origin in France, the tool takes an average one-way distance of 500 km, with 60% of participants by car, 30% by train, 8% by economy plane and 2% by business plane. The EF used is 0.162 kgCO2e/pers.km.

Origin of participants	Local (0 - 15 km)	Regional (15 - 100 km)	National (100 - 1,000 km)	Same continent (1,500 km)	Neighboring continent (3,500 km)	Other continent (7,500 km)	Distant continent (15,000 km)
Distance used	5 km	40 km	500 km	1 500 km	3 500 km	7 500 km	15 000 km
Individual car	50%	60%	60%				
Carpooling	10%	10%					
Metro/Tramway	30%						
Bicycle/on foot	10%						
Train		30%	30%	10%			
Plane - economy			8%	72%	80%	50%	50%
Plane - business			2%	18%	20%	50%	50%
EF Unknown France (kgCO2e/pers.km)	0,126	0,150	0,162	0,280	0,310	0,295	0,295

Imperial system

The user can enter the miles travelled. The miles are then converted into km by the tool, before being converted into kgCO2e using the EFs presented above.

The mile/km conversion ratio is as follows:

1	mile	1,609344498	km

The EFs in person.mile are recorded in the following table:

Mode of travel	Electricity consumption (kWh/ pers.mile)	EF (kgCO2e/ pers.mile)
Individual car		0,370
Individual electric car	0,274	0,135
Individual hybrid car		0,295
Carpooling		0,161
Electric carpooling	0,119	0,058
Hybrid carpooling		0,128
Individual van		0,414
Motorcycle/scooter		0,216

Electric motorcycle/scooter	0,097	0,034
Metro/ Tramway		0,008
Bicycle/on foot		0
Electric bicycle	0,023	0,014
Public bus		0,182
Electric public bus	0,27	0,014
Minibus		0,066
Coach / shuttle		0,047
Electric coach / shuttle	0,089	0,007
Train		Varies according to the country of the event
Sailing boats		0,000
Motorboat		0,103
Cruise ship		0,628

Mode of travel	**Short-haul kgC02e/pers.mile**	**Medium-haul kgC02e/pers.mile**	**Long-haul kgCO2e/pers.mile**
Plane - economy	0,330	0,362	0,243
Plane - business class	0,496	1,049	0,705
Private jet	4,67	4,67	4,67
Helicopter	0,872	0,872	0,872

Origin of participants	**Local (0 - 10 miles)**	**Regional (10 - 50 miles)**	**National (50 - 500 miles)**	**Same continent (1,000 miles)**	**Neighboring continent (2,500 miles)**	**Other continent (5,000 miles)**	**Distant continent (10,000 miles)**
Distance used	5 miles	20 miles	225 miles	1000 miles	2500 miles	5000 miles	10000 miles
Individual car	50%	60%	60%				
Carpooling	10%	10%					
Metro/Tramway	30%						
Bicycle/on foot	10%						
Train		30%	30%	10%			
Plane - economy			8%	72%	80%	50%	50%
Plane - business			2%	18%	20%	50%	50%
EF Unknown France (kgCO2e/pers.miles)	0,204	0,241	0,261	0,451	0,500	0,474	0,474

Freight

For the Freight section, the user is given the choice of entering data in kg, m^3 for the metric system, or in lbs, US ton and ft3 for the imperial system, or in number of vehicles, depending on the information available.
When the unit entered is the number of vehicles, the user cannot enter data for the "train", "container" and "aircraft" categories.

Almost all EFs come from BEIS 2023, in kgCO2e/tonne.km and kgCO2e/km.
For EF in m^3 of material, conversion factors used in invoicing by logistics professionals have been used. They differentiate between air, sea and land.

Imperial system

lbs and US tons are converted to kg before being converted to kgCO2e. Similarly, ft3 are converted to m3. Finally, miles are converted to km.
The conversion ratios between the metric and imperial systems are the same for all delivery vehicles:

1	mile	1,609	km
1	lbs	0,454	kg
1	US ton	907,19	kg
1	ft3	0,028	m3

Electric utility

The EF is calculated from the average electricity consumption of a utility vehicle (according to Transport Media) and the EF of the energy mix of the country hosting the event.

EF electric utility vehicle (kgCO2e/km) = EF of the country's energy mix (kgCO2e/kWh) x Average electricity consumption of an electric utility vehicle (kWh/km) + EF upstream utility vehicle (kgCO2e/km).

For electricity consumption in kg of material, it is calculated by assuming that the ratio between the EF of the utility vehicle in kgCO2e/km and the EF of the utility vehicle per kg of equipment is the same as between the electricity consumption of the electric utility vehicle in kWh/km and the electricity consumption per kg of equipment (rule of three).

Electric utility vehicle consumption per kg (kWh/kg.km) = Electric utility vehicle consumption (kWh/km) / EF utility vehicle (kgCO2e/km) x EF utility vehicle per kg (kgCO2e/kg.km)

Refrigerated van

For the refrigerated van, the carbon impact is split between fuel consumption, for driving and for operating the integrated refrigeration unit, and the carbon impact linked to refrigerant leakage from the refrigeration unit.

Emissions linked to the energy consumption of the refrigeration unit on board the van are calculated using information from the Comite National Routier (CNR), which gives the average

fuel consumption of a refrigeration unit per hour, and the average speed in km/h of a refrigerated van.

EF refrigerated fuel consumption (kgCO2e/km) = EF of an average utility vehicle (kgCO2e/km) + EF of gasoline (kgCO2e/liter) x average fuel consumption of a refrigeration unit (liter/hour) / average speed of a refrigerated van (km/h)
I.e. EF refrigerated (kgCO2e/km) = 0.27 + 3.1 x 2.5 / 57.3

The carbon impact of a refrigerated van is the sum of the impact linked to fuel consumption, and to refrigerant gas leakage.

For the EF in kg of material, the ratio between the EF in number of trucks of the utility vehicle and that of the refrigerated van is transposed to this EF in kg of material (excluding refrigerants).

EF refrigerated van per kg (kgCO2e/kg.km) = EF refrigerated van (kgCO2e/km) / EF utility vehicle (kgCO2e/km) x EF utility vehicle per kg (kgCO2e/kg.km)

We also take into account emissions linked to the leakage of refrigerants used in the refrigeration unit. According to Base Carbone® V23.1 data, the quantity of refrigerants for a vehicle of this size is 2.2 kg, and the annual leakage rate is 25%. Thus, per year, for a utility vehicle, the quantity lost is 0.55 kg.
According to CNR data, a truck covers an average of 140,850 km per year, giving a value in kg of fluid per km and per truck of 3.9E-06 kg/truck.km.
According to Base Carbone® V23.1 resources, the refrigerant gases most commonly used in the refrigeration units of trucks of this size are 85% R134a and 15% R404a.

Refrigerant	EF (kgCO2e/kg)	Source	Assumption
R134a	1300	Base Carbone® V23.1	
R404a	3490	Base Carbone® V23.1	
Refrigerant EF of a refrigerated van	1696	Based on Base Carbone® V23.1	From the air-conditioning table in Base Carbone® V23.1 Transport by truck with pulley-belt system 85% R134a and 15% R404a

Per utility vehicle and per km, we then obtain the EF linked to refrigerant gas leakage of 0.0066 kgCO2e/km.

For the EF in kg of material linked to refrigerants, we assume that an average utility vehicle has a payload of 820 kg (according to Petit Forestier). This gives an EF in kg of material and per km of 8.1E-06 kgCO2e/kg.km.

For the EF linked to refrigerant leakage in m3 of material, we use the road transport conversion factor used by market standards, which is 333 kg/m3 (source: DSV).

Electric refrigerated van

The electricity consumption of an electric refrigerated van (kWh/km) is calculated by assuming that the ratio between the refrigerated van and the electric refrigerated van is the same as between the utility vehicle and the electric utility vehicle (rule of three).

Electric refrigerated van consumption (kWh/km) = EF refrigerated van (kgCO2e/km) / EF utility vehicle (kgCO2e/km) x Electric utility vehicle consumption (kWh/km)

The carbon impact linked to refrigerant leakage is calculated using the same methodology as for a combustion-engine refrigerated van. The same EF in kgCO2e/truck.km is used.

For electricity consumption in kg of material, it is calculated by assuming that the ratio between the EF of the utility vehicle in trucks and the EF of the utility vehicle in kg of material is the same as between the electricity consumption of the electric refrigerated van in number of trucks and that in kg of material.

Electric refrigerated van consumption per kg (kWh/kg.km) = Electric refrigerated van consumption (kWh/km) / EF utility vehicle (kgCO2e/km) x EF utility vehicle per kg (kgCO2e/kg.km)

Similarly, the same EF in kg and m3 of material is used to estimate the carbon impact of refrigerants as for the refrigerated van.

Hydrogen utility vehicle

The EF of the hydrogen utility vehicle in kg of material is calculated from the EF of the hydrogen utility vehicle in number of vehicles (kgCO2e/km), which corresponds to a 3.5-tonne truck, and the average empty weight of a utility vehicle, which is 2.1 tonnes according to ADEME.

EF hydrogen utility vehicle per kg (kgCO2e/kg.km) = EF hydrogen utility vehicle (kgCO2e/km) /(3500-2100)

Refrigerated truck <33t

The carbon impact of the refrigerated truck is also shared between the impact linked to fuel consumption and the impact of refrigerant leakage.
The impact of fuel consumption is calculated from BEIS data.
For the impact of refrigerants, we use the same emission factor per truck and per km as for the refrigerated van, i.e. 0.0066 kgCO2e/km.

We assume that the average payload of a refrigerated truck under 33 tonnes is 9,380 kg (according to Petit Forestier for a 19-tonne refrigerated truck).
Per kg of material, we obtain: 7.1E-07 kgCO2e/kg.km.
For m3 of material, the same method is used as for the refrigerated van.

Refrigerated trucks >33t

The carbon impact of the refrigerated truck is also shared between the impact linked to fuel consumption and the impact of refrigerant leakage.
The impact of fuel consumption is calculated from BEIS data.
For the impact of refrigerants, the same methodology is used as for refrigerated vans and the <33t truck, but with a different quantity of refrigerant per truck, and a different leakage rate. According to the Bilan Carbone®resources, for a refrigerated truck of this size, the quantity of refrigerant is 6.5 kg, and the annual leakage rate is 15%, giving a quantity of 6.9E-06 kg/truck.km. The refrigerant used in trucks over 33 tonnes is usually R404a, with a GWP of 1300. This gives an EF per truck and per km of 0.027 kgCO2e/km.

We assume that the average payload of a refrigerated truck over 33 tonnes is 28,000 kg (according to Petit Forestier for a 38-tonne refrigerated truck).
Per kg of material, we obtain: 9.74E-07kgCO2e/kg.km.
For m3 of material, the same method is used as for the refrigerated van.

Refrigerant leaks

To summarize, here are the EFs related to refrigerant leakage by vehicle type, and according to the unit selected by the user. These EFs are added to the EFs for fuel consumption to obtain total EFs.

Vehicle type	EF refrigerants	Unit	Source	Assumptions
Refrigerated van	0,01	kgCO2e/truck.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	
Electric refrigerated van	0,01	kgCO2e/truck.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	
Refrigerated truck < 33 T	0,01	kgCO2e/truck.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	
Refrigerated truck > 33 T	0,03	kgCO2e/truck.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	

Vehicle type	EF refrigerants	Unit	Source	Assumptions
Refrigerated van	0,00001	kgCO2e/kg.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	Payload: 820 kg
Electric refrigerated van	0,00001	kgCO2e/kg.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	Payload: 820 kg
Refrigerated truck < 33 T	0,000001	kgCO2e/kg.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	Payload: 9380 kg
Refrigerated truck > 33 T	0,000001	kgCO2e/kg.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	Payload: 28000 kg

Vehicle type	EF refrigerants	Unit	Source	Assumptions
Refrigerated van	0,00269	kgCO2e/m3.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	333 kg/m3
Electric refrigerated van	0,00269	kgCO2e/m3.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	333 kg/m3
Refrigerated truck < 33 T	0,00024	kgCO2e/m3.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	333 kg/m3
Refrigerated truck > 33 T	0,00032	kgCO2e/m3.km	Based on BC ADEME V23.1 and Bilan Carbone V8.9 spreadsheet	333 kg/m3

EF in number of vehicles

In km

Vehicle type	EF (kgCO2e/km) or Electricity consumption (kWh/km)		Source	EF title and assumptions
Utility vehicle	0,26	kgCO2e/km	BEIS 2023	Van - Average (up to 3.5 tonnes) - Petrol - Global
Electric utility	0,25	kWh/km	Transport Media	Average electricity consumption of an electric utility vehicle = 0.25 kWh/km
Refrigerated van	0,41	kgCO2e/km	Based on BEIS 2023, CNR data and Base Carbone® V23.1	EF refrigerated van fuel consumption + EF refrigerants
Electric refrigerated van (electricity consumption only)	0,41	kWh/km	Based on BEIS 2023, Transport Media, CNR and Base Carbone® V23.1	Calculated from the EFs of the utility vehicle and the refrigerated van and the consumption of the electric utility vehicle + EF refrigerants
Refrigerated truck < 33 T	1,11	kgCO2e/km	From BEIS 2023	HGVs refrigerated (all diesel) - Articulated (>3.5 - 33t), Average Laden + EF refrigerants
Refrigerated truck > 33 T	1,34	kgCO2e/km	From BEIS 2023	HGVs refrigerated (all diesel) - Articulated (>33t), Average Laden + EF refrigerants
HGV < 33 T	0,95	kgCO2e/km	BEIS 2023	HGV (all diesel) - Articulated (>3.5 - 33t), Average Laden
HGV > 33 T	1,13	kgCO2e/km	BEIS 2023	HGV (all diesel) - Articulated (>33t), Average Laden
Hydrogen utility vehicle	0,31	kgCO2e/km	Base Carbone® V23.1	Utility vehicle <3.5t - Hydrogen decentralized electrolysis EU
Cargo bike	0,00	kgCO2e/km		Upstream emissions are not taken into account, EF is zero

In miles

Vehicle type	EF (kgCO2e/miles) or Electricity consumption (kWh/miles)		Source	EF title and assumptions
Utility vehicle	0,41	kgCO2e/miles	From BEIS 2023	Van - Average (up to 3.5 tonnes) - Petrol - Global
Electric utility	0,40	kWh/km	Transport Media	Average electricity consumption of an electric utility vehicle = 0.25 kWh/km
Refrigerated van	0,66	kgCO2e/miles	Based on BEIS 2023, CNR data and Base Carbone® V23.1	EF refrigerated van fuel consumption + EF refrigerants
Electric refrigerated van (electricity consumption only)	0,66	kWh/km	Based on BEIS 2023, Transport Media, CNR and Base Carbone® V23.1	Calculated from the EFs of the utility vehicle and the refrigerated van and the consumption of the electric utility vehicle + EF refrigerants
Refrigerated truck < 33 T	1,78	kgCO2e/miles	From BEIS 2023	HGVs refrigerated (all diesel) - Articulated (>3.5 - 33t), Average Laden + EF refrigerants
Refrigerated truck > 33 T	2,15	kgCO2e/miles	From BEIS 2023	HGVs refrigerated (all diesel) - Articulated (>33t), Average Laden + EF refrigerants
HGV < 33 T	1,53	kgCO2e/miles	From BEIS 2023	HGV (all diesel) - Articulated (>3.5 - 33t), Average Laden
HGV > 33 T	1,82	kgCO2e/miles	From BEIS 2023	HGV (all diesel) - Articulated (>33t), Average Laden
Hydrogen utility vehicle	0,50	kgCO2e/miles	From Base Carbone® V23.1	Utility vehicle <3.5t - Hydrogen decentralized electrolysis EU
Cargo bike	0,00	kgCO2e/miles		Upstream emissions are not taken into account, EF is zero

EF by weight of material

In kg of material.km

Vehicle type	Unit entered: kg of material		Source	EF title
Utility vehicle	0,0009	kgCO2e/kg.km	BEIS 2023	Van - Average (up to 3.5 tonnes) - Petrol - Global
Electric utility	0,0009	kWh/kg.km	Based on BEIS 2023 and Transport Media	Calculated from the EF of the utility vehicle, the electricity consumption of the electric utility vehicle in number of trucks and the utility vehicle EF in kg
Refrigerated van	0,0015	kgCO2e/kg.km	Based on BEIS 2023, CNR data and Base Carbone® V23.1	Calculated from the EFs of the utility vehicle and the refrigerated van in number of trucks and the utility vehicle EF in kg + EF refrigerants

Electric refrigerated van	0,0015	kWh/kg.km	Based on BEIS 2023, Transport Media, CNR and Base Carbone® V23.1	Calculated from the EF of the utility vehicle, the consumption of the electric refrigerated van in number of trucks and the utility vehicle EF in kg
Refrigerated truck < 33 T	0,0002	kgCO2e/kg.km	BEIS 2023	HGVs refrigerated (all diesel) - Articulated (>3.5 - 33t), Average Laden + EF refrigerants
Refrigerated truck > 33 T	0,0001	kgCO2e/kg.km	BEIS 2023	HGVs refrigerated (all diesel) - Articulated (>33t), Average Laden + EF refrigerants
HGV < 33 T	0,0001	kgCO2e/kg.km	BEIS 2023	HGV (all diesel) - Articulated (>3.5 - 33t), Average Laden
HGV > 33 T	0,0001	kgCO2e/kg.km	BEIS 2023	HGV (all diesel) - Articulated (>33t), Average Laden
Hydrogen utility vehicle	0,0002	kgCO2e/kg.km	Based on Base Carbone® V23.1	Assumption of an average load of 1,400 kg for a 3.5t utility vehicle
Cargo bike	0,0000	kgCO2e/kg.km		Upstream emissions are not taken into account, EF is zero
Train	0,000034	kgCO2e/kg.km	BEIS 2023	Rail - Freight train
Plane	0,0012	kgCO2e/kg.km	BEIS 2023	Freight flights - International - with RF
Container ship	0,00002	kgCO2e/kg.km	BEIS 2023	Cargo ship - Container ship - Average

In lbs.miles and US ton.miles

Vehicle type	**Unit entered: lbs of material**		**Unit entered: US ton of material**	
Utility vehicle	0,00067	kgCO2e/lbs.miles	1,344	kgCO2e/ton.miles
Electric utility	0,00065	kWh/lbs.miles	1,306	kWh/ton.miles
Refrigerated van	0,00108	kgCO2e/lbs.miles	2,168	kgCO2e/ton.miles
Electric refrigerated van	0,00107	kWh/lbs.miles	2,142	kWh/ton.miles
Refrigerated truck < 33 T	0,00012	kgCO2e/lbs.miles	0,249	kgCO2e/ton.miles
Refrigerated truck > 33 T	0,00008	kgCO2e/lbs.miles	0,162	kgCO2e/ton.miles
HGV < 33 T	0,00010	kgCO2e/lbs.miles	0,204	kgCO2e/ton.miles
HGV > 33 T	0,00007	kgCO2e/lbs.miles	0,131	kgCO2e/ton.miles
Hydrogen utility vehicle	0,00016	kgCO2e/lbs.miles	0,324	kgCO2e/ton.miles
Cargo bike	0,00000	kgCO2e/lbs.miles	0,000	kgCO2e/ton.miles
Train	0,00003	kgCO2e/lbs.miles	0,050	kgCO2e/ton.miles
Plane	0,00090	kgCO2e/lbs.miles	1,796	kgCO2e/ton.miles

Container ship	0,00002	kgCO2e/lbs.miles	0,036	kgCO2e/ton.miles

EF by volume of material transported

Converting kg into m3 of material

Road transport

To convert to m3 of material, we use the road transport conversion factor used by market standards, which is 333 kg/m3 (source: DSV).
The EFs and electricity consumption in kg of material are therefore multiplied by 333 for all road vehicles.

Air transport

For air transport, we use the air transport conversion factor used by market standards, which is 167 kg/m3 (source: DSV). The airplane EF in kgCO2e/km.kg is multiplied by 167.

Maritime transport

For maritime transport, we use the maritime transport conversion factor used by market standards, which is 1,000 kg/m3 (source: DSV). The container ship EF in kgCO2e/km.kg is therefore multiplied by 1,000.

Vehicle type	**Unit entered: m3 of material**		**Source**
Utility vehicle	0,31	kgCO2e/m3.km	Based on BEIS 2023
Electric utility	0,30	kWh/m3.km	Based on BEIS 2023 and Transport Media
Refrigerated van	0,50	kgCO2e/m3.km	Based on BEIS 2023, CNR and Base Carbone® V23.1
Electric refrigerated van	0,49	kWh/m3.km	Based on BEIS 2023, Transport Media, CNR and Base Carbone® V23.1
Refrigerated truck < 33 T	0,06	kgCO2e/m3.km	Based on BEIS 2023
Refrigerated truck > 33 T	0,04	kgCO2e/m3.km	Based on BEIS 2023
HGV < 33 T	0,05	kgCO2e/m3.km	Based on BEIS 2023
HGV > 33 T	0,03	kgCO2e/m3.km	Based on BEIS 2023
Hydrogen utility vehicle	0,07	kgCO2e/m3.km	Based on Base Carbone® V23.1
Cargo bike	0,00	kgCO2e/m3.km	Upstream emissions are not taken into account - the EF is zero
Train	0,01	kgCO2e/m3.km	Based on BEIS 2023
Plane	0,21	kgCO2e/m3.km	Based on BEIS 2023
Container ship	0,02	kgCO2e/m3.km	Based on BEIS 2023

In ft3.miles

Vehicle type	Unit entered: ft3 of material		Source
Utility vehicle	0,0140	kgCO2e/ft3.miles	Based on BEIS 2023
Electric utility	0,0136	kWh/ft3.miles	Based on BEIS 2023 and Transport Media
Refrigerated van	0,0227	kgCO2e/ft3.miles	Based on BEIS 2023, CNR and Base Carbone® V23.1
Electric refrigerated van	0,0224	kWh/ft3.miles	Based on BEIS 2023, Transport Media, CNR and Base Carbone® V23.1
Refrigerated truck < 33 T	0,0026	kgCO2e/ft3.miles	Based on BEIS 2023
Refrigerated truck > 33 T	0,0017	kgCO2e/ft3.miles	Based on BEIS 2023
HGV < 33 T	0,0021	kgCO2e/ft3.miles	Based on BEIS 2023
HGV > 33 T	0,0014	kgCO2e/ft3.miles	Based on BEIS 2023
Hydrogen utility vehicle	0,0034	kgCO2e/ft3.miles	Based on Base Carbone® V23.1
Cargo bike	0,0000	kgCO2e/ft3.miles	Upstream emissions are not taken into account - the EF is zero
Train	0,0005	kgCO2e/ft3.miles	Based on BEIS 2023
Plane	0,0094	kgCO2e/ft3.miles	Based on BEIS 2023
Container ship	0,0011	kgCO2e/ft3.miles	Based on BEIS 2023

Data specific to Climeet Space Designer

Forecast freight calculation in the "Catalog" tab

In the Catalog section of Climeet, dedicated to space designers, users can calculate the projected freight associated with a space. In the parameters, you can specify whether or not manufacturing is local, and choose a distance range in km.

Space forecast freight emissions are calculated from the surface area in m² entered in the space parameters. This surface area is converted into m3 by dividing the value by 10, based on internal data from space designers.

As a function of distance, assumptions are made about the distribution of freight transport modes, and the following EFs are obtained:

User-selected distance	EF (kgCO2e/m3.km)	EF source	Transport mode assumptions
+/- 50km from the event	0,052	Based on BEIS 2023	100% poids lourd <33t
+/- 200 km from the event	0,052	Based on BEIS 2023	100% poids lourd <33t
+/- 600km from the event	0,052	Based on BEIS 2023	100% poids lourd <33t
+/- 1000 km from the event	0,052	Based on BEIS 2023	100% poids lourd <33t
+/- 3000km from the event	0,0915	Based on BEIS 2023	75% poids lourd <33t / 25% avion

+/- 5000km from the event	0,131	Based on BEIS 2023	50 % poids lourd <33t / 25% bateau / 25% avion
+/- 10000km from the event	0,171	Based on BEIS 2023	75% avion / 25% bateau

NB: the imperial system is only implemented in Climeet Organizer

Data specific to Climeet Space Designer and Caterer

Freight calculation in the "My services" tab

The user has the choice of entering the known fuel consumption or estimating the number of kg, m3 or trucks.

The EF used for fuel consumption are as follows:

Fuels	EF	Unit	Source	Assumption
Gasoline (liter)	2,70	kgCO2e/litre	Base Carbone® V23.1	Gasoline - Unleaded premium fuel (95, 95-E10, 98)
Diesel (liter)	3,10	kgCO2e/litre	Base Carbone® V23.1	Road diesel - B7
Electricity (kWh)	Depends on country of event	kgCO2e/kWh	Based on IEA 2022	EF of the country's electricity mix
LNG (liter)	2,15	kgCO2e/litre	Base Carbone® V23.1	LNG, Liquefied Natural Gas - (including road, sea and river)
CNG (kg)	2,96	kgCO2e/kg	Base Carbone® V23.1	CNG, Compressed Natural Gas for road vehicles

NB: the imperial system is only available on Climeet Organizer

Material and space planning

Physical data

Most of the EFs in the "Material and space planning" category come from the Base Carbone® V23.1, and the INIES database version 4.1.33.
For small electronic items for which the EF did not exist in Base Carbone® V23.1, the EF was calculated from the weight of the item and the "Electrical items - IT" EF from the BEIS database.
For other elements for which no EF is available in the databases, the EF was calculated from the EF of the main material and the average weight of the element.

All EFs are listed in the table below.
For each item, different units relevant to the nature of the item are proposed.

The conversion ratios between metric and imperial are the same for all items.

Conversion ratios between units of different dimensions (weight, volume, length, surface area) vary according to the material.
New: the Material and space planning structure has evolved significantly to get closer to the realities of the trade!
Thanks to a major cooperative effort with a technical and audiovisual service provider, the various Climeet categories have evolved to match the reality of the trade, and new audiovisual items have been added.
New EFs and new values for existing EFs are in orange.

Stands and structures

Stands and structures	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Standard wood (kg)	0,04	0,16	kgCO2e/kg	Base Carbone® V23.1	Short-life wood (furniture...) - manufacturing	0,68	2	10
Standard wood (m3)	24,22	104,74	kgCO2e/m3	From Base Carbone® V23.1	From the wood EF (kg) Density: 660 kg/m3	0,68	2	10

Plywood (m²)	6,96	18,06	kgCO2e/m²	Based on INIES version 4.1.33	Okoume-poplar plywood panel with phenolic resin (PF), manufactured in France, for multiple uses (v.1.2) *Carbon storage in wood not taken into account as service life <100 years	0,68	2	10
Plywood (kg)	1,09	2,82	kgCO2e/kg	Based on INIES version 4.1.33	EF plywood (m²) / 6.4 Weight used in INIES documentation: 6.4 kg	0,68	2	10
Plywood (linear meter)	17,40	45,15	kgCO2e/ml	Based on INIES version 4.1.33	EF plywood (m²) * 2.5 Assumption: 2.5 m height for a partition	0,68	2	10
Medium (m²)	15,92	37,02	kgCO2e/m²	Based on INIES version 4.1.33	MDF (medium-density fibreboard) panels used in dry environments, fireproofed untreated [thickness 22 mm, up to 30 mm] (v.1.1) *Carbon storage in wood not taken into account as service life <100 years	0,68	2	10
Medium (kg)	0,98	2,29	kgCO2e/kg	Based on INIES version 4.1.33	EF medium (m²) / 16.2 Weight used in INIES documentation = 16.2 kg	0,68	2	10
Melamine (m²)	13,21	30,71	kgCO2e/m²	Based on INIES version 4.1.33	P2-type particleboard panels (panels for interior fittings used in dry environments), fireproofed, melamine-faced [thickness 19 mm, up to 25 mm] (v.1.1) *Carbon storage in wood not taken into account as service life <100 years	0,68	2	10
Melamine (kg)	0,98	2,29	kgCO2e/kg	Based on INIES version 4.1.33	EF melamine (m²) / 13.5 Weight used in INIES documentation = 13.5 kg	0,68	2	10
Melamine (linear meter)	33,01	76,76	kgCO2e/ml	Based on INIES	EF melamine (m²) * 2.5 Assumption: 2.5 m height for a partition	0,68	2	10

				version 4.1.33				
Glass (kg)	0,43	0,93	kgCO2e/kg	Base Carbone® V23.1	Glass - new	0,72	2	5
Glass (m²)	17,94	18,20	kgCO2e/m²	INIES version 4.1.33	Tempered glass 4.5 and 6 mm (excluding installation accessories)	0,72	2	5
Steel (kg)	1,90	2,21	kgCO2e/kg	Base Carbone® V23.1	Steel or tinplate - new	0,71	20	100
Steel (ml)	4,75	5,13	kgCO2e/ml	INIES version 4.1.33	Steel framework for partitioning and suspended ceilings [T-profile between 35 and 48 mm] - default environmental data (v.1.1)	0,71	20	100
Aluminium (kg)	7,49	7,80	kgCO2e/kg	Base Carbone® V23.1	Aluminium - new	0,54	20	100
Plastic (kg)	1,79	3,27	kgCO2e/kg	Base Carbone® V23.1	Plastic - PET - new	0,54	2	10
Plastic (m²)	7,15	7,17	kgCO2e/m²	INIES version 4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,54	2	10
Textile (kg)	14,34	14,37	kgCO2e/kg	Based on INIES version 4.1.33	Grammage 499 g/m² (average of references)	0,87	1	2
Textile (m²)	7,15	7,17	kgCO2e/m²	INIES version 4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,87	1	2
Brushed cotton (m²)	1,14	1,15	kgCO2e/m²	INIES version 4.1.33	Thermal and acoustic insulation for partitions in cotton fiber [R=2.5 m².K/W] - default data (v.1.2)	0,885	2	2
Brushed cotton (kg)	2,02	2,03	kgCO2e/kg	From INIES version 4.1.33	Grammage 567 g/m²	0,885	2	2
Cardboard (kg)	0,39	1,13	kgCO2e/kg	Base Carbone® V23.1	Cardboard - new	1,36	2	2

Cardboard (m²)	0,39	1,13	kgCO2e/m²	Based on Base Carbone® V23.1	Triple-corrugated cardboard; grammage 1,000 g/m²	1,36	2	2
Lighting bridge (ml)	52,44	54,6	kgCO2e/ml	Based on Base Carbone® V23.1	"Aluminium" EF (kgCO2e/kg) Assumption: a 3 ml lighting truss = 21kg: 7kg of aluminium / ml	0,54	50	250
Stage / deck / flooring (m²)	165,46	174,12	kgCO2e/m²	Based on Base Carbone® V23.1	EF aluminium (kgCO2e/kg) and EF plywood Assumption: 2mx1m = 40 kg 50% aluminium and 50% plywood	0,61	50	250
Reception tent (m²)	43,81	47,16	kgCO2e/m²	Based on France Chapiteaux and Base Carbone® V23.1	Estimate of average quantities of steel (structures) and polyester (tarpaulins) based on references from the France Chapiteaux 2024 catalog	0,61	20	100
Marquee (m²)	32,60	36,73	kgCO2e/m²	Based on France Chapiteaux and Base Carbone® V23.1	Estimate of average quantities of steel (structures) and polyester (tarpaulins) based on references from the France Chapiteaux 2024 catalog	0,61	20	100
Concrete (kg)	0,155	0,181	kgCO2e/kg	Base Carbone® V23.1	Reinforced concrete	1	2	10
Drywall / plaster (m²)	2,462	2,98	kgCO2e/m²	INIES v.4.1.33	Placodur BA 13 plasterboard (excluding frames)	1	20	100
Metal (kg)	4,385	4,696	kgCO2e/kg	Base Carbone® V23.1	Average of the "aluminium" and "steel" EFs	0,67	20	100
Green wall (m²)	45	48,86	kgCO2e/m²	Several manufacturers	Average of several manufacturers	1	2	5
Layher / scaffolding (tonne)	7492	7803	kgCO2e/ tonne	Based on Base Carbone® V23.1	"Aluminium" EF x 1000	0,54	100	400

Case of wood EF in the INIES database:

The "plywood", "medium" and "melamine" EFs come from the INIES database and account for the CO2 emissions stored in the wood during its life cycle. However, the Base Empreinte documentation specifies that sequestration can be taken into account when the wood product is considered to be in use for at least a century, which is not the case for materials used in the events industry. We have therefore chosen to remove sequestered emissions from the INIES database EFs, assuming that carbon storage is estimated at 1.850 kgCO2e/kg of product, according to the Base Empreinte documentation. The mass of the Functional Unit used in the construction of the EFs is specified in the INIES database documentation, namely:

- Plywood: 6.4 kg of wood in the FU
- Medium: 16.2 kg of wood in the FU
- Melamine: 13.5 kg of wood in the FU

To each EF with end-of-life, the value of 1.850 * wood mass of the FU has been added in kgCO2e.

Equipments

By default, the equipment listed below is considered to be rented; the number of "rental" uses is used to amortize their impact over the equipment's service life.

Lighting category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Spotlight/ Floodlight (no.)	274	296,8	kgCO2e/unit	Robe Lighting LCA	"LED BEAM 150" EF x 2	1	30	150
Moving head (no.)	411	445,2	kgCO2e/unit	Robe Lighting LCA	"LED BEAM 150" EF x 3	1	20	100
LED downlight (no.)	29,05	29,4	kgCO2e/unit	INIES v.4.1.33	Recessed interior accent lighting (spots) [P=13 to 20 W] - default environmental data (formerly "LED spot")	1	20	80
Lighting control booth (no.)	547,04	591,04	kgCO2e/unit	Based on BEIS 2023 + MA technical data sheets malighting & la-bs	Average of two lighting control booths: MA Lightcommander 12/2 model (weight 5.3 kg) and Showtec 24/48-circuit DMX memory model (weight: 5.76 kg)	1	20	100

					X 'Electrical items - IT' EF from BEIS (kgCO2e/kg)			
Lighting cabling (m)	1,14	1,74	kgCO2e/m	Base Empreinte	Adaptation of the "External electric cable" EF (copper conductor, PE insulation and PVC sheath) from 0.1 to 0.3 kg/m	1	20	100
LED strip / flexled (m)	20,01	20,7	kgCO2e/m	Base INIES v.4.1.33	LED batten [P. 40 W] - default environmental data	1	20	80
Backlit cabinet (no.)	135,22	136	kgCO2e/unit	INIES version 4.1.33	LED strips and flexible bands (power supply included) (P 36 to 75 W) - environmental data	1	30	100

Network & Cabling category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Network cable (m)	0,541	0,667	kgCO2e/m	Base INIES	Optical fiber (Networks) [8 optical fibers] - default environmental data (v.1.3)	1	30	100
Fiber transmitter / receiver (no.)	78	115	kgCO2e/unit	Base Carbone® V23.1	High-speed fiber modem	1	30	100

Power & energy category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Power distribution unit (no.)	76,53	78	kgCO2e/unit	Based on INIES database v.4.1.33	"Electrical box - default" EF X 2 (formerly "distribution board")	1	30	100
Electrical cabling (m)	3,8	5,8	kgCO2e/m	Based on Base Carbone® V23.1	External electric cable - main power supply, copper conductor, PE insulation and PVC sheath, adapted from 0.1 to 1 kg/m (formerly "power supply")	1	20	80
Generator (kg)	1,83	2,22	kgCO2e/kg	Base Carbone® V23.1	Generator	1	30	150

Triplets (no.)	2,8	3,10	kgCO2e/unit	Based on Base Carbone® V23.1	IT and electronic equipment - purchase amount (kgCO2e/euro); EF calculated from the average price of a triplet (7 euros)	1	30	100

Consumables category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Protective sheeting (m)	0,348	0,442	kgCO2e/m	Based on Base Carbone® V23.1	From the "PET plastic / new" EF in kgCO2e/kg Assumptions: width = 0.5 m Length = 300 m weight = 19 kg	1	2	2
Drumsticks and strings (no.)	0,0495	0,064	kgCO2e/unit	Based on Base Carbone® V23.1	Average of the "string" and "drumstick" EFs "Drumstick" EF = 'standard wood' EF x 110g "Guitar string" EF = 'steel' EF x 50g	1	2	2
Carbon dioxide / refill (l)	Non-shareable	Non-shareable	kgCO2e/L	Ecoinvent 3.8	Carbon dioxide production, liquid - RER	1	2	2
Gel / scrim (m)	2,25	2,49	kgCO2e/m	Based on Base Carbone® V23.1	From the "polyester" EF in kgCO2e/kg Assumptions made: Width 1.22 m, length 7.62 m, weight 1.25 kg	1	2	2
Adhesive tape (m)	Non-shareable	Non-shareable	kgCO2e/m	Based on Ecoinvent 3.8	Ethylvinylacetate production, foil - RER; width 0.05 m	1	2	2
Bulb / lamp (no.)	1,68	1,83	kgCO2e/unit	Average of 3 LCAs of 3 lamp types	Average of 3 LCAs: halogen lamps (Ledvance LCA), metal halide lamp (Metal halide lamp Lok-it! HTI 1000 LCA) and incandescent lamp (comparative fluorescent and incandescent lamp LCA)	1	2	10
Fog & haze fluid (L)	2,70	2,70	kgCO2e/L	CarbonCloud	Average of the "glycerol" EF and the "paraffin wax" EF	1	2	2

Cleaning product (kg)	0,43	0,43	kgCO2e/kg	Based on Base Carbone® V23.1	Average of the "cleaning product" EF and the "glass cleaner" EF	1	2	2
Battery / rechargeable battery (no.)	0,103	0,109	kgCO2e/unit	Based on Base Carbone® V23.1	Average of the "AA batteries" and "AAA batteries" EFs	1	2	2
Screws and nails (kg)	1,90	2,21	kgCO2e/kg	Base Carbone® V23.1	"Steel or tinplate - new" EF	0,71	2	2
Glue (kg)	3,09	3,48	kgCO2e/kg	Base Carbone® V23.1	Average adhesive mix	1	2	2
Paint (kg)	6,74	7,13	kgCO2e/kg	Base Carbone® V23.1	PU lacquer - black	1	2	2
Paint (m²)	3,11	3,23	kgCO2e/m²	INIES version 4.1.33	Interior water-based paint - default data	1	2	2
Cardboard (kg)	0,39	1,13	kgCO2e/kg	Base Carbone® V23.1	Cardboard - new	1,36	2	2
Cardboard (m²)	0,39	1,13	kgCO2e/m²	Based on Base Carbone® V23.1	Very strong triple-corrugated cardboard; grammage 1,000 g/m²	1,36	2	2
Paper (kg)	0,92	1,66	kgCO2e/kg	Base Carbone® V23.1	Paper - average - excluding use and end of life	1,03	2	2
Paper (m²)	0,11	0,20	kgCO2e/m²	Based on Base Carbone® V23.1	Assumption: 120 g/m²	1,03	2	2
Plastic film (kg)	5,50	6,98	kgCO2e/kg	Base Carbone® V23.1	PET plastic films (non-recyclable) - new	0,54	2	2
Nylon (kg)	7,63	8,02	kgCO2e/kg	Base Carbone® V23.1	Nylon	1	2	2

Cotton (kg)	16	16,39	kgCO2e/kg	Base Carbone® V23.1	Cotton yarn - partially aggregated EF	0,885	10	45

Video category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Video projector (no.)	580	604	kgCO2e/unit	Base Carbone® V23.1	4 x "Video projector" EF	1	20	100
LED wall (m²)	379	403	kgCO2e/m²	Base Carbone® V23.1	Liquid crystal display, LED backlight, m² (LCD LED), TW	1	20	60
23-55" screen (no.)	265	265	kgCO2e/unit	Base Carbone® V23.1	23.8" screen (formerly "23-55" screen")	1	20	100
55-98" screen (no.)	371	422	kgCO2e/unit	Base Carbone® V23.1	Television - 40-49 inches	1	20	100
+98" screen (no.)	1080	1118	kgCO2e/unit	Base Carbone® V23.1	2 m² advertising screen without casing	1	20	60
Video control booth (no.)	1663,5	1792,72	kgCO2e/unit	Based on Base Carbone® V23.1	Breakdown of all the items making up a video control booth Sum of the EFs "video source" + "player" EF + 2 x "switch" EF + "32" screen" EF + "soundbar" EF + "sound console" EF + "high-performance computer" EF + "tablet" EF + "laptop" EF	1	20	100
Camera (no.)	124,33	134,33	kgCO2e/unit	Based on BEIS 2023	Electrical items - IT Assumption: 5.5 kg	1	20	100
Video source (no.)	296	394	kgCO2e/unit	Base Carbone® V23.1	High-performance computer	1	30	150

Media player / image manager (no.)	148	197	kgCO2e/unit	Based on Base Carbone® V23.1	1/2 of the EF “high performance computer”	1	20	100

Sound category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Speaker (no.)	369	408	kgCO2e/unit	Base Carbone® V23.1	3 x "Hi-fi system" EF	1	20	100
Amplifier (no.)	123	136	kgCO2e/unit	Base Carbone® V23.1	Hi-fi system	1	20	100
Microphone (no.)	39,85	40	kgCO2e/unit	Ekodev LCA	Microphone LCA	1	20	100
HF intercom (no.)	6,5	7,02	kgCO2e/unit	Jabra LCA	EVOLVE3 75 STEREO WITH DESKSTAND	1	20	100
Audio mixer / Sound console (no.)	296	394	kgCO2e/unit	Base Carbone® V23.1	High-performance computer (formerly "mixing console")	1	20	100
Audio cabling (m)	0,33	0,46	kgCO2e/m	Qing Cables LCA	Twin & Multicore Speaker Flex LSZH Sheath	1	20	60
Walkie-talkie (no.)	40,60	43,29	kgCO2e/unit	Based on Base Carbone® V23.1	Hands-free walkie-talkie (Motorola) price = 200 euros; "IT, electronic and optical products 2023" EF	1	20	60
Headphones (no.)	6,5	7,02	kgCO2e/unit	Jabra LCA	EVOLVE3 75 STEREO WITH DESKSTAND	1	20	100

IT-Photo-Office category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Computer (no.)	169	189	kgCO2e/unit	Base Carbone® V23.1	Computer - desktop - office	1	20	60

PC monitor (no.)	248	265	kgCO2e/unit	Base Carbone® V23.1	23.8" screen	1	20	80
Printer / scanner (no.)	87,90	95	kgCO2e/unit	Base Carbone® V23.1	Printer - multifunction	1	20	60
Tablet (no.)	82,2	86	kgCO2e/unit	Base Carbone® V23.1	Tablet - detachable	1	20	60
VR headset (no.)	48,74	50,74	kgCO2e/unit	Base Carbone® V23.1	Virtual reality headset - LCD panel technology	1	20	80
Badge reader (no.)	2,8	3,8	kgCO2e/unit	Base Carbone® V23.1	Universal remote control without batteries (80 g), GLO	1	20	80
Barcode scanner (no.)	5,6	7,6	kgCO2e/unit	Based on Base Carbone® V23.1	2 x "Universal remote control without batteries (80 g), GLO" EF	1	20	80
Camera (photo) (no.)	30,60	32,40	kgCO2e/unit	Base Carbone® V23.1	Camera - SLR	1	20	60
Photobooth (no.)	286,57	302,73	kgCO2e/unit	Based on Base Carbone® V23.1	Sum of the EFs: photo camera, LED spot, tablet, printer/scanner, aluminium (10 kg tripod)	1	20	60
Hard drive (GB)	0,02	0,02	kgCO2e/Go	University of Wisconsin study	HDD	1	20	60

Truss-Motor-Stage category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Motor (kg)	2,93	2,93	kgCO2e/kg	Base Carbone® V23.1	Electric motor	1	50	150

Motor cabling (m)	1,9	2,9	kgCO2e/m	Based on Base Carbone® V23.1	External electric cable - main power supply, copper conductor, PE insulation and PVC sheath Adapted to 0.5 kg/m	1	20	100
Structure / truss (ml)	52,44	54,6	kgCO2e/ml	Based on Base Carbone® V23.1	"Aluminium" EF; 15 kg/ml (formerly "lighting truss")	0,54	50	250
Layher / scaffolding (tonne)	7492	7803	kgCO2e/ tonne	Based on Base Carbone® V23.1	"Aluminium" EF (kgCO2e/kg) x 1000	0,54	100	400
Practicable / stage (m^2)	165,46	174,12	kgCO2e/m^2	Based on Base Carbone® V23.1	EF aluminium and EF plywood; 2 m x 1 m = 40 kg (50% aluminium / 50% plywood)	0,61	50	250

Furniture category	**EF without end of life**	**EF with the end of life**	**Unit**	**Source**	**EF title and assumptions**	**Weighting >50% recycled materials**	**No. of "unknown" uses**	**No. of rental uses**
Chair (no.)	24,8	28,39	kgCO2e/unit	Base Carbone® V23.1	Chair - wood textile	0,775	20	80
Table (no.)	80,2	130	kgCO2e/unit	Base Carbone® V23.1	Table - solid wood	0,68	20	80
Sofa (no.)	182	200	kgCO2e/unit	Base Carbone® V23.1	Sofa - leather	1	20	80
Cabinet (no.)	907	1026	kgCO2e/unit	Base Carbone® V23.1	Cabinet - representative	0,68	20	80
Clothing rack (no.)	6,43	7,48	kgCO2e/unit	Based on Base Carbone® V23.1	"Steel - new" EF; 3.385 kg; average of 3 references	0,42	20	80
Desk / Counter (no.)	80,2	130	kgCO2e/unit	Base Carbone® V23.1	Table - solid wood	0,68	20	80

Armchair (no.)	49,6	56,78	kgCO2e/unit	Base Carbone® V23.1	2x "Chair - wood textile" EF	0,775	20	80
Room divider / folding screen (no.)	12,74	13,81	kgCO2e/unit	Based on Base Carbone® V23.1	EF clothing rack + EF fabric x 2 m² (adapted from 499 to 220 g/m²)	1	20	80
Room divider / folding screen (m²)	6,37	6,90	kgCO2e/m²	Based on Base Carbone® V23.1	EF clothing rack + EF fabric (adapted from 499 to 220 g/m²)	1	20	80

Kitchen-Cooling-Sanitation category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Refrigerator (no.)	257	382	kgCO2e/unit	Base Carbone® V23.1	Refrigerator - combined	1	20	60
Coffee machine (no.)	47,60	52,38	kgCO2e/unit	Base Carbone® V23.1	Coffee machine - espresso	1	20	60
Refrigerated cabinet (no.)	514	764	kgCO2e/unit	Based on Base Carbone® V23.1	2 x "Refrigerator - combined" EF	1	20	60
Dishwasher (no.)	961	1233	kgCO2e/unit	Base Carbone® V23.1	Dishwasher - professional	1	20	60
Oven (no.)	865	1175	kgCO2e/unit	Base Carbone® V23.1	Oven - professional - electric combi steam	1	20	60
Sink (no.)	70,3	81,81	kgCO2e/unit	Based on Base Carbone® V23.1	"Steel or tinplate - new" EF; 37 kg of steel (stainless)	1	30	100
Packaging glass (kg)	0,81	1,306	kgCO2e/kg	Base Carbone® V23.1	Packaging glass (bottle, flask)	0,72	50	200
Water dispenser (no.)	35,8	65,4	kgCO2e/unit	Based on Base	"Average new plastic" EF; weight 20 kg	0,54	30	100

				Carbone® V23.1				
Extractor hood (no.)	60,43	75,98	kgCO2e/unit	Base Carbone® V23.1	Decorative hood - extraction	1	20	60
Microwave (no.)	98,4	118	kgCO2e/unit	Base Carbone® V23.1	Microwave	1	20	60
Kettle (no.)	9,91	10,3	kgCO2e/unit	Base Carbone® V23.1	Kettle	1	20	60
Drying oven / Warming cabinet (no.)	109,98	133,14	kgCO2e/unit	Based on Base Carbone® V23.1	"Furniture - manufacturing" EF; 60 kg	1	20	60
Sanitary unit (no.)	1500,46	1509,23	kgCO2e/unit	I Love SEBACH LCA	Sebach Top San self-contained sanitary unit LCA	1	40	200
Standalone air conditioner (no.)	239	268,6	kgCO2e/unit	Base Carbone® V23.1	Mobile air conditioner	1	20	80

Fabrics category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Needle-punched carpet (m²)	4,60	5,72	kgCO2e/m²	Based on Tarkett LCA	LCA of carpet used in the events industry (adapted from 690 to 300 g/m²)	0,54	2	2
Needle-punched carpet (kg)	15,33	19,08	kgCO2e/kg	Based on Tarkett LCA	EF carpet x 300 g/m²	0,54	2	2
Velvet carpet (>500 g/m²) (m²)	14,10	14,6	kgCO2e/m²	INIES v.4.1.33	Tufted carpet tiles with 100% polyamide velour, velour mass ≤ 750 g/m² (v.1.4)	0,54	2	2
Velvet carpet (>500 g/m²) (kg)	27,64	28,63	kgCO2e/kg	Based on INIES v.4.1.33	Tufted carpet tiles with 100% polyamide velour, velour mass ≤ 750 g/m² (v.1.4) 510g/m²	0,54	2	2
Circular needlepunch carpet (m²)	0,45	0,55	kgCO2e/m²	EPD Rewind Flat	Rewind flat carpet	1	2	2

Circular needlepunch carpet (kg)	1,98	2,41	kgCO2e/kg	Based on EPD Rewind Flat	Rewind flat carpet 230 g/m²	1	2	2
Carpet tile (<500 g/m²) (m²)	3,65	6,16	kgCO2e/m²	Balsan L480 carpet LCA	Balsan L480 carpet	1	2	2
Carpet tile (<500 g/m²) (kg)	7,3	12,32	kgCO2e/kg	Balsan L480 carpet LCA	Balsan L480 carpet 480 g/m²	1	2	2
Tarpaulin (m²)	3,85	3,85	kgCO2e/m²	Based on Higg 2022	Polyester 250 g/m², Polyester fabric, woven	0,5	5	10
Linoleum (m²)	34,38	42,20	kgCO2e/m²	INIES version 4.1.33	Flexible linoleum floor covering - default environmental data (v.1.3)	0,68	2	5
Linoleum (kg)	8,82	10,82	kgCO2e/kg	From INIES version 4.1.33	Grammage 3,900 g/m² (Forbo Marmoleum 3.2 mm)	0,68	2	5
Rubber (m²)	44	53,50	kgCO2e/m²	INIES version 4.1.33	Flexible rubber floor covering - default environmental data (v.1.3)	1	2	5
Rubber (kg)	7,86	9,55	kgCO2e/kg	From INIES version 4.1.33	Grammage 5,600 g/m² (X-Elastic 4 mm)	1	2	5
Curtains (m²)	5,26	5,39	kgCO2e/m²	INIES version 4.1.33	Blackout curtain - default environmental data (v.1.1)	0,87	10	30
Curtains (kg)	22,47	23,03	kgCO2e/kg	From INIES version 4.1.33	Grammage 234 g/m² (average of 4 references)	0,87	10	30
Brushed cotton (m²)	1,14	1,15	kgCO2e/m²	INIES version 4.1.33	Thermal and acoustic insulation for partitions in cotton fiber [R=2.5 m².K/W] - default data (v.1.2)	0,885	2	2
Brushed cotton (kg)	2,02	2,03	kgCO2e/kg	From INIES version 4.1.33	Grammage 567 g/m²	0,885	2	2

Signage category	**EF without end of life**	**EF with the end of life**	**Unit**	**Source**	**EF title and assumptions**	**Weighting >50% recycled materials**	**No. of "unknown" uses**	**No. of rental uses**
Adhesive (m)	0,06713	0,0686	kgCO2e/m	INIES version 4.1.33	Vario® Multitape adhesive (v.1.3)	1	1	2
Adhesive (m²)	Non-shareable basis	Non-shareable basis	kgCO2e/m²	Based on Ecoinvent 3.8	EF ethylvinylacetate, foil - RER; 150 g/m²	1	1	2
Textile (m²)	7,15	7,17	kgCO2e/m²	INIES version 4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,87	1	2

Textile (kg)	14,34	14,37	kgCO2e/kg	Based on INIES version 4.1.33	Grammage 499 g/m² (average of references)	0,87	1	2
PVC (m²)	7,15	7,17	kgCO2e/m²	INIES version 4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,61	1	2
PVC (kg)	14,34	14,37	kgCO2e/kg	Based on INIES version 4.1.33	Grammage 499 g/m² (average of references)	0,61	1	2
PET (m²)	0,54	0,98	kgCO2e/m²	Based on Base Carbone® V23.1	"PET plastic - new" EF; 300 g/m²	0,54	1	2
PET (kg)	1,79	3,27	kgCO2e/kg	Base Carbone® V23.1	PET plastic - new	0,54	1	2
Polyester (m²)	3,425	3,80	kgCO2e/m²	Based on Base Carbone® V23.1	250 g/m²; "Spun polyester fibers" EF	0,54	2	10
Polyester (kg)	13,70	15,18	kgCO2e/kg	Base Carbone® V23.1	Spun polyester fibers	0,54	2	10
Polypropylene (m²)	0,13	0,5	kgCO2e/m²	Based on Base Carbone® V23.1	250 g/m² ; FE « PP »	0,54	2	10
Polypropylene (kg)	0,52	2	kgCO2e/kg	Base Carbone® V23.1	PP - Polypropylene	0,54	2	10
Cardboard (kg)	0,39	1,13	kgCO2e/kg	Base Carbone® V23.1	Cardboard - new	1,36	2	2
Cardboard (m²)	0,39	1,13	kgCO2e/m²	Based on Base Carbone® V23.1	Triple-corrugated cardboard; grammage 1,000 g/m²	1,36	2	2
Plastic (kg)	1,79	3,27	kgCO2e/kg	Base Carbone® V23.1	PET plastic - new	0,54	2	10

Plastic (m²)	7,15	7,17	kgCO2e/m²	INIES version 4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,54	2	10

Print category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Book/Catalogue (kg)	3,67	4,40	kgCO2e/kg	Based on Base Carbone V23.1	From the "300 g book" EF	1,03	2	10
Book/Catalogue (no.)	1,10	1,32	kgCO2e/unit	Base Carbone V23.1	"300 g book" EF	1,03	2	10
Printed poster (kg)	4,40	5,13	kgCO2e/kg	Based on Base Carbone® V23.1	Adaptation of the "printed paper label" EF from 100 to 150 g/m²	1,03	2	2
Printed poster (m²)	0,66	0,77	kgCO2e/m²	Based on Base Carbone® V23.1	Adaptation of the "printed paper label" EF from 100 to 150 g/m²	1,03	2	2
A3 poster (no.)	0,082	0,096	kgCO2e/nb	Based on Base Carbone® V23.1	From the EF in m², based on the surface area of an A3 poster	1,03	2	2
A4 poster (no.)	0,041	0,048	kgCO2e/nb	Based on Base Carbone® V23.1	From the EF in m², based on the surface area of an A4 poster	1,03	2	2
A5 poster (no.)	0,020	0,024	kgCO2e/nb	Based on Base Carbone® V23.1	From the EF in m², based on the surface area of an A5 poster	1,03	2	2

Security category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
CO_2 fire extinguisher (no.)	Non-shareable	Non-shareable	kgCO2e/unit	Based on BC ADEME 23.1	"Steel" EF (5 kg) + 6 kg of liquid CO_2 (carbon dioxide production, liquid -	1	50	250

				and Ecoinvent 3.8	RER - carbon dioxide, liquid - Ecoinvent 3.8)			
Alarm (no.)	14,96	15,10	kgCO2e/unit	INIES version 4.1.33	Fire alarms (types 1, 2a, 2b, 3, 4) - default environmental data (v.1.2)	1	20	60

Plants category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Mixed bouquet - 10 flowers (no.)	28,3	28,33	kgCO2e/unit	Based on Royal Agricultural Society of England 2022	Bouquet of flowers from Kenya, adapted for 10 flowers (formerly "flowers bouquet all sorts")	1	2	5
Local seasonal bouquet - 10 flowers (no.)	2,99	3,04	kgCO2e/unit	Based on Royal Agricultural Society of England 2022	Bouquet of flowers from the United Kingdom (local and seasonal), adapted for 10 flowers	1	2	5
Green plant - 5 kg (no.)	5,00	6,93	kgCO2e/unit	Based on Base Carbone® V23.1	"Potted shrub" EF; 5 kg	1	2	5
Green plant - 15 kg (no.)	15,00	20,79	kgCO2e/unit	Based on Base Carbone® V23.1	"Potted shrub" EF; 15 kg	1	2	5
Green plant - 50 kg / Tree (no.)	50,00	69,30	kgCO2e/unit	Based on Base Carbone® V23.1	"Potted shrub" EF; 50 kg	1	2	5
Green wall (m²)	45	48,86	kgCO2e/m²	Several manufacturers	Average obtained from data from several manufacturers	1	2	5
Planter filling (m²)	22,8	34,38	kgCO2e/m²	Based on Base Carbone® V23.1	"Conventional pelargonium" EF; assumptions: 60 plants/m²	1	2	5
Garden stage (m²)	3,8	5,73	kgCO2e/m²	Based on Base	"Conventional pelargonium" EF; assumption: 10 plants/m²	1	2	5

				Carbone® V23.1				
Soil (kg)	0,63	1,02	kgCO2e/kg	Base Carbone® V23.1	Black horticultural peat - conventional extraction	1	1	2

Reuse / rental

Climeet divides the emissions linked to the manufacture of the object or structure over its lifecycle according to the number of times it is reused. The user can specify for each item whether it is reused, rented or neither.
When the user enters "No" or "Unknown" in the "Reuse" section, all emissions from the manufacture of the object are accounted for.

When the user enters "rental", the tool divides the emissions by a hypothetical number of uses, which varies according to the item. These assumptions are set out in the table below. The number of uses varies between 2 and 250, depending on the object's lifespan. Example: paint has an estimated number of uses of 2, while a chair has an estimated number of uses of 80.

When the user enters "yes", and enters the number of reuses, the element's emissions are divided by the value entered.
If the "Number of reuses" box is left blank, emissions are divided by a hypothetical number of reuses, which varies according to the nature of the item, on the same principle as "rental". All these assumptions are recorded in the table above.

End-of-life integration

In order to have a complete scope of emissions calculation, we distinguish for each item an EF without end-of-life, and an EF with end-of-life. End-of-life emissions take into account emissions generated by the collection of the item and its average end-of-life treatment (incineration, landfill, recycling).
When the user enters "No" or "Unknown" in "Reused?", Climeet uses the EF without end-of-life, as these items will normally be accounted for in the "Waste" section, which will calculate the emissions linked to their end-of-life.
When the user enters "Yes" or "Rental" in "Reused?", Climeet uses the EF with the end-of-life.

The EF with end-of-life is calculated in several ways, depending on the item. Some EFs already include it, such as all those in the INIES database and some in the Base Carbone. Database documentation specifies the scope of each EF and whether or not end-of-life is included.

For EFs not including end-of-life, end-of-life emissions have been calculated from the EFs in the "Waste" section, and the hypothetical weight in kg of each item. Item weights are either specified in database documentation or are estimated from average values of several references. The weight assumptions are recorded in the table above.

From recycled materials

The user can specify for each item whether more than 50% of it is made from recycled materials.
If the user enters "No" or "Unknown", the emission factor remains unchanged.
If "Yes" is entered, the EF is multiplied by a weighting factor. This percentage varies according to the nature of the materials making up the element. They are listed in the table below. For elements not made from the materials listed in the table, the EF remains unchanged in all cases.

Material	Weighting factor	Source	Assumption
Wood	0,68	BEIS 2023	% difference between "Closed loop source" (113 kg CO2/t) and "Primarly material production" (312 kgCO2e/t)
Plastic	0,54	Base Carbone® V23.1	Ratio of "recycled plastic" EF to "new plastic" EF
PVC	0,61	Base Carbone® V23.1	Ratio of "recycled PVC" EF to "new PVC" EF
Steel or tinplate	0,71	Base Carbone® V23.1	Ratio of "recycled steel" EF to "new steel" EF
Aluminium	0,54	Base Carbone® V23.1	Ratio of "recycled aluminium" EF to "new aluminium" EF
Glass	0,72	Base Carbone® V23.1	Ratio of "recycled glass" EF to "new glass" EF
Paper	1,03	Base Carbone® V23.1	Ratio of "recycled paper" EF to "new paper" EF
Cardboard	1,36	Base Carbone® V23.1	Ratio of "recycled cardboard" EF to "new cardboard" EF
Fabric	0,87	Higgs 2022	% difference between "primary polyester (knitted)" and "recycled polyester (knitted)"
Cotton	0,885	Higgs 2023	% difference between "primary cotton (knitted)" and "recycled cotton (knitted)"

Imperial system

The conversion ratios to imperial units are the same for all EFs in the "Equipment and built spaces" category, as shown below:

1	lbs (pounds)	0,454	kg
1	ft (feet)	0,305	m
1	ft² (square feet)	0,093	m²
1	yd² (square yard)	0,836	m²
1	ft3 (cubic feet)	0,028	m3

Here are the various EFs shown above in imperial units:

Stands and structures	EF without end of life	EF with the end of life	Unit
Wood (lbs)	0,02	0,07	kgCO2e/lbs
Wood (ft3)	0,69	2,97	kgCO2e/ft3
Drywall / Plaster (ft²)	0,23	0,28	kgCO2e/ft²
Metal (lbs)	1,99	2,13	kgCO2e/lbs
Green wall (ft²)	4,18	4,54	kgCO2e/ft²
Plywood (ft²)	0,65	1,68	kgCO2e/ft²
Plywood (lbs)	0,49	1,28	kgCO2e/lbs
Plywood (ft)	5,30	13,76	kgCO2e/ft
Medium (ft²)	1,48	3,44	kgCO2e/ft²
Medium (lbs)	0,45	1,04	kgCO2e/lbs
Melamine (ft²)	1,23	2,85	kgCO2e/ft²
Melamine (lbs)	0,44	1,03	kgCO2e/lbs
Melamine (ft)	10,06	23,40	kgCO2e/ft
Glass (lbs)	0,20	0,42	kgCO2e/lbs
Glass (ft²)	1,67	1,69	kgCO2e/ft²

Steel (lbs)	0,86	1,00	kgCO2e/lbs
Steel (ft)	1,45	1,56	kgCO2e/ft
Aluminium (lbs)	3,40	3,54	kgCO2e/lbs
Plastic (lbs)	0,81	1,48	kgCO2e/lbs
Plastic (ft^2)	0,05	0,09	kgCO2e/ft^2
Lighting bridge (ft)	15,98	16,65	kgCO2e/ft
Stage / deck / flooring (ft^2)	15,37	16,18	kgCO2e/ft^2
Layher / scaffolding (lbs)	3,40	3,54	kgCO2e/lbs
Reception tent (ft^2)	4,07	4,38	kgCO2e/ft^2
Marquee (ft^2)	3,03	3,41	kgCO2e/ft^2
Textile (ft^2)	0,665	0,666	kgCO2e/ft^2
Textile (lbs)	6,50	6,52	kgCO2e/lbs
Brushed cotton (ft^2)	0,106	0,107	kgCO2e/ft^2
Brushed cotton (yd^2)	0,956	0,962	kgCO2e/lbs
Brushed cotton (lbs)	0,915	0,920	kgCO2e/yd^2
Cardboard (lbs)	0,177	0,511	kgCO2e/lbs
Cardboard (ft^2)	0,036	0,105	kgCO2e/ft^2

Sound category	**EF without end of life**	**EF with the end of life**	**Unit**
Sound cabling (ft)	0,099	0,140	kgCO2e/ft

Lighting category	**EF without end of life**	**EF with the end of life**	**Unit**
Lighting cabling (ft)	0,347	0,530	kgCO2e/ft
LED strip / flexled	6,10	6,31	kgCO2e/ft

Network & cabling category	EF without end of life	EF with the end of life	Unit
Network cabling (ft)	0,165	0,203	kgCO2e/ft

Power & energy category	EF without end of life	EF with the end of life	Unit
Electrical cabling (ft)	1,16	1,77	kgCO2e/ft
Generator (lbs)	0,83	1,01	kgCO2e/lbs

Fabrics category	EF without end of life	EF with the end of life	Unit
Needlepunch carpet (ft^2)	2,57	2,80	kgCO2e/ft^2
Needlepunch carpet (yd^2)	23,09	25,17	kgCO2e/yd^2
Needlepunch carpet (lbs)	15,52	16,92	kgCO2e/lbs
Velvet carpet >500 g/m^2 (ft^2)	2,19	2,23	kgCO2e/ft^2
Velvet carpet >500 g/m^2 (yd^2)	19,69	20,07	kgCO2e/yd^2
Velvet carpet >500 g/m^2 (lbs)	14,24	14,51	kgCO2e/lbs
Carpet tiles <500 g/m^2 (ft^2)	2,19	2,23	kgCO2e/ft^2
Carpet tiles <500 g/m^2 (yd^2)	19,69	20,07	kgCO2e/yd^2
Carpet tiles <500 g/m^2 (lbs)	14,24	14,51	kgCO2e/lbs
Circular needlepunch carpet (ft^2)	2,57	2,80	kgCO2e/ft^2
Circular needlepunch carpet (yd^2)	23,09	25,17	kgCO2e/yd^2
Circular needlepunch carpet (lbs)	15,52	16,92	kgCO2e/lbs
Linoleum (ft^2)	3,19	3,92	kgCO2e/ft^2
Linoleum (yd^2)	28,75	35,28	kgCO2e/yd^2
Linoleum (lbs)	4,00	4,91	kgCO2e/lbs

Rubber (ft^2)	4,09	4,97	$kgCO2e/ft^2$
Rubber (yd^2)	36,79	44,73	$kgCO2e/yd^2$
Rubber (lbs)	3,56	4,33	kgCO2e/lbs
Curtains (ft^2)	0,49	0,50	$kgCO2e/ft^2$
Curtains (yd^2)	4,40	4,51	$kgCO2e/yd^2$
Curtains (lbs)	10,19	10,45	kgCO2e/lbs
Brushed cotton (ft^2)	0,11	0,11	$kgCO2e/ft^2$
Brushed cotton (yd^2)	0,96	0,96	$kgCO2e/yd^2$
Brushed cotton (lbs)	0,91	0,92	kgCO2e/lbs
Tarpaulin (ft^2)	0,36	0,39	$kgCO2e/ft^2$
Tarpaulin (yd^2)	3,22	3,53	$kgCO2e/yd^2$

Signage category	**EF without end of life**	**EF with the end of life**	**Unit**
Adhesive (ft)	0,006	0,007	kgCO2e/ft
Adhesive (ft^2)	0,036	0,041	$kgCO2e/ft^2$
Textile (lbs)	6,50	6,52	kgCO2e/lbs
Textile (ft^2)	0,665	0,666	$kgCO2e/ft^2$
PVC (lbs)	6,50	6,52	kgCO2e/lbs
PVC (ft^2)	0,665	0,666	$kgCO2e/ft^2$
PET (lbs)	0,812	1,48	kgCO2e/lbs
PET (ft^2)	0,050	0,091	$kgCO2e/ft^2$
Polypropylene (lbs)	0,236	0,907	kgCO2e/lbs
Polypropylene (ft^2)	0,01	0,05	$kgCO2e/ft^2$
Polyester (lbs)	6,21	6,89	kgCO2e/lbs
Polyester (ft^2)	0,318	0,353	$kgCO2e/ft^2$

Cardboard (lbs)	0,177	0,511	kgCO2e/lbs
Cardboard (ft²)	0,036	0,105	kgCO2e/ft²
Plastic (lbs)	0,812	1,48	kgCO2e/lbs
Plastic (ft²)	0,050	0,091	kgCO2e/ft²

Print category	**EF without end of life**	**EF with the end of life**	**Unit**
Printed poster (ft²)	0,06	0,07	kgCO2e/ft²
Printed poster (lbs)	1,99	2,33	kgCO2e/lbs
Book/catalog (lbs)	1,66	2,00	kgCO2e/lbs

Video category	**EF without end of life**	**EF with the end of life**	**Unit**
LED wall (ft²)	35,21	37,44	kgCO2e/ft²

Truss / motor / stage category	**EF without end of life**	**EF with the end of life**	**Unit**
Structure / truss (ft)	34,25	35,68	kgCO2e/ft
Layher / scaffolding (lbs)	3,40	3,54	kgCO2e/lbs
Practicable / stage (ft²)	15,37	16,18	kgCO2e/ft²
Motor (lbs)	1,33	1,47	kgCO2e/lbs
Motor cabling (ft)	0,58	0,88	kgCO2e/ft

Plants category	**EF without end of life**	**EF with the end of life**	**Unit**
Potting soil (lbs)	0,286	0,461	kgCO2e/lbs
Green wall (ft²)	4,18	4,54	kgCO2e/ft²
Planter filling (ft²)	2,12	3,19	kgCO2e/ft²
Garden stage (ft²)	0,35	0,53	kgCO2e/ft²

Kitchen-cooling-sanitation category	EF without end of life	EF with the end of life	Unit
Packaging glass (lbs)	0,37	0,59	kgCO2e/lbs

Consumables category	EF without end of life	EF with the end of life	Unit
Screws and nails (lbs)	0,862	1,00	kgCO2e/lbs
Glue (lbs)	1,402	1,58	kgCO2e/lbs
Paint (lbs)	3,06	3,23	kgCO2e/lbs
Paint (ft^2)	0,289	0,300	kgCO2e/m^2
Cardboard (lbs)	0,177	0,511	kgCO2e/lbs
Cardboard (ft^2)	0,036	0,105	kgCO2e/m^2
Paper (lbs)	0,417	0,75	kgCO2e/lbs
Paper (ft^2)	0,010	0,018	kgCO2e/m^2
Plastic film (lbs)	2,495	3,17	kgCO2e/lbs
Nylon (lbs)	3,461	3,64	kgCO2e/lbs
Cotton (lbs)	7,257	7,43	kgCO2e/lbs
Protective sheeting (ft)	0,106	0,135	kgCO2e/ft
Carbon dioxide / refill (gal)	4,7	5,1	kgCO2e/gal
Gel / scrim (ft)	0,68	0,76	kgCO2e/ft
Adhesive tape (ft)	0,006	0,007	kgCO2e/ft
Fog and haze fluid (gal)	10,2	10,2	kgCO2e/gal
Cleaning product (lbs)	0,195	0,20	kgCO2e/lbs

Monetary data

As a last resort, when information is not available, the user can enter monetary data, which are converted using monetary emission factors from the Base Carbone® of ADEME. The tool uses the most recent monetary EFs dating from 2023.
To take account of the 6.4% inflation between 2023 and 2025, the EF are divided by 1.064.
Base Carbone® EFs do not take end-of-life into account. Monetary EFs with end-of-life are constructed from monetary EFs without end-of-life multiplied by the ratio of EFs with end-of-life to EFs without end-of-life in the Physical section. In the same way as for physical data, the tool uses the EF without end-of-life when the user enters "No" or "Unknown" in "Reused?", and uses the EF with end-of-life if the user enters "Yes" or "Rental".

EFs in kgCO2e/euro are converted into kgCO2e/dollar and kgCO2e/yuan using the OECD Purchasing Power Parity (PPP). PPP is a currency conversion rate that expresses the purchasing power of different currencies in a common unit. This rate expresses the ratio between the quantity of monetary units needed in different countries to purchase the same "basket" of goods and services.

Conversion rate EUR USD =1.459854 USD/EUR Source: https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm 2022 data
Conversion rate EUR YUAN = 5.8234YUAN/EUR Source: https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm 2022 data

In the same way as for the emission factors for physical data, hypothetical reuse numbers are used when the user enters "yes" in the "reuse" section, depending on the materials' lifespan.
For rental items, a different approach is used, as the budget entered by the user already corresponds to a rental item, which is by nature lower than a purchase price, as it already incorporates the number of potential rentals of the object. When we compare purchase versus rental prices for furniture or electronics, we find an average factor of 20, which gives the theoretical number of reuses. However, these types of items have a higher number of reuses than 20, on the order of 80 or even 100. Generally speaking, the cumulative rental price is at least 4 times the purchase price, as rental companies seek to maximize the price difference between purchase and rental. We therefore choose to divide the budget entered under "rental" by 4 to assess the real number of possible reuses for a rental item.

Stands and structures	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	No. of reuses if "yes"	"Rental" factor
Mostly Wood	0,19	0,83	kgCO2e/euro	Based on Base Carbone® V23.1	Wood, cork (excluding furniture) / Basketry, wickerwork - 2023	3	4
Mostly Metal	0,30	0,32	kgCO2e/euro	Based on Base Carbone® V23.1	Metal products, excluding machinery and equipment - 2023	10	4
Mostly Plastic	0,29	0,54	kgCO2e/euro	Based on Base Carbone® V23.1	Products - Plastics and rubber 2023	3	4
Unknown	0,26	0,56	kgCO2e/euro	Based on Base Carbone® V23.1	Average of the other EFs	3	4

Stands and structures	EF without end of life	EF with the end of life	Unit	EF without end of life	EF with the end of life	Unit
Mostly Wood	0,13	0,57	kgCO2e/dollar	0,03	0,14	kgCO2e/yuan
Mostly Metal	0,20	0,22	kgCO2e/dollar	0,05	0,05	kgCO2e/yuan
Mostly Plastic	0,20	0,37	kgCO2e/dollar	0,05	0,09	kgCO2e/yuan
Unknown	0,18	0,39	kgCO2e/dollar	0,04	0,10	kgCO2e/yuan

Equipment	EF without end of life	EF with the end of life	Unit	Source	Assumption	EFs used in the end-of-life ratio	No. of reuses if "yes"	Rental factor
Furniture	0,22	0,25	kgCO2e/euro	Based on Base Carbone® V23.1	Furniture - 2023	EFs of the "Furniture" category	10	4

Electricity / Sound / Lighting / computer software	0,20	0,22	kgCO2e/euro	Based on Base Carbone® V23.1	IT, electronic and optical products - 2023	EFs of the "Electricity/sound" and "Video" categories	20	4
Decorations	0,23	0,27	kgCO2e/euro	Based on Base Carbone® V23.1	Average of "Products - Plastics and rubber" and "Wood, cork (excluding wood)"	EF "plastic", "rubber", "brushed cotton", "curtains", "textile"	3	4
Signage	0,29	0,3	kgCO2e/euro	Based on Base Carbone® V23.1	Service - Plastics and rubber (for vinyl, for example)	EFs of the "Signage" category	3	4
Carpet	1,07	1,1	kgCO2e/euro	Based on INIES v.4.1.33	Flexible textile floor covering - default environmental data (v.1.2)" (emissions linked to production + installation) (kgCO2e/m²) Assumption: price per m²: 25 euros Source: Prix Pose	"Needlepunch carpet" and "velour carpet" EFs	2	4
Paper	0,30	0,5	kgCO2e/euro	Based on Base Carbone® V23.1	Paper and cardboard - 2023	"Paper" EF	2	4

Equipment	**EF without end of life**	**EF with the end of life**	**Unit**	**EF without end of life**	**EF with the end of life**	**Unit**
Furniture	0,15	0,17	kgCO2e/dollar	0,04	0,04	kgCO2e/yuan
Electricity / Sound / Lighting / computer software	0,14	0,15	kgCO2e/dollar	0,03	0,04	kgCO2e/yuan
Decorations	0,16	0,18	kgCO2e/dollar	0,04	0,05	kgCO2e/yuan

Signage	0,20	0,22	kgCO2e/dollar	0,05	0,06	kgCO2e/yuan
Carpet	0,73	0,78	kgCO2e/dollar	0,18	0,20	kgCO2e/yuan
Paper	0,21	0,37	kgCO2e/dollar	0,05	0,09	kgCO2e/yuan

Data specific to Climeet Space Designers

In the parameters of a space's catalog, the user can specify the percentage of recycled materials used in the space. In the same way as for Climeet Organizer, the emission factors are weighted by a certain factor, depending on the material. These weighting percentages are recorded in the table above.

In a conservative approach, the EFs used in Climeet Space Designers are those with end-of-life.

Please note: the EF units of the Caterer and Space Designer modules are not customizable and are in the metric system. These EFs will be incorporated into the Organizer module in the next update.

Some materials or equipment are only present in the Climeet Space Designers catalog, and are listed below:

Upholstery category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Other floor covering (m²)	44,00	53,50	kgCO2e/m²	INIES v.4.1.33	Flexible rubber floor covering - default environmental data (v.1.3)	1	2	5

Velum (m²) - PVC fabric	7,15	7,17	kgCO2e/m²	INIES v.4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,61	2	6
Velum (m²) - acrylic fabric	3,73	3,83	kgCO2e/m²	Based on Higg 2021	Average calculated from 3 types of desks in the FIRA benchmark (2011)	0,54	2	6

Furniture category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Seat (no.)	24,8	28,3898	kgCO2e/unit	Base Carbone V23.1	Chair - wood textile	0,775	20	80
Buffet (non-wood) (no.)	128,1	155,12	kgCO2e/unit	Based on Base Carbone® V23.1	"Furniture - manufacturing " EF (kgCO2e/kg) Assumption: 70 kg	1	20	80
Wooden buffet (no.)	48	56,54	kgCO2e/unit	Fira 2011	Average calculated from 3 types of desks in the FIRA benchmark (2011)	0,68	20	80
Display stand (no.)	80,2	130	kgCO2e/unit	Base Carbone® V23.1	Table - solid wood With end of life	0,68	20	80

Signage category	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses	No. of rental uses
Fabric (m²)	7,15	7,17	kgCO2e/m²	INIES v.4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,87	1	2
Backlit fabric (m²)	7,15	7,17	kgCO2e/m²	INIES v.4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,87	1	2

Data specific to Climeet Caterer

Some equipment or objects are only present in Climeet Caterer, in the "Equipment and built spaces" section of the Service tab. The calculation is carried out in the same way as in Climeet Organizer for end-of-life and EF weighting if >50% recycled materials.
In Climeet Caterer, the user can only choose between "Yes", "No" or "Unknown" in "Reused?" because, following feedback from caterer users, they own all the items and the "Rental" option is not applicable.

Category tableware	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses
Cotton napkin (no.)	0,12	0,17	kgCO2e/unit	Based on Higgs 2021	Cotton fabric, knitted - assumption: 140g/m² and 30x30cm	0,885	5
Paper napkin (no.)	0,0028	0,0050	kgCO2e/unit	Base Carbone V23.1	Paper - Average - Excluding use and end of life - assumption: 3g	1,03	0
Fabric tablecloth (cotton) (m²)	2,33	2,42	kgCO2e/m²	Higg 2021	Cotton fabric, knitted - assumption: 250 g/m²	0,87	5
Polyester tablecloth (m²)	10,10	10,47	kgCO2e/m²	Higg 2021	Polyester fabric, knitted - assumption: 250 g/m²	0,54	5
Paper tablecloths (m²)	0,04	0,07	kgCO2e/m²	Base Carbone V23.1	Paper - Average - Excluding use and end of life and density of 45 g/m²	1,03	0
Polyester felt (m²)	4,16	4,56	kgCO2e/m²	Based on Higgs 2022	270g/m² polyester - Polyester fabric, woven	0,54	5
Durable tableware (no.)	Non-shareable basis	Non-shareable basis	kgCO2e/unit	EcoInvent 3.8	Ceramic tile production - RoW - ceramic tile - assumption: 200g	1	100
Cardboard tableware (no.)	0,0039	0,0113	kgCO2e/unit	Base Carbone V23.1	New cardboard - assumption: 10g per plate	1,36	0
Plastic tableware (no.)	0,05	0,12	kgCO2e/unit	Base Carbone V23.1	Plastic - PET - new - assumption: 50g	0,54	0
Durable cutlery (no.)	0,73	0,79	kgCO2e/unit	Base Carbone V23.1	Average of the steel and aluminium EFs - assumption: 180g	1	100
Wooden cutlery (no.)	0,0004	0,0016	kgCO2e/unit	Base Carbone V23.1	Short-life wood (furniture...) - manufacturing - assumption: 10g per plate	0,68	0
Plastic cutlery (no.)	0,01	0,02	kgCO2e/unit	Base Carbone V23.1	Plastic - PET - new - assumption: 10g	0,54	0
Tape (roll)	0,27	0,43	kgCO2e/unit	Base Carbone V23.1	"Plastic - average" EF - Assumption: 0.111 kg per roll	1	0

Returnable glass (25cl)	0,04	0,09	kgCO2e/unit	DEFRA	EF calculated from the returnable glass EF (50 cl)	0,54	
Returnable glass (33cl)	0,05	0,13	kgCO2e/unit	DEFRA	EF calculated from the returnable glass EF (50 cl)	0,54	
Returnable glass (50cl)	0,07	0,19	kgCO2e/unit	DEFRA	EF returnable = EF glass / 2 Container type: Glass - new "A 2010 ADEME study also recognizes the climate benefits of this practice: "Returnable glass is thus [in hotels, restaurants and cafes, ed. note] on average 50% less impactful for the "greenhouse effect" indicator" Source: Zero Waste France Container weight: wine bottle with neck Source: Flaconste	0,54	

Category furniture	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses
Steel seat (no.)	90,2	93,4	kgCO2e/unit	Base Carbone V23.1	"Chair - plastic" EF multiplied by the average EF of "steel" and "aluminium" and divided by the "plastic" EF (Base Carbone® V23.1)	0,71	80
Plastic seat (no.)	34,4	42,836	kgCO2e/unit	Base Carbone V23.1	Chair - plastic	0,54	80
Wooden seat (no.)	18,6	19,7712	kgCO2e/unit	Base Carbone V23.1	Chair/wood	0,68	80
Plastic table (no.)	26,85	56,45	kgCO2e/unit	Based on Base Carbone V23.1	"Plastic - PET - new" EF (kgCO2e/kg) assumption: 15 kg	0,54	80
Wooden table (no.)	80,2	130	kgCO2e/unit	Base Carbone V23.1	Table - solid wood	0,68	80
Steel table (no.)	95	104,33	kgCO2e/unit	Base Carbone V23.1	"Steel or tinplate - new" EF (kgCO2e/kg) assumption: 50 kg	0,71	80
Two-seater sofa (no.)	182	200	kgCO2e/unit	Base Carbone V23.1	Sofa - leather	1	80
Barbecue (no.)	79,45	95	kgCO2e/unit	Based on Base Carbone V23.1	"Steel - tinplate - new" EF, assumption: 50 kg	0,71	60
Buffet (non-wood) (no.)	128,1	155,12	kgCO2e/unit	Based on Base Carbone V23.1	"Furniture - manufacturing " EF (kgCO2e/kg) assumption: 70kg	1	80
Buffet (no.)	48	56,54	kgCO2e/unit	Fira 2011	Average calculated from 3 types of desks in the FIRA benchmark (2011)	0,68	80

Category decoration	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses
Fabric (m^2)	7,15	7,17	$kgCO2e/m^2$	INIES v.4.1.33	PVC fabric for blinds - default environmental data (v.1.4)	0,87	2

Category Electrical equipment	EF without end of life	EF with the end of life	Unit	Source	EF title and assumptions	Weighting >50% recycled materials	No. of "unknown" uses
Induction hobs (no.)	89,70	109,70	kgCO2e/unit	Base Carbone® V23.1	Induction hobs 9000W	1	60
Gas hobs (no.)	43,42	46,53	kgCO2e/unit	Base Carbone® V23.1	Gas hobs 9000W	1	60
Ceramic hobs (no.)	65,31	85,31	kgCO2e/unit	Base Carbone® V23.1	Ceramic hobs 9000W	1	60

Energy & Water

Known consumption

The user can enter the exact energy and water consumption of the event site, if known. They can enter fuel quantities for generators, according to fuel type. They can also enter the exact consumption by type of energy (electricity, gas, fuel oil, wood, etc.) and of water. If the type of energy is not known, the user has the option of entering "unknown". The EF used is then an average of the EFs for gas and fuel oil.

Fuel

Fuel type	EF	Unit	Source	EF title
Petrol (liters)	2,70	kgCO2e/litre	Base Carbone V23.1	Gasoline - Unleaded premium fuel (95, 95-E10, 98)
Diesel (liters)	3,10	kgCO2e/litre	Base Carbone V23.1	Road diesel - B7
Used cooking oil (liters)	0,54	kgCO2e/litre	Base Carbone V23.1	HVO 100 - based on used edible oils (HAU) - no change in land use
Green hydrogen (kg)	1,14	kgCO2e/kg	Green Deal, NL 2023	Hydrogen green
Gray hydrogen (kg)	12,52	kgCO2e/kg	Green Deal, NL 2023	Hydrogen gray

In imperial system

The metric system EFs are converted to the imperial system using the following conversion ratio:

1	gal (gallon)	3,785	liter

Fuel type	EF	Unit	Source	EF title
Petrol (gal)	10,2	kgCO2e/gal	Based on Base Carbone V23.1	Gasoline - Unleaded premium fuel (95, 95-E10, 98)
Diesel (gal)	11,7	kgCO2e/gal	Based on Base Carbone V23.1	Road diesel - B7
Used cooking oil (gal)	2,1	kgCO2e/gal	Based on Base Carbone V23.1	HVO 100 - based on used edible oils (HAU) - no change in land use

The international unit for hydrogen is kg, whatever the system used (metric or imperial).

Other consumption

Consumption type	EF	Unit	Source	EF title
Electricity (kWh)	Depends on the country of the event	kgCO2e/kWh	IEA 2022	CO2 intensity of the country's electricity mix (upstream and direct emissions included)
Renewable electricity produced on site (kWh)	0,044	kgCO2e/kWh	Base Carbone V23.1	Electricity/photovoltaic/Manufactured in China (Default used in France)
Gas (kWh)	0,21	kgCO2e/kWh	BEIS 2023	Natural gas (Gross CV)
Gas (liters)	1,81	kgCO2e/litre	Base Carbone V23.1	Propane/including maritime - Europe
Gas (m3)	2,35	kgCO2e/m3	Based on BEIS 2023	Assumption: 11.2 kWh/m3 of gas Source: Hellowatt
Fuel oil (kWh)	0,33	kgCO2e/kWh	BEIS 2023	Fuel oil (Gross CV)
Fuel oil (liters)	3,3	kgCO2e/litre	Based on BEIS 2023	Assumption: 10 kWh/liter of fuel oil
Wood (kWh)	Non-shareable basis	kgCO2e/kWh	Ecoinvent 3.8	heat production, mixed logs, at wood heater 6kW - RoW - heat, central or small-scale, other than natural gas
Wood (m3)	Non-shareable basis	kgCO2e/m3	Based on Ecoinvent 3.8	Assumption: 1,500 kWh/m3 of wood Source: conseils-thermiques.org Ecoinvent EF
Wood (kg)	2,35	kgCO2e/kg	Base Carbone V23.1	Wood logs/20% humidity
Wood chips (kWh)	0,002	kgCO2e/kWh	BEIS 2023	Wood logs
Wood chips (kg)	0,06	kgCO2e/kg	Based on BEIS 2023	Assumption: 3 kWh/kg of wood chips Source: conseils-thermiques.org "Wood logs" EF from BEIS
Unknown (kWh)	0,27	kgCO2e/kWh	Based on BEIS 2023	Average of the "gas" and "fuel oil" EFs in a conservative approach
Water (m^3)	0,394	kgCO2e/m^3	Based on BC ADEME 23.1	EF mains water + wastewater treatment
Water (liter)	0,000394	kgCO2e/litre	Based on BC ADEME 23.1	EF mains water + wastewater treatment

Data specific to Climeet Space Designer

Energy consumption at event sites

The user can specify whether permanent or intermittent electrical boxes were used. For permanent boxes, energy consumption is estimated by multiplying the power (W) by the time of use (hours). For intermittent boxes, the same formula is used, dividing the time of use by 2.

Data specific to Climeet Caterer

Energy consumption at event sites

Wood/charcoal (kg)	2,35	kgCO2e/kg	Base Carbone V23.1	Wood logs/20% humidity

Energy consumption in the production phase

The user can enter the annual energy consumption in kWh and specify the type of energy. Then, using the service revenue entered in the service parameters, and the annual revenue entered in the general parameters, Climeet calculates a consumption prorata to be attributed to the service. The EFs used are the same as in Climeet Organizer.

The user can also enter the annual water consumption in liters.

Annual water consumption (liters)	0,000132	kgCO2e/litres	BC ADEME 23.1	Mains water - excluding infrastructure

In the same way as for energy consumption, a water consumption prorata is calculated from the annual revenue and the service revenue, and is converted into kgCO2e using the EF above.

Unknown consumption

If the user doesn't know the exact energy consumption of his event, Climeet can be used to estimate energy consumption based on the surface area occupied by the event, the energy class of the building, the number of days booked for the event, and the use of heating or air conditioning.

The final EF used is the sum of 3 EFs:

- the first EF for specific electricity consumption. The EF used is that of the carbon intensity of the electricity mix of the country hosting the event. The user can specify the percentage of renewable electricity generated on site, which weights the electricity EF as follows:
% of electricity generated on site x EF of renewable electricity + (1-% renewable) x EF electricity mix of the country hosting the event

- the second EF for heating. The user can specify whether heating was used, and if so, the type of heating (heat pump, electric, gas, oil, wood, etc.). Depending on the season of the event entered by the user in the general event parameters, the heating EF is weighted as specified in the table below.

- the third EF for air conditioning, where the user can specify whether it was used or not. The EF is also weighted according to the season entered.

Estimated total energy consumption for the event

From the ranges of annual energy consumption by building energy class, we obtain an average consumption value in kWh/m² per year. We then report this consumption per day, assuming it is spread over 230 days.

Energy class	Your home's energy consumption per year	Meaning of energy class	kWh/m² assumption	Assumption kWh/m²/day (consumption spread over 230 days)
A	0 to 50 kWh/m²	Best-performing homes (often new, rare in renovation)	30	0,13
B	51 to 90 kWh/m²	Low-energy housing	70	0,30
C	91 to 150 kWh/m²	Standard gas-heated homes	120	0,52
D	151 to 230 kWh/m²	Standard electrically heated homes	200	0,87
E	231 to 330 kWh/m²	Older homes heated by electricity (before the 1979 oil crisis)	300	1,30
F	331 to 450 kWh/m²	Older homes built between 1948 and 1975	400	1,74
G	451 kWh/m² and above	Older, very energy-intensive homes	550	2,39
Unknown	Average of 250 kWh/m² per year	Source: Habitat Presto	250	1,09
	Table source: EDF			

By multiplying by the surface area in m² and the number of days booked, and according to the energy letter entered by the user, we obtain the energy consumption of the event in kWh. This energy consumption is broken down between use for specific electricity, heating and air conditioning. This breakdown is based on the following data:

Breakdown of energy consumption by use in commercial buildings - France - 2020			
Use	Total TWH	kWh/m²	Share
Heating	87,5	89,0	42%
Domestic hot water	22,1	22,5	11%
Cooking	10,8	11,0	5%
Specific electricity	56,9	57,8	27%
Air conditioning	21,5	21,9	10%
Other uses	10,4	10,6	5%
Total *excluding other uses*	198,9	202,2	95%
Total	209,3	212,8	100%
Source: Ministère de la transition écologique et de la cohésion des territoires - Ceren			

Based on this breakdown by use, we then estimate the percentage of energy consumption corresponding to electricity, heating and air conditioning.

Category	Share of total energy consumption	Assumption based on the breakdown-by-use table	Source
Electricity	29%	"Specific electricity" (scaled to 100% based on the total excluding other uses)	Ministère de la transition écologique et de la cohésion des territoires
Heating	61%	Sum of the uses "heating" + "domestic hot water" + "cooking" (scaled to 100% based on the total excluding other uses)	Ministère de la transition écologique et de la cohésion des territoires
Air conditioning	11%	"Air conditioning" (scaled to 100% based on the total excluding other uses)	Ministère de la transition écologique et de la cohésion des territoires

EF specific electricity

Specific electricity consumption corresponds to 29% of the total energy consumption estimated in the first part. The EFs used are that of the electricity mix of the country hosting the event, and depending on the case, that of the renewable electricity produced on site.

EF heating

The energy consumption allocated to heating corresponds to 61% of the total energy consumption estimated in the first part.
The heating EF varies according to the type of heating entered by the user.

Type of heating	EF	Unit	Source	EF title
No heating	0,00	kgCO2e/kWh		
Heat pump	EF adapted according to country	kgCO2e/kWh	Based on Ecoinvent 3.8	From the EF "heat production, air-water heat pump 10kW - Europe without Switzerland - heat, air-water heat pump 10kW"*
Electric heating	Depends on the country of the event	kgCO2e/kWh	IEA 2022	CO2 intensity of the country's electricity mix
Gas	0,21	kgCO2e/kWh	BEIS 2023	Natural gas (Gross CV)
Fuel oil	0,33	kgCO2e/kWh	BEIS 2023	Fuel oil (Gross CV)
Wood	Non-shareable basis	kgCO2e/kWh	Ecoinvent 3.8	heat production, mixed logs, at wood heater 6kW - RoW - heat, central or small-scale, other than natural gas
Wood chips	0,02	kgCO2e/kWh	BEIS 2023	Wood logs
Unknown	0,27	kgCO2e/kWh	Based on BEIS 2023	Average of the "gas" and "fuel oil" EFs in a conservative approach

*The "heat pump" EF is adapted according to the event country entered in the event parameters. The "heat pump" EF is therefore calculated as follows:
EF "heat pump" * (EF electricity country / EF average electricity Europe excluding Switzerland)

If the user enters "electric heating" or "heat pump" as the heating mode, the electricity EF used will also be weighted according to the percentage of renewable energy produced on site. This weighting only applies to these two heating modes, as they are the only ones to use electricity.

The EF is also weighted according to the season of the event, based on internal assumptions.

	Heating "Season" factor	Air conditioning "Season" factor
Winter	2	0,25
Spring	1	1
Summer	0,25	2
Autumn	1	1

EF air conditioning

The user can specify whether air conditioning was used during the event. Air-conditioning consumption in kWh corresponds to 11% of total energy consumption.
In the same way as for specific electricity consumption and electric heating, the electricity EF used is weighted according to the percentage of renewable energy produced on site, using the following formula: % electricity produced on-site x EF renewable electricity + (1-% renewable) x EF electricity mix of the country hosting the event
Air-conditioning emissions are also weighted according to the seasonality of the event.

For air-conditioning, we also need to take into account the loss of refrigerants associated with the use of air-conditioning equipment. For this, we have based ourselves on the advice of the Plan General Carbone, which estimates an average cooling capacity of around 100W/m². According to Base Carbone®resources, the quantity of refrigerant as a function of cooling capacity is 0.3 kg/kW, and the annual leakage rate is 10%. This gives an annual refrigerant loss of 0.003 kg/m².year. This value is expressed per day, divided by 230, the estimated number of days worked per year.

This quantity of refrigerant lost is then multiplied by the m² surface area of the hall and the number of days booked, to give the quantity lost over the entire event. This quantity is then converted into CO2e equivalent using the emission factor for R410a, the refrigerant gas most commonly used in commercial air-conditioning systems.
EF R410a = 1920 kgCO2e/kg

EF unknown water

To this estimated energy consumption, an approximate water consumption is added, based on the various fields filled in by the user.

To estimate the event's water consumption, it is divided into 2 sub-categories: sanitary water, used in the toilets, and water used for cleaning the venue.
As it is more common for a caterer to take the dirty dishes back to their premises, the water used for washing up is not included in the calculation. Finally, drinking water is already estimated in the Drinks section of the calculator, whether bottled or tap water.

Unknown water consumption formula

Unknown water consumption = Sanitary consumption x no. of participants x no. of days + Cleaning consumption x surface area (m²) x no. of days

Assumptions:
Sanitary consumption = 15 L/pers.day
(3 visits per person per day, 1 visit = 5L (toilet + hand washing)
Cleaning consumption = 0.5 L/m².day.

The estimated unknown water consumption is then converted into kgCO2e using the water EF in kgCO2e/liter.
These emissions are added to the total emissions linked to energy consumption.

Imperial system

The user can also enter the surface area occupied by the event in ft². This area is then converted into m² and used in the calculation as explained above.

Conversion ft² to m²	1	ft²	0,093	m²

Additional equipment

The user also has the option of entering additional equipment used during the event (e.g. electrical boxes), to complete the average energy consumption estimated in the first part.
Equipment consumption in kWh is estimated from the wattage and number of hours of use entered by the user.
Power can be expressed in W, kVA or BTU/h for the imperial system.
Power ratings expressed in kVA or BTU/h are converted back into W, then transformed into kWh based on the number of hours.
The EF varies according to the type of energy used by the equipment. These are the same EFs presented above.

Conversion kVA to W	1	kVA	1000	W
Conversion BTU/h to W	1	BTU/h	0,000293	W

Catering

Meals

The carbon impact of a meal is broken down into the impact of the menu and the impact of the cutlery.

The user can enter the type of meal (coffee break, breakfast, cocktail or meal/buffet) as well as the composition of the meal (red meat, poultry or pork, vegetarian, fish, etc.). The composition of the meal will influence the quantity served per person, which is why we group sit-down meals together with buffets, and separate cocktails where the quantities served are smaller.

The EF of the menu depends mainly on the composition of the meal, and is weighted according to the type of meal, in relation to the quantities served, and the seasonality of the products.

The EF of cutlery depends on the cutlery's materials, and whether it is single-use or reusable.

Meal/buffet

Meal/buffet	EF	Unit	Source	EF title / Assumption
Classic/Unknown	2,04	kgCO2e/meal	BC ADEME 23.1	Meal - average
Mainly Red meat	6,29	kgCO2e/meal	BC ADEME 23.1	Meal - classic (with beef)
Vegetarian	0,51	kgCO2e/meal	BC ADEME 23.1	Meal - vegetarian
Mainly Poultry or pork	1,35	kgCO2e/meal	BC ADEME 23.1	Meal - classic (with chicken)
Mainly fish	1,50	kgCO2e/meal	Based on BC ADEME 23.1	Based on the poultry meal, replacing poultry with fish
Vegan	0,29	kgCO2e/meal	Based on BC ADEME 23.1	Based on the vegetarian meal, replacing eggs with vegetables

Snack, breakfast and cocktail breaks

The EFs for breakfast, cocktails and snack breaks are based on the EFs for meals/buffets, on the assumption that the quantities served are reduced.

It was decided that a snack break corresponded to 10% of a full meal in quantity, breakfast to 40% of a full meal, and a cocktail to 60% of a full meal.

The snack-break EF includes only the food served during the break, and not the drinks, which are recorded under "Drinks". There is no snack-break EF for the "mainly red meat", "mainly poultry" and "mainly fish" types.

EF snack break = 10% x EF full meal

EF breakfast = 40% x EF full meal

EF cocktail = 60% x EF full meal

Meal composition	Snack break	Breakfast	Cocktail	Unit	Source
Classic/unknown	0,20	0,82	1,22	kgCO2e/meal	Based on Base Carbone V23.1

Mainly red meat	NA	2,52	3,77	kgCO2e/meal	Based on Base Carbone V23.1
Vegetarian	0,05	0,20	0,31	kgCO2e/meal	Based on Base Carbone V23.1
Mainly poultry or pork	NA	0,54	0,81	kgCO2e/meal	Based on Base Carbone V23.1
Mainly fish	NA	0,60	0,90	kgCO2e/meal	Based on Base Carbone V23.1
Vegan	0,03	0,11	0,17	kgCO2e/meal	Based on Base Carbone V23.1

Seasonal products

The menu EF is weighted according to product seasonality. The user can enter the percentage of seasonal products (0%, 25%, 50%, 75% or 100%) or "Unknown" if no information is available.

According to the Agribalyse 3.1.1 data analysis, a seasonal product has an impact of around 40% of its out-of-season equivalent.

	Raw tomato	Raw strawberry	Total
In season (kgCO2e/kg)	0,51	0,47	0,98
Out of season (kgCO2e/kg)	1,88	0,67	2,55

Several assumptions were then made:

- The EF used correspond to meals with 50% seasonal vegetables
- Vegetables account for 5% of the total impact of a classic meal

We then obtain the following menu EF weighting, taking 50% seasonal products as the basic reference. When the user enters "unknown", a conservative approach is taken, with a menu EF increased by 2%.

0% seasonal products	+2%
25% seasonal products	+1%
50% seasonal products	0%
75% seasonal products	-1%
100% seasonal products	-2%
Unknown	2%

Tableware and cutlery

The EFs for tableware and cutlery are calculated from the EF of the cutlery material and the hypothetical weight of cutlery for a meal, which is 200g.

Tableware and cutlery	Cutlery weight (kg/meal)	EF materials kgCO2e/kg	EF cutlery kgCO2e/meal	Source	Assumption
Recycled cardboard	0,2	0,67	0,13	Base Carbone V23.1	Recycled cardboard - 200g of cutlery per meal
Cardboard	0,2	0,39	0,08	Base Carbone V23.1	New cardboard - 200g of cutlery per meal
Plastic	0,2	3,27	0,65	Base Carbone V23.1	New PET plastic - 200g of cutlery per meal
Wood	0,2	0,04	0,01	Base Carbone V23.1	Short-life wood (furniture…) - manufacturing - 200g of cutlery per meal
Reusable (stainless steel type)	0,5	0,00	0,00		Assumption: the cutlery is reused a very large number of times Production-related emissions are negligible
Unknown	0,2	0,39	0,08	Base Carbone V23.1	Conservative assumption: New cardboard - 200g of cutlery per meal

Drinks

The carbon impact of beverages is broken down into the impact of beverage production and the impact of the containers (purchase container and drinking container).
The EF of the beverage depends on the type of beverage according to the following categories.

The impact of the packaging has been removed from the beverage EFs, according to information provided by Agribalyse.
Example: for bottled water, with packaging accounting for 69.5% of the total EF, we have:
EF water without packaging = EF water total - 69.5% x EF water total

The user can enter beverage quantities in liters, fluid oz. or number of bottles for certain beverages. The reference unit is the liter.

Conversion fl oz to liters	1	fl oz	0,03	liter

Liters per bottle of water/juice/soda	1	Liter/bottle
Liters per bottle of wine/spirits	0,75	Liter/bottle

EF Beverages

Type of beverage	EF Agribalyse (beverage + packaging)	EF beverage Climeet	Unit	Source	EF title / assumption
Water	0,45	0,14	kgCO2e/litre	Based on Agribalyse 3.1.1	Bottled spring water - 69.5% of the impact is due to packaging
Coffee	0,59	0,59	kgCO2e/litre	Agribalyse 3.1.1	Espresso coffee, non-instant, unsweetened, ready to drink
Tea	0,05	0,05	kgCO2e/litre	Agribalyse 3.1.1	Brewed tea, unsweetened
Juice	0,8	0,72	kgCO2e/litre	Based on Agribalyse 3.1.1	Multifruit juice - orange base, multivitamin - 10% of the impact is due to packaging
Soda	0,57	0,43	kgCO2e/litre	Based on Agribalyse 3.1.1	Cola, sweetened (same value for "Carbonated drink, no fruit juice, sweetened" or "Tonic or bitter, sweetened") - 25.1% of the impact is due to packaging
Beer/Cider	1,09	0,64	kgCO2e/litre	Based on Agribalyse 3.1.1	"Market standard" beer (4-5° alcohol) - 41.7% of the impact is due to packaging
Wine	1,14	0,82	kgCO2e/litre	Based on Agribalyse 3.1.1	Dry white wine 11° (same value for "Sparkling white wine") - 27.8% of the impact is due to packaging
Strong alcohol	1,16	0,67	kgCO2e/litre	Based on Agribalyse 3.1.1	Pure alcohol (same value for "Vodka", "Whisky", "Rum", "Gin") - 42% of the impact is due to packaging

Type of beverage	EF beverage Climeet (fl oz)	Unit	EF beverage Climeet (number of bottles	Unit
Water	0,004	kgCO2e/fl oz	0,14	kgCO2e/bottle
Coffee	0,017	kgCO2e/fl oz		kgCO2e/bottle
Tea	0,001	kgCO2e/fl oz		kgCO2e/bottle
Juice	0,021	kgCO2e/fl oz	0,72	kgCO2e/bottle
Soda	0,013	kgCO2e/fl oz	0,43	kgCO2e/bottle
Beer/Cider	0,019	kgCO2e/fl oz		kgCO2e/bottle
Wine	0,024	kgCO2e/fl oz	0,62	kgCO2e/bottle
Strong alcohol	0,020	kgCO2e/fl oz	0,50	kgCO2e/bottle

EF Containers

The EFs for beverage purchase containers are calculated from the EFs for materials and the weight of a single standard container.
Container EFs include end-of-life emissions. It is therefore not necessary to enter the quantities of empty containers in the "Waste" section.

Purchase container (depends on the type of beverage selected)

Type of purchase container	EF Climeet (kgCO2e/liter)	EF material (kgCO2e/kg)	Source	Container weight (kg/liter)	EF title Assumption
Glass bottle	0,52	0,93	BC ADEME 23.1	0,564	Glass - new Assumption: weight of a wine bottle with neck Source: Verreries talançonnaises
Plastic bottle	0,10	3,27	BC ADEME 23.1	0,032	Plastic - PET - new Assumption: weight of a 1L PET bottle Source: Fidel Fillaud
Tetrapak cardboard	0,03		Tetrapak LCA		Tetra Gemina® Aseptic 1000 Square - Volume: 1000 ml - Opening: HeliCap™ 27
Metal can	0,24	5,99	Based on BC ADEME 23.1	0,040	50% aluminium - new and 50% recycled aluminium (according to Lumni enseignement, on average cans contain 50% recycled aluminium) Assumption: weight of a 375mL aluminium can
Returnable glass bottle	0,26		Based on BC ADEME 23.1		EF returnable glass = EF glass/2 According to an ADEME study, returnable glass is on average 50% less impactful for the "greenhouse effect" indicator Source: Zerowaste
Reused container	0				Assumption of 0 due to a large number of reuses
Returnable metal keg	0				Assumption of 0 due to a large number of reuses
Plastic keg (beer/cider)	0,15696	3,27	Based on Base Carbone® V23.1	0,048	20 L PET keg (Source: KeyKeg technical specification)
Bag-in-box (wine)	0,0325	0,39	Based on Base Carbone® V23.1	0,08333	3 L bag-in-box: 250 g (50 g plastic + 200 g cardboard) "PET plastic" EF and "cardboard" EF
Aluminium capsule (coffee)	0,1014	7,8	Based on Base Carbone® V23.1	0,013	Aluminium EF Empty weight: 0.52 g for 40 ml of coffee
Doypack pouch (coffee and tea)	0,009	2	Based on Base Carbone® V23.1	0,0045	Polypropylene EF; Empty weight = 18 g for 500 g of coffee
Kraft bag (coffee and tea)	0,0027	0,45	Based on Base Carbone® V23.1	0,006	Softwood kraft paper EF; Empty weight = 12g for 250 g of coffee

Canvas bag (coffee and tea)	0,0006213	0,57	Jute & allied fibre production LCA (ICAR)	0,00109	According to an ICAR study: 600 g bag carrying 69 kg of coffee
Bulk (coffee and tea)	0	0		0	Large number of reuses - EF = 0
Individual bag (tea)	0,01707	1,66	Based on Base Carbone® V23.1	0,010286	1 g enveloppe + 0,3 g sachet vide = 1,3 g/sachet "Paper" EF
Paper pods (coffee)	0,00575	0,46	Based on Base Carbone® V23.1	0,0125	"Paper" EF with ratio between pod grammage (22g/m²) and paper sheet grammage (80g/m²) empty pod = 0.5 g for 40 ml of coffee
Unknown container	0,2243				Average of the glass bottle, plastic, carton and can EFs

Type of purchase container	EF Climeet in fl oz	EF Climeet in number of water/juice/soda bottles	EF Climeet in number of wine/spirits bottles
Glass bottle	0,0155	0,52452	0,39339
Plastic bottle	0,0031	0,10464	0,07848
Tetrapak carton	0,0009	0,030	0,0225
Metal can	0,0070		
Returnable glass bottle	0,0078	0,26226	0,196695
Reused container	0,00		
Returnable metal keg	0,00		
Plastic keg	0,005		
Bag-in-box	0,001		
Aluminium capsule	0,003		
Doypack pouch	0,0003		
Kraft bag	0,00008		
Canvas bag	0,00002		
Bulk	0,00		
Individual bag	0,00050		
Paper pods	0,00017		
Unknown container	0,00663		

Final container (independent of beverage type)

Type of final container	EF Climeet (kgCO2e/liter)	Unit EF (kgCO2e/unit)	No. (unit/liter)	Source	Assumption
Paper cup	0,11	0,0275	4	Auum	25 cl cardboard cup, with thin plastic/PLA layer
Plastic cup	0,08	0,02	4	Auum	25 cl PP cup
Compostable cup (PLA)	0,112	0,028	4	Auum	25 cl PLA cup
Reusable glass / cup	0	0	4		Amortized emissions (large number of reuses)
Ecocup	0,04	0,01	4	Comparative study of event cups	25 cl reusable PP cup
Same container	0	0			Already included in the emissions of the same purchase container (e.g. soda can, purchase container = final container)
Unknown container	0,1007	0,01425	4		Average of cardboard, plastic and compostable cups

Data specific to Climeet Caterer

The EFs used for each ingredient category in the catalog are calculated from data in the Agribalyse 3.1.1 database.
To simplify the integration of catering data, ingredients are grouped by broad category in Climeet, and the associated EFs are the average of the Agribalyse EFs of the ingredients belonging to that ingredient category.

The EFs for each ingredient category are then weighted according to the parameters entered when the recipe was created. The user can specify the proportion of organic products in the recipe, and the proportion of local products.

Depending on the ingredient category, an organic factor can be applied to the Climeet emission factor. This organic factor is calculated for each major ingredient category from Agribalyse 3.1 data, by comparing the emission factor for the same ingredient from organic and conventional farming.
These organic factors are listed in the table below:

Category	ORGANIC factor
Meat	120%
Vegetable	52%
Milk	82%
Fruit	105%

Egg	86%
Average	89%

The user has the choice of specifying the proportion of organic products between "mostly", "totally" or "negligible/don't know". If the user chooses "negligible/don't know", no organic factor is applied to the recipe ingredients. If the user chooses "totally", the organic factor for each ingredient category is applied. If the user chooses "mostly", the organic factor for each ingredient is applied to 75% of the ingredient's weight.

The local factor is calculated on the basis of the share of transport in the various EFs in the Agribalyse 3.1 database.
Local factor % = 1- transport share %/2
To weight the recipe's EF according to the local factor, the same methodology is applied as for the organic factor, depending on what the user chooses.

Ingredient category	**EF (kgCO2e/kg)**	**ORGANIC factor**	**Local factor**	**Transport share (Agribalyse)**	**Assumptions (source: Agribalyse 3.1.1)**
Pasta	1,88	1	95%	9%	Average of the raw pasta EFs
Rice	2,60	105%	99%	2%	Average of the raw rice EFs
Cereals/Tofu	1,57	1	95%	9%	Average of the Cereals EFs and Tofu EF
Vinegar	1,18	1	99%	3%	Vinegar
Condiments (salt, spices, herbs)	3,63	1	1	/	Average of the salt EF, spices EFs and non-fresh herbs EFs
Sauce	6,37	1	1		Average of the sauce EFs
Fresh vegetables	0,86	52%	85%	31%	Average of the raw vegetable EFs excluding frozen
Fresh herbs	0,73	105%	100%	0%	Fresh herbs
Potatoes and pulses	2,08	52%	100%	0%	Average of the pulses EF and the potato and tuber EFs
Frozen or canned vegetables	1,61	89%	100%	0%	Frozen or canned vegetables
Nuts and oilseeds	5,16	52%	100%	0%	Average of the nut and oilseed EFs
Fresh fruit Europe/Canned fruit	0,86	52%	89%	23%	Average of the raw fruit EFs - excluding compotes, excluding non-European fruit EFs
Frozen fruit	1,55	105%	99%	2%	Average of the frozen fruit EFs
Fresh non-European fruit	4,33	89%	1	0	Average of the Mango, Banana, Lychee and Pineapple EFs
Pastries (viennoiseries)	3,29	1	96%	8%	Average of the EFs in the Bread and Viennoiserie

					category - Excluding bread, Excluding pre-packaged
Cakes/Patisserie	3,14	1	96%	8%	Average of the cake EFs
Prepared doughs (shortcrust, puff, sweet)	4,45	1	96%	8%	Average of the shortcrust, puff, sweet and phyllo dough EFs
Flour	2,57	1	96%	8%	Average of the flour, rice flour and soy flour EFs
Bread	1,10	1	96%	8%	EFs of different types of bread
Milk	1,29	82%	94%	13%	Average of the milk EFs
Powdered milk	10,83	82%	94%	13%	Average of the powdered milk EFs
Creams and cream-based specialties	3,57	1	94%	13%	Milk cream, 30% fat, semi-thick, UHT
Cheese	5,69	1	94%	13%	Average of the cheese EFs
Yogurt/Dessert cream	1,70	1	94%	13%	Yogurt/dessert cream
Eggs	3,19	1	94%	13%	Raw egg
Butter	7,82	1	94%	13%	Butter 82% fat, unsalted
Vegetable oil	5,75	1	94%	13%	Average of the soybean, peanut, palm and sunflower oil EFs
Animal fat/Lard	1,67	1	94%	13%	Average of the EFs in the fats and other fats categories
Small fish (e.g. herring, sardines, anchovies)	2,15	1	84%	32%	Average of the herring, anchovy, sardine and mackerel EFs
Other fish	8,11	1	97%	5%	Average of the raw fish EFs excluding small fish
Molluscs and shellfish	9,22	1	94%	12%	Average of the EFs in the Molluscs and shellfish category
Poultry	5,74	120%	99%	1%	Average of the Raw meat category - Chicken, Turkey, Capon
Beef	27,40	120%	99%	1%	Average of the Raw meat category - Beef
Veal	18,54	120%	99%	1%	Average of the Raw meat category - Veal
Pork	8,36	120%	99%	1%	Average of the Raw meat category - Pork
Mutton	33,01	120%	99%	1%	Average of the Raw meat category - Mutton
Lamb	32,84	120%	99%	1%	Average of the Raw meat category - Lamb
Duck	6,38	120%	99%	1%	Average of the Raw meat category - Duck
Charcuterie	9,33	120%	99%	1%	Average of the Charcuterie category
Fruit juice	1,08	1	90%	19%	Multifruit juice - orange base, multivitamin

Alcohol	1,14	1	91%	17%	Average of the market-standard beer, dry white wine and pure alcohol EFs
Ice cream and sorbet	1,57	1	98%	4%	Average of the Ice cream and sorbet category
Chocolate	17,11	1	98%	4%	Dark chocolate with at least 40% cocoa, for baking, bar
Spread	9,90	1	98%	4%	Spread
Sweets	5,17	1	98%	4%	Average of the sweets and non-chocolate confectionery EFs
White sugar	0,61	1	98%	4%	White sugar
Brown sugar	1,11	1	98%	5%	Brown sugar
Honey	1,15	1	98%	4%	Honey
Fruit jams	1,49	1	98%	4%	Fruit jams
Other sweet products/Fruit desserts	0,93	1	98%	4%	Average of sweet products, sugars, honeys and similar (Excluding honey, white sugar, brown sugar) and compote search
Coffee	10,09	1	98%	4%	Coffee
Plant-based milk	0,40	1	100%	0%	Average of the plain soy drink and almond drink EFs
Plant-based meat	4,56	1	100%	0%	Average of cultured meat and plant-based meat according to scientific studies
Plant-based egg	0,18	1	100%	0%	From Yumgo and a Carbone 4 study
Plant-based cheese	2,84	1	98%	3%	Source: Violife

For plant-based meat, the EF is calculated from data from three scientific studies: Tuomisto et al. (2014), Mattick et al. (2015b) and Santo et al. (2020).

Accommodation

The impact of accommodation is broken down into the impact of lodging and the impact of transport between the event venue and the accommodation.
The lodging EF varies according to the type of lodging, and its geographical area.

Hotels

Hotel EFs are calculated using values from the Cornell Hotel Sustainibility Benchmarking Index 2024 database and are in kgCO2e/night (rooms x nights).
Hotel EFs take into account emissions from scopes 1 and 2 (fuel and electricity consumed on site, refrigerant gases), and part of scope 3 (laundry and outsourced refrigerant gases - e.g. air conditioning).

Other Scope 3 emissions, such as those from travel to the hotel, employee commuting, production of purchased products and consumables, waste management, product use, and other outsourced activities, are excluded from the EFs.
Each country is assigned to a world region.

Hotel category and region	EF (kgCO2e/night)	Source and assumptions
France - average hotel	8,9	CHSB 2024, M1, mean
Africa - average hotel	33	CHSB 2024, M1, mean
Asia - average hotel	45,9	CHSB 2024, M1, mean
Caribbean - average hotel	42,7	CHSB 2024, M1, mean
Latin America - average hotel	17,9	CHSB 2024, M1, mean
Middle East - average hotel	44	CHSB 2024, M1, mean
Eastern Europe and Eurasia - average hotel	32,45	CHSB 2024, M1, mean
Nordic countries - average hotel	11,7	CHSB 2024, M1, mean
North America - average hotel	15,6	CHSB 2024, M1, mean
Western Europe - average hotel	13,5	CHSB 2024, M1, mean
Pacific - average hotel	27,7	CHSB 2024, M1, mean
France - 2-star hotel	2,46	CHSB 2024, M1, mean
Africa - 2-star hotel	18,1	CHSB 2024, M1, mean
Asia - 2-star hotel	24,2	CHSB 2024, M1, mean
Caribbean - 2-star hotel	37,3	CHSB 2024, M1, mean
Latin America - 2-star hotel	10,6	CHSB 2024, M1, mean
Middle East - 2-star hotel	16,8	CHSB 2024, M1, mean
Eastern Europe and Eurasia - 2-star hotel	15,7	CHSB 2024, M1, mean
Nordic countries - 2-star hotel	5,4	CHSB 2024, M1, mean
North America - 2-star hotel	12,6	CHSB 2024, M1, mean
Western Europe - 2-star hotel	4,25	CHSB 2024, M1, mean
Pacific - 2-star hotel	19,9	CHSB 2024, M1, mean
France - 3-star hotel	4,3	CHSB 2024, M1, mean
Africa - 3-star hotel	23,3	CHSB 2024, M1, mean
Asia - 3-star hotel	37,2	CHSB 2024, M1, mean
Caribbean - 3-star hotel	37,3	CHSB 2024, M1, mean
Latin America - 3-star hotel	17,4	CHSB 2024, M1, mean
Middle East - 3-star hotel	33,6	CHSB 2024, M1, mean

Eastern Europe and Eurasia - 3-star hotel	25,25	CHSB 2024, M1, mean
Nordic countries - 3-star hotel	8,7	CHSB 2024, M1, mean
North America - 3-star hotel	15,4	CHSB 2024, M1, mean
Western Europe - 3-star hotel	8,5	CHSB 2024, M1, mean
Pacific - 3-star hotel	19,9	CHSB 2024, M1, mean
France - 4-star hotel	8,4	CHSB 2024, M1, mean
Africa - 4-star hotel	35,1	CHSB 2024, M1, mean
Asia - 4-star hotel	52,1	CHSB 2024, M1, mean
Caribbean - 4-star hotel	50,3	CHSB 2024, M1, mean
Latin America - 4-star hotel	32,7	CHSB 2024, M1, mean
Middle East - 4-star hotel	50,3	CHSB 2024, M1, mean
Eastern Europe and Eurasia - 4-star hotel	37,15	CHSB 2024, M1, mean
Nordic countries - 4-star hotel	14,5	CHSB 2024, M1, mean
North America - 4-star hotel	23,5	CHSB 2024, M1, mean
Western Europe - 4-star hotel	12,5	CHSB 2024, M1, mean
Pacific - 4-star hotel	31,9	CHSB 2024, M1, mean
France - 5-star hotel	11,2	CHSB 2024, M1, mean
Africa - 5-star hotel	65	CHSB 2024, M1, mean
Asia - 5-star hotel	61,4	CHSB 2024, M1, mean
Caribbean - 5-star hotel	67,5	CHSB 2024, M1, mean
Latin America - 5-star hotel	51,9	CHSB 2024, M1, mean
Middle East - 5-star hotel	60,3	CHSB 2024, M1, mean
Eastern Europe and Eurasia - 5-star hotel	46,15	CHSB 2024, M1, mean
Nordic countries - 5-star hotel	19,1	CHSB 2024, M1, mean
North America - 5-star hotel	41,6	CHSB 2024, M1, mean
Western Europe - 5-star hotel	18,9	CHSB 2024, M1, mean
Pacific - 5-star hotel	37,4	CHSB 2024, M1, mean

Other types of accommodation

For other lodging types, EFs are calculated on the basis of estimated energy consumption per m², and the average m² surface area.

According to Habitat Presto data (see Energy), average consumption is 250 kWh/m²/year or 1.09 kWh/m²/day.

We assume 10 hours of consumption per day.

Type of lodging	Number of m²	Assumption	kWh/day
Tent	3	Internal estimate	1
Bungalow	40	Internal estimate	18
Apartment rental	79	Source: Wikipedia	36
House rental	115	Source: Wikipedia	52
Guest room	18	Source: Wikipedia	8

Based on estimated daily consumption by type of lodging, we then apply the EF of the electricity mix by world region corresponding to the country of the event entered in the parameters. Regional EFs are calculated from the average EFs of the countries belonging to the region (source: IEA 2022, non-shareable basis).

Accommodation-event travel

The user specifies a range of km for the distance between the accommodation and the event venue, and the associated mode of transport.
The EF of the modes of transport are the same as those used in the "Transportation of participants" section.
The distance used in the calculation is the average value of the km range, as detailed below:

Distance indication between hotel and event venue	Distance used by the tool	Unit
On site (no transport)	0,00	km/pers
Very close (< 1 km)	0,50	km/pers
Fairly close (1 - 5 km)	3,00	km/pers
Rather distant (5 - 10 km)	7,50	km/pers
Very far (> 10 km)	20,00	km/pers
Unknown	5,00	km/pers

Imperial system

The distance ranges proposed in the imperial system are as follows. However, Climeet uses the same distance as in the metric system for the calculation.

Distance indication between hotel and event venue	Distance used by the tool	Unit
On site (no transport)	0,00	km/pers
Very close (< 1 mile)	0,50	km/pers
Fairly close (1 - 3 miles)	3,00	km/pers
Rather distant (3 - 6 miles)	7,50	km/pers

Very far (> 6 miles)	20,00	km/pers
Unknown	5,00	km/pers

Goodies

The user can enter goodie data in 3 different ways. They can enter the number of goodies for a specific item from the list of goodies most frequently distributed at events. If no exact match can be found, the goodies can be entered in total weight according to the main material of the goody. Finally, as a last resort, they can enter the budget allocated according to the main material of the goody. We recommend using the 3rd method only as a last resort, as monetary EFs are much more uncertain. We remind you that it is imperative to integrate data in physical quantities whenever possible, before using monetary data.

Physical data

Among the physical data, we distinguish between goodies by number and those by weight, expressed in kg or lbs.

The EF also includes end-of-life emissions. These emissions are calculated on the basis of the materials of the various items, and weight assumptions where applicable. End-of-life EFs are those used in the "Waste" section of the "average end-of-life - unknown" column in kgCO2e/kg.

Badges

Title	EF with the end of life	Unit	Source	EF title Assumption	End-of-life calculation assumption
Nylon wristband without RFID chip (no.)	0,016	kgCO2e/unit	Based on BC ADEME 23.1	Nylon Assumption: weight = 2g	EF Residual waste (BC ADEME 23.1)
Nylon wristband with RFID chip (no.)	0,032	kgCO2e/unit	Based on BC ADEME 23.1	Nylon Assumption: weight = 4g	EF Residual waste (BC ADEME 23.1)
Lanyard (no.)	0,080	kgCO2e/unit	Based on BC ADEME 23.1	50% Nylon + 50% metal clip "Nylon" EF + "new steel" EF Total weight: 15g	EF Residual waste (BC ADEME 23.1)
Paper/cardboard badge (no.)	0,0414	kgCO2e/unit	Based on the Infopro LCA digital	Cardboard - new Weight: 9g	Included in the LCA EF
PVC badge (no.)	0,0418	kgCO2e/unit	Based on the Infopro LCA digital	50% recycled PVC plastic Weight: 8g	Included in the LCA EF
Plastic protection (badge holder) (no.)	0,017	kgCO2e/unit	Based on BC ADEME 23.1	New PVC plastic Weight: 5g	EF Plastic (BC ADEME 23.1)

Goodie items

Title	EF with the end of life	Unit	Source	EF title Assumption	End-of-life calculation assumption
Cotton T-shirt (no.)	7	kgCO2e/unit	BC ADEME 23.1	Cotton T-shirt	From the BC ADEME 23.1 documentation
Synthetic T-shirt (no.)	6	kgCO2e/unit	BC ADEME 23.1	Synthetic T-shirt	From the BC ADEME 23.1 documentation
Cotton cap (no.)	1,65	kgCO2e/unit	Based on BC ADEME 23.1	"Cotton" EF Assumption: 100g	EF textile - used household linen - average end-of-life - impacts (BC ADEME 23.1)
Synthetic cap (no.)	1,06	kgCO2e/unit	Based on BC ADEME 23.1	"Polyester" EF Assumption: 70g	EF textile - used household linen - average end-of-life - impacts (BC ADEME 23.1)
Cotton tote bag (no.)	2,45	kgCO2e/unit	Based on BC ADEME 23.1	"Cotton" EF Assumption: 100g	EF textile - used household linen - average end-of-life - impacts (BC ADEME 23.1)
Synthetic tote bag (no.)	1,52	kgCO2e/unit	Based on BC ADEME 23.1	"Polyester" EF Assumption: 100g	EF textile - used household linen - average end-of-life - impacts (BC ADEME 23.1)
Mug (no.)	Non-shareable basis	kgCO2e/unit	Based on Ecoinvent 3.8	"Ceramic tile production - RoW - ceramic tile" EF assumption: weight = 300g	EF ceramic end-of-life - average end-of-life (BC ADEME 23.1)
Pen (no.)	0,0327	kgCO2e/unit	Based on BC ADEME 23.1	"Average plastic" EF - assumption: 10g	EF average plastic end-of-life - average end-of-life
Pencil (no.)	0,000952	kgCO2e/unit	Based on BC ADEME 23.1	Wood EF - assumption: 6g	EF wood end-of-life
Paper notebook (no.)	0,24855	kgCO2e/unit	Based on BC ADEME 23.1	"Paper" EF - assumption: 150g	EF paper end-of-life
Reusable steel bottle (no.)	1,4913	kgCO2e/unit	Based on BC ADEME 23.1	"Stainless steel, coils, cold-rolled (304) for EEE (50% recycled)" EF - assumption: 300g	EF metals end-of-life
Reusable plastic bottle (no.)	0,327	kgCO2e/unit	Based on BC ADEME 23.1	"Plastic" EF - assumption: 100g	EF plastic end-of-life

To calculate the end-of-life of textile items not present in Base Carbone V23.1, the end-of-life EF for used textiles and household linen (average end-of-life) from BC 23.1 was used, based on the weight assumptions for each item.

Finally, if the goodies do not correspond to the first categories, the user can enter the goodies by weight according to the main material.

Raw materials

Title	EF with the end of life	Unit	Source	EF title Assumption	End-of-life calculation assumption
Cotton (kg)	16,5	kgCO2e/kg	BC ADEME 23.1	Cotton yarn	EF textile - used household linen - average end-of-life - impacts (BC ADEME 23.1)
Cardboard (kg)	1,13	kgCO2e/kg	Base Carbone V23.1	Cardboard - new	EF Paper/cardboard (BC ADEME 23.1)
Paper (kg)	1,66	kgCO2e/kg	Base Carbone V23.1	Paper - Average - Excluding use and end of life	EF Paper/cardboard (BC ADEME 23.1)
Glass (kg)	0,93	kgCO2e/kg	Base Carbone V23.1	Glass - new	End-of-life included in the EF
Wood (kg)	0,16	kgCO2e/kg	Base Carbone V23.1	Short-life wood (furniture…) - manufacturing	EF Wood Waste (BC ADEME 23.1)
Metal (kg)	4,70	kgCO2e/kg	Based on Base Carbone V23.1	Average of "new steel" and "new aluminium"	End-of-life included in the EFs
Plastic (kg)	3,27	kgCO2e/kg	Base Carbone V23.1	Plastic - PET - new	End-of-life included in the EF
Recycled plastic (kg)	0,327	kgCO2e/kg	Based on Base Carbone V23.1	=EF plastic /10 Assumption: ratio of 10 between the impacts of new and recycled plastic	End-of-life included in the EF
Food (kg)	5,21	kgCO2e/kg	Based on Agribalyse 3.1	Average of the EFs of the most common food products used as goodies (dry biscuit, aperitif biscuit, jam, sweets, pate, terrine, honey, chocolate)	No end-of-life (food product consumed)
Leather (kg)	13,90	kgCO2e/kg	Based on Base Carbone V23.1	From the "leather shoes" EF, assuming the weight of a pair of shoes = 1 kg (500g per shoe)	Textile end-of-life (BC ADEME 23.1)
Ceramic (kg)	Non-shareable basis	kgCO2e/kg	Ecoinvent 3.8	Ceramic tile production - RoW - ceramic tile	EF ceramic end-of-life - average end-of-life (BC ADEME 23.1)
Electronics (kg)	51,75	kgCO2e/kg	Based on Base Carbone V23.1	Average of the EFs in kgCO2e/kg obtained from the Base Empreinte documentation for the various IT items (obtained via	EF - WEEE - average end-of-life (BC ADEME 23.1)

				kg/product and kgCO2e/product)	
Other (kg)	9,39	kgCO2e/kg	Based on Base Carbone V23.1, Ecoinvent 3.8	Average of all goodie EFs in kg	

Imperial system

Goodies can also be entered in lbs and are converted to kg using the following conversion factor:

1	lbs (pounds)	0,454	kg

Title	EF with the end of life	Unit
Cotton (lbs)	7,48	kgCO2e/lbs
Cardboard (lbs)	0,51	kgCO2e/lbs
Paper (lbs)	0,75	kgCO2e/lbs
Glass (lbs)	0,42	kgCO2e/lbs
Wood (lbs)	0,07	kgCO2e/lbs
Metal (lbs)	2,14	kgCO2e/lbs
Plastic (lbs)	1,48	kgCO2e/lbs
Recycled plastic (lbs)	0,15	kgCO2e/lbs
Food (lbs)	2,37	kgCO2e/lbs
Leather (lbs)	6,30	kgCO2e/lbs
Ceramic (lbs)	Non-shareable basis	kgCO2e/lbs
Electronics (lbs)	23,47	kgCO2e/lbs
Other (lbs)	4,26	kgCO2e/lbs

Monetary data

The conversion of EF in kgCO2e/euro to kgCO2e/dollar and kgCO2e/yuan is carried out using the same conversion factor used in the "Equipment and built spaces" section.
EUR USD conversion rate =1.459854 USD/EUR
Source: https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm 2022 data
Conversion rate EUR YUAN = 5.8234YUAN/EUR Source: https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm 2022 data

The tool uses the new monetary EF from the Base Empreinte, dating from 2023.
The monetary factors have also been weighted by a factor of 1.064 to take account of the 6.4% inflation between 2023 and 2025, as the EFs in Base Carbone V23.1 date from 2023.

Monetary factors include end-of-life emissions and are derived from the monetary service EFs in the Base Carbone V23.1 database, multiplied by the ratios of goodie EFs with and without end-of-life, presented above.
The "textile" EF becomes the "cotton" EF.

Type of goodies	EF with the end of life	Unit	Source	EF title Assumption	EFs used in the with/without end-of-life ratio
Cotton	0,33	kgCO2e/euro	Based on BC ADEME 23.1	Textile industry products, clothing, leather and leather goods - 2023	The EFs of "textile" goodies
Cardboard	0,60	kgCO2e/euro	Based on BC ADEME 23.1	Paper and cardboard - 2023	EF paper/cardboard
Paper	0,60	kgCO2e/euro	Based on BC ADEME 23.1	Paper and cardboard - 2023	EF paper/cardboard
Wood	0,83	kgCO2e/euro	Based on BC ADEME 23.1	Wood, cork (excluding furniture) / Basketry, wickerwork - 2023	EF wood
Electronics	0,22	kgCO2e/euro	Based on BC ADEME 23.1	IT, electronic and optical products - 2023	EF of the "video" category
Glass	1,70	kgCO2e/euro	Based on BC ADEME 23.1	Other non-metallic mineral products - 2023	EF glass
Plastic	0,54	kgCO2e/euro	Based on BC ADEME 23.1	Rubber and plastic products - 2023	EF plastic
Recycled plastic	0,05	kgCO2e/euro	Based on BC ADEME 23.1	=EF plastic /10 Assumption: ratio of 10 between the impacts of new and recycled plastic Source: ADEME New PEDBD plastic: 2090 kgCO2e/tonne and recycled: 202 kgCO2e/tonne	EF plastic/10
Food	0,51	kgCO2e/euro	Based on BC ADEME 23.1	Food industry products, beverages and tobacco-based products - 2023	EF service processed agri-food products
Leather	0,33	kgCO2e/euro	Based on BC ADEME 23.1	Textile industry products, clothing, leather and leather goods - 2023	The EFs of "textile" goodies

Metal	0,32	kgCO2e/euro	Based on BC ADEME 23.1	Metal products, excluding machinery and equipment - 2023	EF metal
Ceramic	0,22	kgCO2e/euro	Based on BC ADEME 23.1	Other manufactured products - 2023	EF ceramic
Other	0,54	kgCO2e/euro	Based on BC ADEME 23.1	Average of all goodies	Average of all goodies

Type of goodies	**EF with the end of life**	**Unit**	**EF with the end of life**	**Unit**
Cotton	0,22	kgCO2e/US dollar	0,06	kgCO2e/yuan
Cardboard	0,41	kgCO2e/US dollar	0,10	kgCO2e/yuan
Paper	0,41	kgCO2e/US dollar	0,10	kgCO2e/yuan
Wood	0,14	kgCO2e/US dollar	0,14	kgCO2e/yuan
Electronics	0,15	kgCO2e/US dollar	0,04	kgCO2e/yuan
Glass	1,16	kgCO2e/US dollar	0,29	kgCO2e/yuan
Plastic	0,37	kgCO2e/US dollar	0,09	kgCO2e/yuan
Recycled plastic	0,04	kgCO2e/US dollar	0,01	kgCO2e/yuan
Food	0,35	kgCO2e/US dollar	0,09	kgCO2e/yuan
Leather	0,224	kgCO2e/US dollar	0,06	kgCO2e/yuan
Metal	0,22	kgCO2e/US dollar	0,05	kgCO2e/yuan
Ceramic	0,153	kgCO2e/US dollar	0,4	kgCO2e/yuan
Other	0,37	kgCO2e/US dollar	0,09	kgCO2e/yuan

Waste

Waste EFs vary according to waste type and associated end-of-life.

Depending on the type of waste, certain treatment methods are not applicable. Example: the tool has no EF for recycling residual waste, as this treatment route is not applicable to this type of waste. For WEEE (electronic waste), there is only the average end-of-life EF. For organic waste, the user can choose between "unknown - average end-of-life", "methanization", "incineration", "composting" or "landfill".

Waste can be entered in kg, m3, liters or bags, depending on the type of data available to the user. These units are also available in the imperial system.
The EFs in kgCO2e/kg come from the Empreinte database and are then converted into kgCO2e/m3, kgCO2e/litre and kgCO2e/bag according to the following conversion factors:

Density table by waste type

Residual	250	kg/m3
Cardboard/paper	150	kg/m3
Plastic	100	kg/m3
Metals	750	kg/m3
Glass	500	kg/m3
Organic	400	kg/m3
Electronics	600	kg/m3
Wood	400	kg/m3

Conversion m3 to liters	1	m3	1000	liters
Conversion liters to bag	1	bag	110	liters

Unknown/medium end of life

Type of waste	EF in kg	EF in m3	EF in liter	EF in bag	EF source (kg)	EF title Assumption
Wood	0,12	48,80	0,05	5,37	BC ADEME 23.1	Building waste/class B wood/end of life - impacts
Residual waste	0,39	96,50	0,10	10,62	BC ADEME 23.1	Residual household waste / average end of life - impacts
Paper / Cardboard	0,74	110,55	0,11	12,16	BC ADEME 23.1	Cardboard packaging - average end of life - impacts
Plastics	1,48	147,90	0,15	16,27	BC ADEME 23.1	Packaging - petroleum-based rigid plastic PET other packaging - average end of life - impacts
Metals	0,31	233,25	0,23	25,66	BC ADEME 23.1	Aluminium packaging average end of life - impacts
Glass	0,50	248,00	0,25	27,28	BC ADEME 23.1	Glass packaging average end of life - impacts
Organic waste	0,69	276,80	0,28	30,45	BC ADEME 23.1	Landfill EF to be conservative
Electronic waste (WEEE)	2,00	1197,00	1,20	131,67	BC ADEME 23.1	Average WEEE (default) - Average end of life - Impacts

Incineration

Type of waste	EF in kg	EF in m3	EF in liter	EF in bag	Source	EF title Assumption
Wood	0,07	27,60	0,03	3,04	BC ADEME 23.1	Packaging/Wood/Incineration - Impacts
Residual waste	0,37	93,50	0,09	10,29	BC ADEME 23.1	Residual household waste / incineration - impacts
Paper / Cardboard	0,12	18,00	0,02	1,98	BC ADEME 23.1	Cardboard packaging - incineration - impacts

Plastics	2,14	213,90	0,21	23,53	BC ADEME 23.1	Packaging - petroleum-based plastic PET - incineration - impacts
Metals	0,11	82,50	0,08	9,08	BC ADEME 23.1	Packaging/Aluminium/Incineration - Impacts
Glass	0,13	65,00	0,07	7,15	BC ADEME 23.1	Glass packaging incineration - impacts
Organic waste	0,05	18,00	0,02	1,98	BC ADEME 23.1	Putrescible waste - Incineration - Impacts
Electronic waste (WEEE)	NA	NA	NA	NA		

Landfill

Type of waste	EF in kg	EF in m3	EF in liter	EF in bag	Source	EF title Assumption
Wood	0,93	370,10	0,37	40,71	BEIS 2023	Wood - Building materials - Landfill
Residual waste	0,41	103,00	0,10	11,33	BC ADEME 23.1	Residual household waste / storage - impacts
Paper / Cardboard	0,95	142,50	0,14	15,68	BC ADEME 23.1	Packaging/cardboard/storage - impacts
Plastics	0,04	4,10	0,00	0,45	BC ADEME 23.1	Packaging - petroleum-based plastic PET - storage - Impacts
Metals	0,04	30,75	0,03	3,38	BC ADEME 23.1	Packaging/Aluminium/Storage - Impacts
Glass	0,04	20,50	0,02	2,26	BC ADEME 23.1	Glass packaging storage - impacts
Organic waste	0,69	276,80	0,28	30,45	BC ADEME 23.1	Putrescible waste - Storage - Impacts
Electronic waste (WEEE)	NA	NA	NA	NA		

Recycling

Type of waste	EF in kg	EF in m3	EF in liter	EF in bag	Source	EF title Assumption
Wood	0,02	8,51	0,01	0,94	BEIS 2023	Wood - Building materials - Closed loop recycling
Residual waste	NA	NA	NA	NA		Not applicable
Paper / Cardboard	0,99	148,80	0,15	16,37	BC ADEME 23.1	Cardboard packaging - recycling - impacts
Plastics	0,66	214,00	0,21	23,54	BC ADEME 23.1	Packaging - rigid plastic PET other packaging - recycling - Impacts
Metals	0,87	654,75	0,65	72,02	BC ADEME 23.1	Aluminium packaging - recycling - impacts
Glass	0,64	319,50	0,32	35,15	BC ADEME 23.1	Glass packaging recycling - impacts
Organic waste	NA	NA	NA	NA		
Electronic waste (WEEE)	NA	NA	NA	NA		

Methanization

Type of waste	EF in kg	EF in m3	EF in liter	EF in bag	Source	EF title Assumption
Organic waste	0,173	69,20	0,07	7,61	BC ADEME 23.1	Kitchen waste - Methanization - Impacts

Composting

Type of waste	EF in kg	EF in m3	EF in liter	EF in bag	Source	EF title Assumption
Wood	0,0089	3,56	0,004	0,39	BEIS 2023	Wood - Building materials - Composting
Organic waste	0,0089	3,56	0,004	0,39	BEIS 2023	Organic: food and drink waste/garden waste/mixed food and garden waste

Imperial system

Waste can also be entered in imperial units. The EFs are based on metric EFs and the following conversion factors:

Conversion ft3 to m3	1	ft3	0,028	m3
Conversion gal to liters	1	gal	3,79	liters
Conversion lbs to kg	1	lbs	0,45	kg
Conversion US short ton to kg	1	US short ton	907	kg

Unknown/medium end of life

Type of waste	EF in lbs	EF in ft3	EF in gal	EF in US ton
Wood	0,06	1,38	0,18	110,71
Residual waste	0,18	2,73	0,37	350,27
Paper / Cardboard	0,33	3,13	0,42	668,78
Plastics	0,67	4,19	0,56	1342,11
Metals	0,14	6,60	0,88	282,21

Glass	0,22	7,02	0,94	450,09
Organic waste	0,31	7,84	1,05	627,95
Electronic waste (WEEE)	0,90	33,90	4,53	1810,34

Incineration

Type of waste	EF in lbs	EF in ft3	EF in gal	EF in US ton
Wood	0,03	0,78	0,10	63
Residual waste	0,17	2,65	0,35	339
Paper / Cardboard	0,05	0,51	0,07	109
Plastics	0,97	6,06	0,81	1941
Metals	0,05	2,34	0,31	100
Glass	0,06	1,84	0,25	118
Organic waste	0,02	0,51	0,07	41
Electronic waste (WEEE)	NA	NA	NA	NA

Landfill

Type of waste	EF in lbs	EF in ft3	EF in gal	EF in US ton
Wood	0,42	10,48	1,40	840

Residual waste	0,19	2,92	0,39	374
Paper / Cardboard	0,43	4,04	0,54	862
Plastics	0,02	0,12	0,02	37
Metals	0,02	0,87	0,12	37
Glass	0,02	0,58	0,08	37
Organic waste	0,31	7,84	1,05	628
Electronic waste (WEEE)	NA	NA	NA	NA

Recycling

Type of waste	**EF in lbs**	**EF in ft3**	**EF in gal**	**EF in US ton**
Wood	0,01	0,24	0,03	19,3
Residual waste	NA	NA	NA	NA
Paper / Cardboard	0,45	4,21	0,56	900,181
Plastics	0,97	6,06	0,81	1941,924
Metals	0,40	18,54	2,48	792,196
Glass	0,29	9,05	1,21	579,855
Organic waste	NA	NA	NA	NA
Electronic waste (WEEE)	NA	NA	NA	NA

Methanization

Type of waste	EF in lbs	EF in ft3	EF in gal	EF in US ton
Organic waste	0,078	1,96	0,26	157

Composting

Type of waste	EF in lbs	EF in ft3	EF in gal	EF in US ton
Organic waste	0,0040	0,10	0,01	8,1
Wood	0,0040	0,10	0,01	8,1

Data specific to Climeet Space Designer

Storage

In the service calculation, the user can specify the surface area in m² used to store the various fittings used during the service, as well as the number of days of storage. It is assumed that most of these buildings are poorly insulated, such as warehouses. We take the energy consumption of a building with energy letter E, i.e. 130 kWh/m².day (according to the table in "Energy").

By multiplying by the surface area and number of days, we obtain an estimate of the storage's energy consumption in kWh, converted into kgCO2e using the EF of the energy mix of the country hosting the event, as specified in the service parameters.

Auxiliary services

The user can choose between two approaches to estimating emissions linked to auxiliary services: a less robust monetary approach, and an approach based on work-days, depending on the information available.

Auxiliary services do not cover all the services provided by space planners, and the associated emissions are usually negligible in relation to the total footprint.

The monetary EFs have also been weighted by a factor of 1.18 to take account of 18% inflation between 2018 and 2024.

Monetary approach

Services	EF	Unit	Source	Assumption
Security guarding	0,144	kgCO2e/€	Based on BC ADEME 23.1	Service - Services (printing, advertising, architecture and engineering, multi-technical building maintenance, guarding, cleaning, security, travel agency, other business services)
Hosts	0,144	kgCO2e/€	Based on BC ADEME 23.1	Service - Services (printing, advertising, architecture and engineering, multi-technical building maintenance, guarding, cleaning, security, travel agency, other business services)
Stage manager	0,144	kgCO2e/€	Based on BC ADEME 23.1	Service - Services (printing, advertising, architecture and engineering, multi-technical building maintenance, guarding, cleaning, security, travel agency, other business services)
Caterer	0,271	kgCO2e/€	Based on BC ADEME 23.1	Service - Accommodation and catering
Entertainment	0,229	kgCO2e/€	Based on BC ADEME 23.1	Service - Sports, recreational and leisure activities
Cleaning	0,144	kgCO2e/€	Based on BC ADEME 23.1	Service - Services (printing, advertising, architecture and engineering, multi-technical building maintenance, guarding, cleaning, security, travel agency, other business services)

Photography/Film	0,263	kgCO2e/€	Based on BC ADEME 23.1	Service - Films, sound recordings, television and radio

Work-days approach

The work-day emission factors are the same as those used in the "dedicated work-days" section. They are adapted according to the country entered in the service parameters.

Digital

The carbon impact of digital can be broken down into three components: data storage, data transfer over the network, and data visualization.
For each digital category, the total footprint is the sum of these three footprints, calculated separately.

Websites

The carbon footprint of a website is broken down into three components:

- Website data storage footprint
- The footprint of data transfer over the network
- The footprint associated with viewing the website

To calculate the carbon footprint associated with data storage, we first estimate the weight in MB of the website, based on the number of web pages entered by the user. The data weight of a web page is estimated at 2.21 MB/web page (Source: http Archive, 2021). This data weight is then converted into kWh of electricity consumed to run the data centers.
Electricity consumption is estimated at 0.002 kWh/GB stored, according to Carbon Brief.

Then, depending on whether storage is local or on Cloud servers, different EFs are used.
If the storage is local, the tool takes the EF of the electricity mix of the country of the event.
If the storage is on Cloud, we take the following EF:

Type of Cloud	EF	Unit	Source
Cloud - AWS	0,21	kgCO2e/kWh	Based on U.S. Environmental Protection Agency
Cloud - Azure	0,03	kgCO2e/kWh	Based on U.S. Environmental Protection Agency
Cloud - Google	0,03	kgCO2e/kWh	Based on U.S. Environmental Protection Agency
Cloud - Unknown	0,57	kgCO2e/kWh	Based on U.S. Environmental Protection Agency

To calculate the carbon footprint of website data transfer, we estimate the energy consumption represented by a visit to the website.
According to Website Carbon, an English website that calculates the carbon footprint of a web page, on average, a visit to a website worldwide emits 0.5 gCO2e.
According to Sustainable Web Design, the global EF of the electricity mix is 442gCO2e/kWh.
This gives an average value for **electricity consumption linked to a website visit of 0.00113 kWh/visit.**
Then, depending on the country of the event, this electricity consumption is converted into kgCO2e using the EF of the electricity mix of the country of the event.

Finally, the tool estimates the carbon footprint associated with viewing the website. This is done by estimating the electricity consumption of IT equipment, based on the time spent on the website. Laptop and desktop computers are used as a reference. According to Researchgate data on computer equipment used in the USA in 2017, on average the power

used by a desktop computer is 85W, and that of a laptop 22W. Averaging the two values gives a per-minute electricity consumption of 0.001 kWh.
According to Orson.io, the average time spent by French people on a website in 2021 is 2 minutes and 17 seconds, or 137 seconds. Multiplying the total number of visitors by this average visit time and by the average consumption per minute of a computer, we obtain the electricity consumption associated with viewing the website in kWh.
This electricity consumption is then converted into kgCO2e, using the EF of the electricity mix corresponding to the viewing area entered by the user. Regional averages have been calculated from IEA country data, 2022.

Eco-design of a website

The user can specify whether it is an eco-designed website.
According to Websitecarbone, the average reduction in the carbon footprint of a website visit is between 20% and 50%. Wholegraindigital lists the main eco-design actions for websites, the vast majority of which reduce the amount of data transmitted over the network. We have therefore chosen to apply a reduction ratio to the carbon footprint of data transfer. For a conservative approach, we've taken a reduction factor of 0.8 (to achieve a 20% reduction).

The sum of the three carbon footprints corresponds to the total carbon footprint of the websites.

Applications

The carbon footprint of an application is broken down into three components:

- Application data storage footprint
- The footprint of data transfer over the network
- Application visualization footprint

The data storage footprint is calculated on the basis of the application's weight (in MB). Either the user knows this and enters it directly, or if the weight is unknown, the tool uses the average value of 0.023 GB, according to a 2012 ABI Research study.
The weight of data is then converted into kWh of electricity consumed, using Carbon Brief's conversion factor (in kWh/GB stored). Finally, in the same way as for websites, either the EF of the electricity mix in the country of the event is used if the storage is local, or the EF of the type of Cloud entered.

For the data transfer footprint, the calculation is the same as for website data transfer, based on the total number of visitors to the application, the power consumption conversion factor (kWh/visit) and the country of the event.
If the user specifies an eco-designed application, this footprint is weighted by a factor of 0.8, using the same methodology as for a website.

For the footprint associated with viewing the application, the calculation is the same as for the website in a conservative approach, based on the total number of visitors to the application, an average time of 137 seconds per visit, the factor for converting viewing time into power consumption (kWh/min) and the viewing area.

Livestreams (webinars, videoconferences)

For the carbon footprint associated with the storage of livestream data, we estimate the electricity consumption of the servers, depending on the video/audio quality and the duration in minutes of the livestream.

Energy consumption per hour for videoconferencing data storage, depending on video quality:

Video quality	Server electricity consumption per hour	Unit	Source	Assumption
SD	0,12	kWh/h	IEA Website	
HD	0,48	kWh/h	IEA Website	
UHD/4K	1,14	kWh/h	IEA Website	
Don't know	0,48	kWh/h	IEA Website	Same value as HD
Audio only	0,02	kWh/h	Based on Greenspector and IEA Website	EF obtained from the HD EF in kWh/h and GB/h and the Audio only EF in GB/h (rule of three)
Audio + screen sharing	0,04	kWh/h	Based on Greenspector and IEA Website	EF obtained from the HD EF in kWh/h and GB/h and the Audio + screen sharing EF in GB/h (rule of three)

The value corresponding to the quality entered by the user is multiplied by the livestream duration in minutes to obtain electricity consumption in kWh.
In the same way as for websites and the application, we multiply by the EF of the electricity mix of the country of the event if the storage is local, or by the EF of the Cloud entered by the user.

For the carbon footprint of data transfer, we estimate the total weight of data that transited through the network as a function of the livestream duration in minutes, the total number of people connected, and the weight of data per hour as a function of the video quality of the livestream (table below).

Weight of data transferred during a videoconference as a function of video quality:

Video quality	Data consumption per hour	Unit	Source	Assumption
SD	0,70	GB/h	Ilounge	
HD	1,50	GB/h	Ilounge	
UHD/4K	7,00	GB/h	Ilounge	
Don't know	1,50	GB/h	IEA Website	Same value as HD
Audio only	0,07	GB/h	Greenspector 2021	
Audio + screen sharing	0,11	GB/h	Greenspector 2021	

In the same way as for websites and applications, this total weight of data is converted into electricity consumption, then into kgCO2e, based on the EF of the electricity mix of the country hosting the event.

For the carbon footprint associated with viewing the livestream, we estimate the total power consumption of the IT equipment connected during the livestream, depending on the number of people connected, the livestream duration, the video quality, and the videoconferencing application.

Laptop video viewing power consumption per hour, depending on video quality:

Video quality	PC electricity consumption per hour of viewing	Unit	Source	Assumption
SD	0,018	kWh/h	Greenspector	
HD	0,020	kWh/h	Greenspector	
UHD/4K	0,023	kWh/h	Greenspector	
Don't know	0,020	kWh/h	Based on Greenspector	Average of the SD, HD and UHD/4K values
Audio only	0,001	kWh/h	Based on Greenspector and Ilounge	EF calculated from the HD EFs in GB/h and kWh/h and the Audio only EF in GB/h (rule of three)
Audio + screen sharing	0,001	kWh/h	Based on Greenspector	EF calculated from the HD EFs in GB/h and kWh/h and the Audio + screen sharing EF in GB/h (rule of three)

Depending on the videoconferencing application used, this power consumption may vary, with some applications consuming more energy than others.
We therefore apply a ratio according to the application entered by the user, calculated on the basis of data from a Greenspector study carried out in 2021:

Videoconferencing application	Ratio on viewing electricity consumption	Source
Google Meet	0,67	Ratio calculated from Greenspector data
Microsoft Teams	0,69	Ratio calculated from Greenspector data
Big Blue Buttons	0,71	Ratio calculated from Greenspector data
Skype	0,85	Ratio calculated from Greenspector data
Zoom	0,92	Ratio calculated from Greenspector data
StarLeaf	1,25	Ratio calculated from Greenspector data
Discord	1,77	Ratio calculated from Greenspector data
Other	1,00	Ratio calculated from Greenspector data - average value

We then convert the total electricity consumption of the livestream's viewing equipment into kgCO2e using the EF of the electricity mix associated with the viewing region.

The sum of the three carbon footprints gives the total livestream footprint.

Virtual environments (metaverse, exhibitions)

The carbon footprint of a virtual environment is also broken down into 3 components (storage, transfer and viewing). We apply the same calculation methodology as for the website, applying a factor of 3 in a conservative approach.

Duration used by Climeet (hours) based on the duration entered by the user:

Duration entered by the user	Duration (hours)
less than an hour	0,5
around an hour	1
several hours	3
a full day	6

Social networking

The carbon footprint of a social network post's data storage is calculated according to file type (image/gif or video), which determines an average weight of stored data.

image/gif	5	MB	Based on the maximum weight limit of an image on X (formerly Twitter): 5 MB Source: Graphiste Blog X was chosen as the reference because it is the social network with the lowest limit
video	500	MB	Based on the maximum weight limit of a video on X (formerly Twitter): 512 MB Source: Topovideo X was chosen as the reference because it is the social network with the lowest limit

This average weight is then converted into electricity consumption using Carbon Brief's conversion factor (kWh/GB stored). The viewing area of the post then gives the EF of the region's electricity mix.

The carbon footprint of data transfer on the network is calculated using the same methodology as for the website and the number of visits, by converting the number of views of a post into electricity consumption (kWh/visit), then into kgCO2e using the EF of the electricity mix of the country of the event.

The footprint associated with viewing a post is calculated from the number of views of the post, the duration of viewing, the type of social network, and the viewing zone.
First, we estimate the total viewing time by multiplying the number of views by the viewing time of the post.

If the user hasn't filled in the viewing time, the tool defaults to 15 seconds, according to Social Booster's 2022 article, which is based on the average length of videos on Tiktok and Instagram. Total viewing time is then converted into gCO2e according to social network from 2020 Greenspector data, based on app usage for 1 minute in France on a Galaxy S7 smartphone.

Social network	EF	Unit	Source
Facebook	0,70	gCO2e/min	Greenspector
Instagram	1,90	gCO2e/min	Greenspector
LinkedIn	0,70	gCO2e/min	Greenspector
X (formerly Twitter)	0,80	gCO2e/min	Greenspector
Snapchat	2,00	gCO2e/min	Greenspector
Tiktok	4,90	gCO2e/min	Greenspector
Youtube	0,60	gCO2e/min	Greenspector
Other	2,10	gCO2e/min	Greenspector average value

As these EFs are based on French electricity, we apply the ratio between the EF of the electricity mix in the viewing area entered by the user and the EF of the French electricity mix to the result obtained.

Shared files

The footprint of a shared file is split between data storage and data transfer over the network. It is calculated from the total weight of the data, and the type of data storage on the servers. Total data weight is calculated by multiplying the number of file shares by the average file weight, as estimated by the table below:

Average weight of the file entered by the user	Weight used by Climeet	Unit
Very small file (< 1 MB)	0,0005	GB
Small file (< 10 MB)	0,005	GB
Medium file (< 100 MB)	0,05	GB
Large file (< 1 GB)	0,5	GB
Very large file (> 1 GB)	10	GB

Next, the electricity consumption associated with data storage is calculated using the following conversion factor: 0.000392 kWh/GB (source: U.S. Environmental Protection Agency).
Similarly, the electricity consumption associated with data transfer over the network is calculated using the factor: 0.001 kWh/GB (source: U.S. Environmental Protection Agency).
The two electricity consumptions are added together and converted into kgCO2e, either, if storage is local, using the EF of the electricity mix of the country of the event, or, if storage is on Cloud, using the EFs presented above (source: U.S. Environmental Protection Agency).

Emails

The carbon footprint of an email is calculated from the weight of the email and the number of recipients, and varies according to the electricity mix of the country of the event.
The EFs used vary according to the weight of the email.

Email weight	EF	unit	Source
Text only	4	gCO2e/email	BC ADEME 21.1, 2012
With attachment/image (< 1 MB)	20	gCO2e/email	Energuide For a 1 MB email over its total life cycle
With attachment/image (> 1 MB)	35	gCO2e/email	BC ADEME 21.1, 2012

These EFs are based on French data. We apply the ratio between the EF of the electricity mix of the country of the event and the EF of the French electricity mix to the result obtained.