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CARBON FOOTPRINT REPORT

GSTC SEVILLE 2022 EVENT

ecoterrae

GSTC
Global Sustainable Tourism Council

Index

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Ecoterrae is an ISO 9001 and ISO 14001 certified company for quality and environmental management for the organization's activities, products and services. It also calculates and registers its carbon footprint with the Ministry for Ecological Transition (MITERD) from 2014 to 2020, having obtained the CALCULO, REDUZCO and COMPENSO labels.

1. Introduction

1.1. Sustainable Events

A sustainable event is, according to the United Nations, an event that ensures the least impact on the environment and has a positive legacy on society. In other words, they do not only generate **less CO2 emissions**, but also promote equal opportunities, inclusion and the local economy.

For an event to be considered sustainable it must comply with the three pillars of sustainability: environmental, social and economic. This requires prior planning and commitment by all stakeholders involved, from organisers to attendees, with the choice of **suppliers, materials and location**, among others, being essential. To this end, events can rely on good **practices guidelines**, which include actions to be carried out in the three areas in order to carry out a sustainable event. These measures promote, among others, equal opportunities by hiring women and men in the same proportion, boosting the local economy by hiring local companies and personnel, and **calculating the Carbon Footprint** to determine the impact generated on the environment.

1.2. Carbon Footprint

The Carbon Footprint is one of the **key indicators of the sustainability** of an organisation, a product or an event. It is defined as the **measurement of Greenhouse Gas (GHG) emissions** emitted directly or indirectly as a result of the manufacture of a product, the operation of an organisation or the holding of an event.

The Carbon Footprint of events is a sustainability indicator that allows us to know the impact that the different phases of the celebration of an event have on the environment and, specifically, on its contribution to climate change. Based on this indicator, the organisations and companies participating in the event can establish a starting point that allows them to draw up improvement **plans to reduce these GHG emissions.**

This analysis covers all stages of the event, from the preparation to the dismantling of the event, including all intermediate stages. In these phases, different **emitting activities** take place, which must be identified and calculated in order to know their impact on the emissions as a whole. This allows us to know which are the main sources and to act on them, proposing alternatives and improvements to reduce their impact.

In this calculation, a distinction is made between **direct emissions** (Scope 1), derived from the activities of the participating companies and organisations that have control over them, and **indirect emissions**, which are not controlled by them.

Within the indirect emissions we can differentiate between **Scope 2,** which are the emissions derived, fundamentally, from electricity consumption, and **Scope 3**, which includes the rest of the emissions derived from sources that are not owned or controlled by the entity.

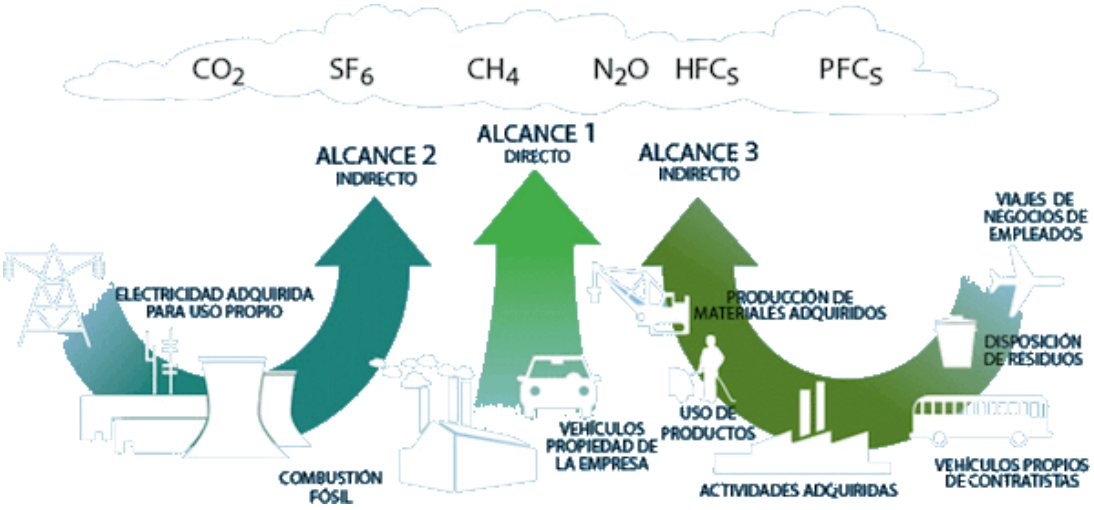

Illustration 1 - Different scopes of the Carbon Footprint

1.3. Applied Regulations

The FIBES Exhibition and Conference Centre demonstrates through the following policies its commitment to proper compliance with all applicable regulations. Likewise, it is committed to a system of continuous improvement of the activities carried out therein, in order to guarantee the use and enjoyment of the facilities in the best possible conditions to guarantee the use and enjoyment of the facilities in the best conditions. The applied regulations can be seen below:

Illustration 2: Systems implemented by FIBES Exhibition and Conference Centre

1.4. Benefits of carbon footprint calculation

Calculating and understanding carbon footprint is the first step in making an event sustainable. This calculation offers a series of advantages and benefits for those who organize it.

It allows us to identify the **main sources of emissions** and act on them by reducing them, increasing efficiency and reducing costs and consumption, helping to comply with legal requirements and to respond to a growing demand for commitment and awareness of the environment by citizens.

It allows to **differentiate** the company/event from others, improving the corporate image and promoting its Social Responsibility, and to access subsidies, **incentives** and new and more demanding lines of business.

2. Methodology: GHG Protocol

The methodology selected for the Emissions Inventory associated with the GSTC2022 Conference was the ***GHG Protocol***[1] (Greenhouse Gas Protocol).

Illustration 3 - GHG Protocol logo

This standard was developed jointly by the *World Resources Institute* (WRI) and the *World Business Council for Sustainable Development* (WBCSD), with companies, governments and environmental groups from all over the world. It is one of the **standards** with the greatest international popularity and is currently used for this type of calculations.

The GHG Protocol states that accounting and reporting for GHG emissions should be based on the following **principles:**

- **Relevance:** the GHG inventory should accurately reflect all emissions of an organisation, product or event.
- **Completeness:** all sources of GHG emissions are accounted for and reported, with justification for any exceptions.
- **Consistency:** Uses methodologies that allow comparison of emissions, data and calculations over time.
- **Transparency:** Addresses all significant or relevant issues in an objective and consistent manner, based on a transparent audit trail.
- **Accuracy:** The measurement of GHG emissions is reviewed and assessed to avoid systematic errors or deviations from actual emissions.

- In summary, the GHG *Protocol* establishes a series of **stages** for the calculation, starting with the identification of the most significant GHG sources (determining the scope of the study) and the selection of the methodology. Once both parameters have been defined, the activity data are collected and the corresponding emission factors are selected for each of these activities, from which the emissions are calculated.

[1] https://ghgprotocol.org/corporate-standard

3. Event Description

The Global Sustainable Tourism Conference (GSTC2022) is an event that brings together all those international and national tourism stakeholders involved in the development and promotion of sustainable travel and tourism, including the public sector, hotels, tour operators, development agencies, NGOs...

This event took place from **12 to 15 December 2022 at FIBES**, **the Conference and Exhibition Centre in Seville,** Andalusia, Spain, and brought together more than 200 international tourism professionals.

During this conference, topics such as the adaptation of tourism to climate change, the integration of sustainability standards, destination management and mobility and ecological accessibility were discussed.

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Illustration 4 - Banner GSTC 2022

4. Activity Data

4.1. Scope of the study

In order to define the scope of the project, we have identified **different stages** for the holding of the conference. This allows us to locate the actions with the greatest impact and focus on implementing measures to improve them.

Once these stages have been established, the most representative **sources of emissions** are analyzed. Specifically, for this event we can distinguish three phases, within which the main sources of GHG emissions are differentiated:

Figure 1 - Stages of the GSTC carbon footprint calculation.

- **Materials:** all those elements (posters, carpets, etc.) manufactured for the event.
- **Assembly (1 day - 12 December):** includes those emissions derived from the activities carried out in the phases prior to the event, during its assembly. These sources include, among others, the transport of suppliers and materials and the consumption of electricity and natural gas.
- **Celebration (2 days - 13 and 14 December):** this phase includes emissions derived from energy consumption (electricity and natural gas) of the FIBES facilities, the mobility of suppliers attending during the event, event attendees, staff and speakers. This phase also takes into account catering and overnight stays.
- **Dismantling (1 day - 15 December):** consists of the collection and transport of materials, suppliers and the management of waste from the event.

Ilustration 5 - Emission sources of an event.

4.2. Methodology for calculating emissions

The Carbon Footprint is calculated for each of the emission sources analyzed in the holding of the event. The following formula is used to calculate the GHG emissions:

$$\mathbf{E = (DA_i \cdot FE_i)}$$

Where:

- E: is the Greenhouse Gas (GHG) emissions in KgCO2e, tCO2e.
- DAi: is the activity data of each emission source (litres, kWh, km, ...).
- FEi: is the emission factor of each emission source (CO2e/litre, CO2e/kWh, CO2e/km, ...)

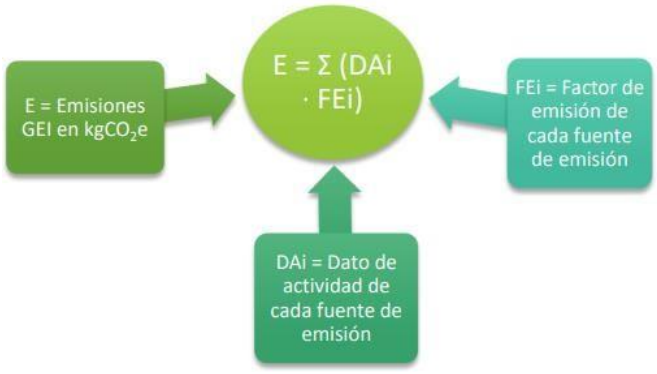

Figure 2 - GHG emissions Calculation

4.3 Emission sources

The activity data and sources of emissions that have been taken into account to calculate the carbon footprint generated by the Global Conference on Sustainable Tourism at FIBES are shown below, as well as the good practices that have been applied for each source of emissions in order to reduce their emissions.

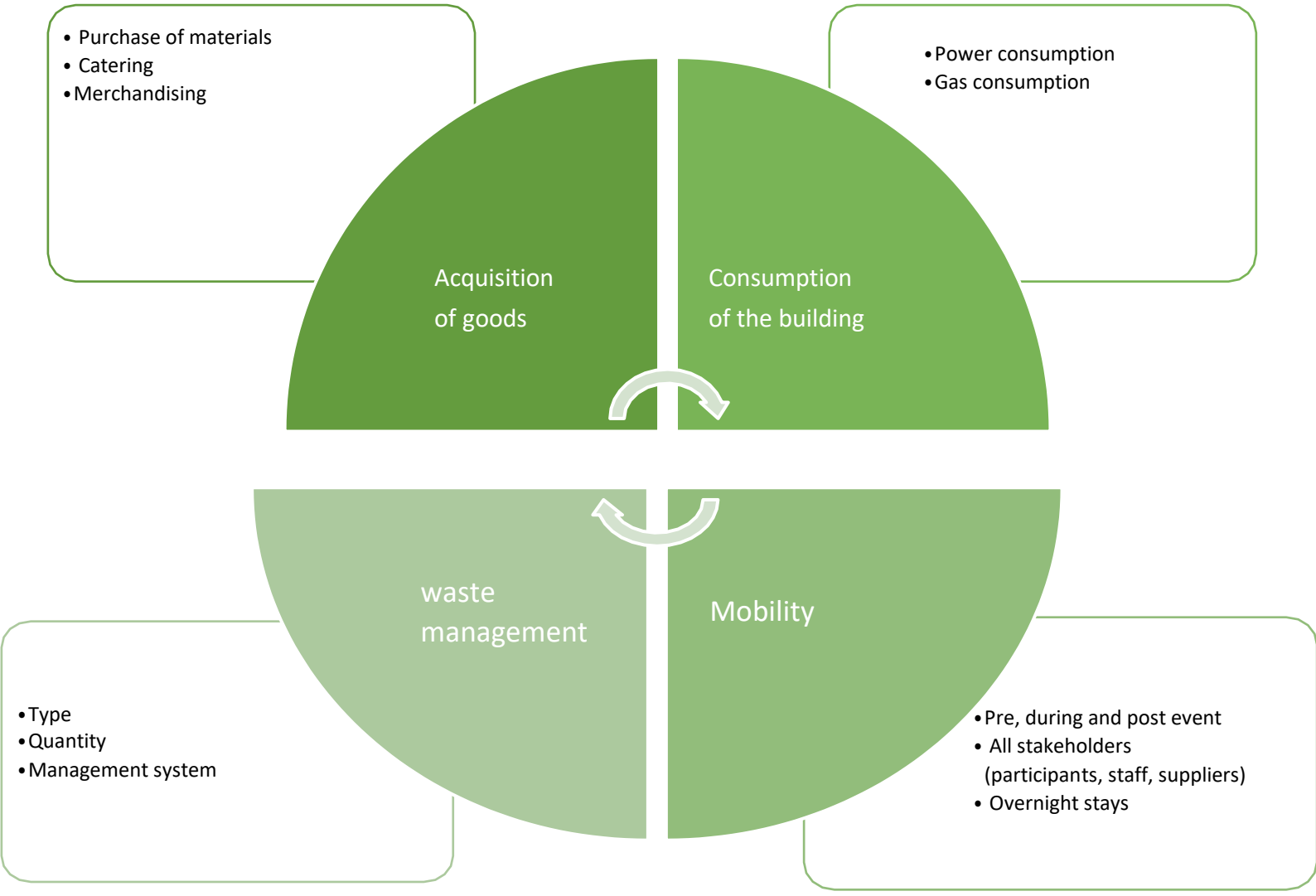

Figure 3 - Emission sources analyzed in the calculation

A. Procurement of materials and merchandising

In this phase, all those materials that have been manufactured exclusively for the event and that will subsequently be considered as waste due to their impossibility of reuse plus the merchandising acquired for the event are collected.

In order to calculate the emissions generated by this phase, a list of the materials and quantities purchased was obtained. Knowing this information and the main component of this data, the corresponding emission factor for each material was searched for in different official sources, obtaining the data shown in the following table:

Material	Component	Quantity (kg)	Emmisions(tCO_2e)
Carpet	Shyntetic fibre	87,36	0,27
Tarpaulins	PET	94,57	0,38
Vinyls	PVC	4,9	0,02
Gift Bags	Polyester	9	0,04
Protective bags	LDPE	1,26	0,003
T-Shirts	Cotton	18	0,40
Total	**-**	**215,1**	**1,11**

Table 1 - Materials procurement and merchandising data table

Below is a graph showing the percentage of material typologies obtained for the development of the event:

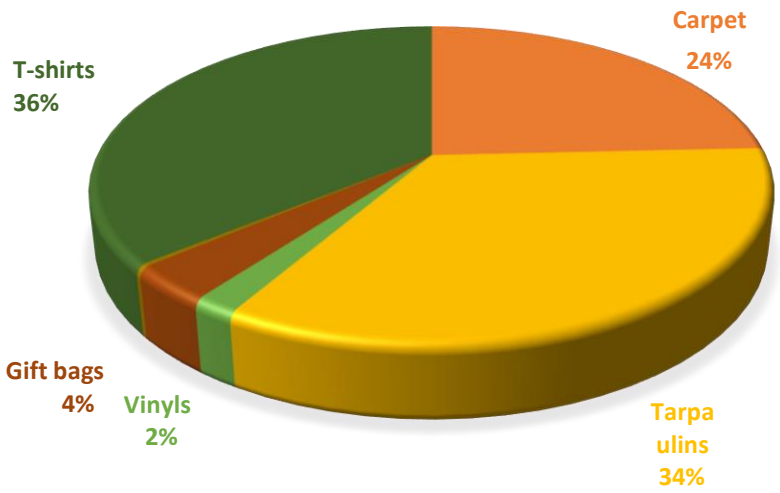

Figure 4 - Percentage of GHG emissions by type of material

About 215 kilograms of non-reusable materials were used for this event, mostly removable vinyls, tarpaulins and carpets, **emitting 1.11 tonnes of CO2e** as a result of their manufacture and use. The rest of the materials are used for other events. Below, we can see images of the merchandising purchased for the event.

Ilustration 6 - Gift Bag Junta de Andalucía

Illustration 7 - T-shirt 100% organic cotton

B. Catering

The contracting of the catering during the 4 days of the event can be broken down into two blocks:

- Internal catering for the event: The official caterer for FIBES is La Raza, who provided the coffee breaks and buffet lunches that were held on the 13th and 14th in these facilities.
- Dinners in external restaurants: Two optional dinners were held on the nights of the 12th and 13th at La Raza Puerto and Los Reales Alcázares.

It is worth mentioning that during the registration process participants were provided with a food questionnaire where they could choose between the following menu options: vegan, vegetarian or with meat (excluding beef and lamb from this option as they are the two types of meat with the highest associated emissions).

Within the scope of social responsibility, it is worth mentioning that the food produced by La Raza catering, and not presented to the public, is kept in the FIBES cold storage rooms, thus preserving its good condition and being donated later to soup kitchens.

Illustration 8 - Catering La Raza lunch buffet

The emission data obtained for this emission source can be seen below:

Type of catering	Nº people	Emissions (tCO_2e)
Coktail La Raza	250	1,18
Dinner Real Alcázar	270	1,27
Lunch Buffet	700	3,29
Coffee break	1400	6,58
Total		**5,73**

Table 2 - Data of the catering

The GHG emissions associated with this source are **5.73 tCO2e.** In the following figure we can see the percentage of emissions associated with each type of catering provided during the event:

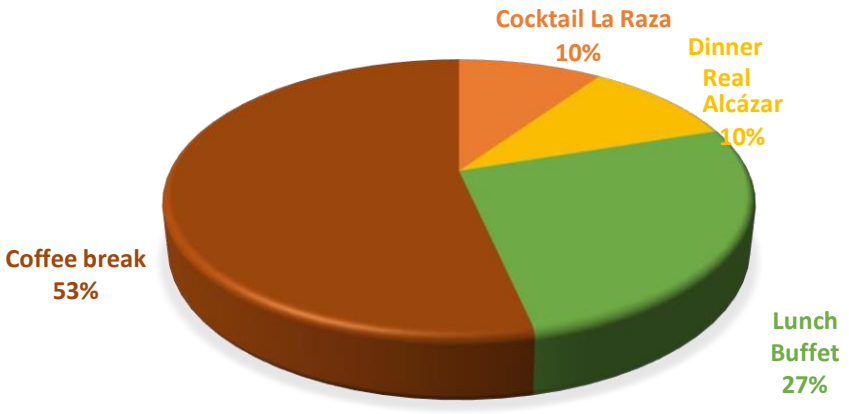

Figure 5 - Percentage of GHG emissions associated with each catering type

Coffee Breaks

Within the coffee break service, it is worth highlighting the use of thermo containers for coffee and hot water, thus avoiding the use of single-use capsules. Similarly, ceramic cups and steel cutlery were used in order to eliminate single-use utensils and thus reduce waste generation.

Ilustration 9 - Catering La Raza during coffee break

Dinner at the Restaurant La Raza Puerto

Finally, you can see some photographs taken during the dinner on the first night of the event.

Illustration 10 - Catering dinner at La Raza Puerto

C. *Electricity and natural gas consumption*

This section shows the consumption of electricity and natural gas during the conference days. The data used for this calculation is provided by the FIBES team, which obtains the daily consumption from the electricity and natural gas meters, allowing it to be differentiated by phases.

The consumption of both sources has been mainly for the use of lighting and heating in the conference rooms, and the use of electronic equipment.

Source	Phase	kWh	Nº of days	Emissions tCO_2e	
Electricity	Assembly	7.926	1	2,05	9,68
	Development	24.436	2	6,33	
	Dismantling	4.999	1	1,29	
Natural Gas	Assembly	1.872	1	0,34	0,57
	Development	1.240	2	0,23	
	Dismantling	0	1	0	
Total		**40.473**			**10,24**

Table 3 - Data of the electricity and natural gas

The emission factors used for the calculation are obtained from the Ministry of Ecological Transition and Demographic Challenge (MITERD), using one for natural gas and another for the general electricity mix.

10.24 tonnes CO2e have been generated by energy consumption, of which 9.68 tonnes CO2e are emissions from electricity consumption and 0.57 tCO2e from natural gas.

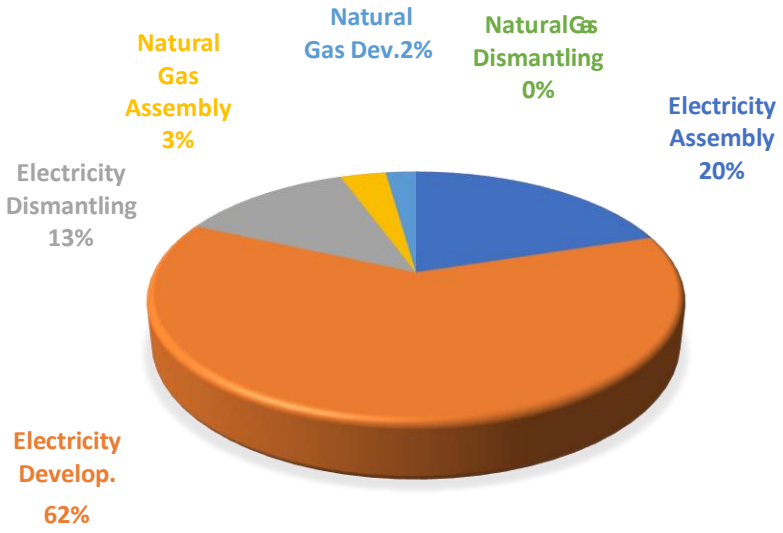

Figure 6 - Percentage of GHG emissions associated with energy use

As we can see in Figure 3, 64% of the emissions released by this source are produced in the development phase of the event, with 62% corresponding to electricity consumption and 2% to natural gas. The assembly and dismantling phases account for 22% and 16%, respectively.

D. Suppliers mobility

Supplier mobility refers to the emissions derived from their travel to the event venue.

In order to compile the data referring to this source, an online survey is carried out with the different suppliers in which questions are asked about the days they have attended, the means of transport used and the kilometers traveled each day (return journey).

Once the activity data is available, the emission factors for each one are looked up, and the calculation is made.

Phase	Transportation	Total KM traveled	Emissions (tCO_2e)	
Assembly	Gasoline car	784	0,145	0,253
	Diesel car	884	0,086	
	Diesel van	79	0,018	
	Train	80	0,002	
	Bus	20	0,002	
Development	Gasoline car	1.568	0,290	0,590
	Diesel car	1.528	0,258	
	Diesel van	138	0,032	
	Bus	96	0,010	
	Gasoline car	160	0,030	
Dismantling	Diesel car	260	0,044	0,086
	Van diesel	34	0,008	
	Train	80	0,002	
	Bus	20	0,002	
Total		**5.357**		**0,929**

Table 4 - Suppliers mobility data

The emissions generated by the suppliers' travel during all phases of the event (assembly, development and dismantling) amounted to **0.93 tonnes of CO2e** for a total of 5,357 kilometers travelled.

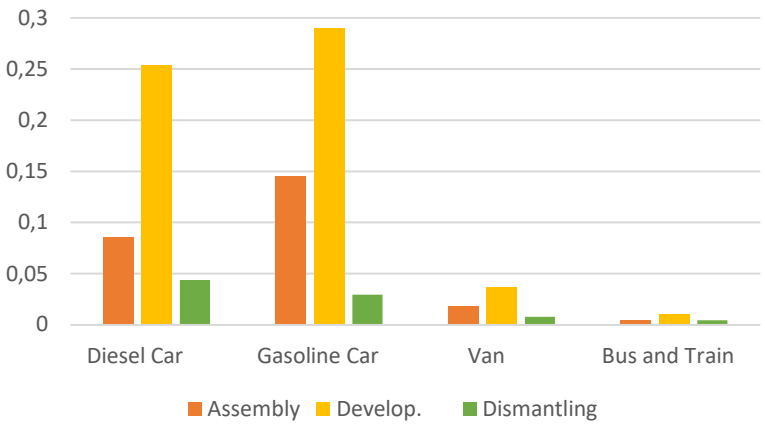

Figure 7 - GHG emissions associated with supplier mobility

E. Participants mobility

The participants' mobility at an event is always the largest source of emissions, as it involves the movement of hundreds of people in (usually) private vehicles. In the case of the GSTC, this source is even more considerable, as not only do approximately 200 people travel long distances by means of transport such as air travel.

In order to calculate the emissions from this source, the organizers have a list of the number of people, the place of origin, and the means of transport used. Knowing this data, the kilometers traveled by each participant and by type of vehicle can be extracted.

	Transportation	Total KM traveled	Emissions (tCO_2e)
Speakers	Plane	55.672	5,91
Leaders	Plane	84.734	8,26
Staff	Plane	47.774	4,64
Assistants	Plane	1.309.614	127,14
	Train	65.674	1,88
	Car	4.146	0,70
Total		**1.567.614**	**148,48**

Table 5: Table of mobility data of attendees

The mobility of participants generates **about 148 tons of CO2e,** being this the main source of emissions of the event. Figure 7 shows how the international mobility of attendees is responsible for 87% of these emissions, 86% of which are due to air travel and 1% to train travel. In the case of speakers and staff, emissions correspond to 13% of the total from this source.

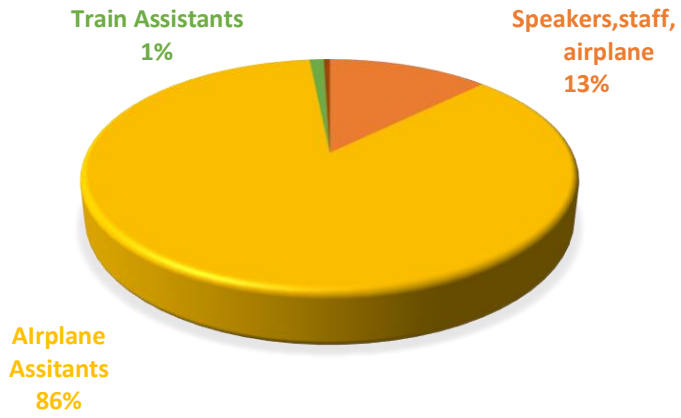

Figure 8 - Percentage of GHG emissions derived from participants' mobility

F. Mobility in the GSTC

In order to calculate the emissions derived from the mobility of the participants during the four days of the event, the percentage of people using public and private means of transport has been estimated.
FIBES, in its commitment to the environment, has provided all attendees with a list of public means of transport that can be used to reach the facilities, which provides information such as schedules and frequencies, the route and how to get from their hotels. This promotes the use of shared vehicles with a lower impact compared to the use of private vehicles such as cabs.

Transportation	Total KM	Emissions tCO_2e
Bus	2.010,32	0,15
Train	924	0,03
Taxi	899,64	0,19
Total	**3.833,96**	**0,37**

Table 6: Mobility data during the days of the event

In total, **370 kilograms of CO2e** were generated as a result of the movement of participants to FIBES and the activities organized during the days of the event.

As we can see in the figure below, 51% of the emissions from this source are due to the use of cabs, which are the least frequent and with the least kilometers traveled, but the most polluting because they are private vehicles.

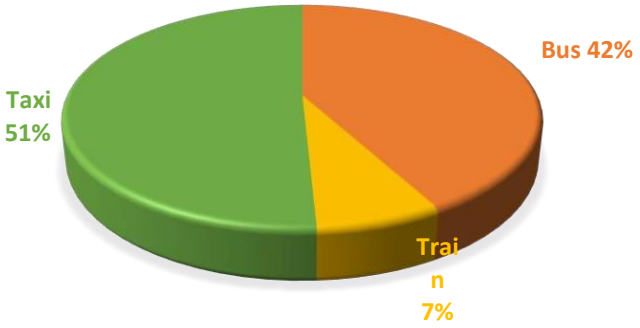

Figure 9 - Percentage of GHG emissions associated with mobility during the GSTC

G. Overnight stays

In order to study the emissions derived from the participants' accommodation, a list has been provided with the number of people, the nights they stay and the hotel. In total, it is estimated that about 178 people have stayed in hotels in the city, having an established collaboration with Meliá Sevilla and Meliá Lebreros, an average of 4 days.

Nº people	No. of nights average	Emissions (tCO_2e)
178	4,15	**5,17**

Table 7: Overnight stay data table

5.17 tons of CO2e have been generated as a result of the overnight stays of the participants in the event, being 90% due to the overnight stays of the attendees and 10% of the speakers, leader and staff.

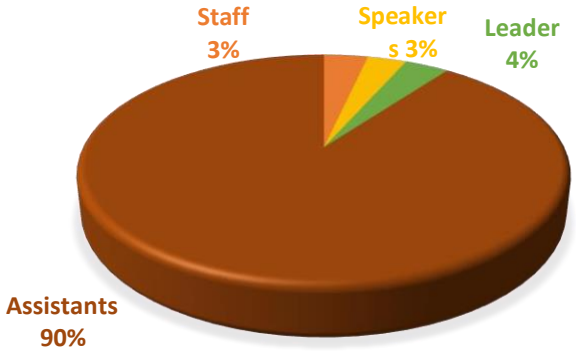

Figure 10 - Percentage of GHG emissions associated with the overnight stays of each type of guest

H. Waste generated

The waste generated during the GSTC events is of varied composition and origin, being able to differentiate between organic waste, derived from leftover food or napkins; cardboard waste, event posters, programs and cardboard boxes from the transportation of materials; or plastic waste.

Illustration 11 - Clean and mask management points

In order to estimate the waste generated by the event, data such as the number of containers and their capacity have been provided.

The data obtained from the collection of waste generated at the event are shown below:

Illustration 12 - Glass container

Tipología	Capacidad (Kg)	Emisiones (tCO_2e)
Organic	4 8 0	0,214
Containers	480	0,010
Paper and cardboard	2 4 0	0,005
Total	**1.200**	**0,229**

Table 8: Data on waste generated at the event.

In total, about 1,200 kilograms of waste were generated, emitting **230 kg of CO2e** into the atmosphere. Within this source, 93% of these emissions derive from the treatment of organic waste, 5% from packaging and only 2% from paper and cardboard.

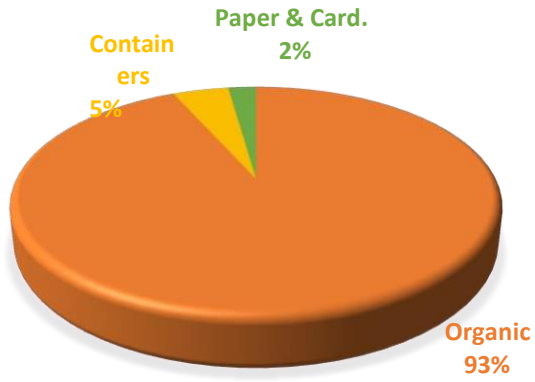

Figure 11 - Percentage of GHG emissions derived from waste management

Finally, there are images taken of various types of recycling containers that exist in Fibes for waste management:

Illustration 13 - Containers for organic matter (left) and paper/cardboard (right)

5. Results

This section shows the GHG emissions (tCO2e) generated by each of the phases of the event (assembly, development and disassembly).

As a result of the event, **172.27 tons of CO2e** were released into the atmosphere, with the development phase (December 13 and 14) accounting for 97% of the emissions, assembly (December 12) for 1.5%, disassembly (December 15) for 1% of the total emissions and the acquisition of materials for 0.5%.

As for the source with the greatest impact, the mobility of participants is responsible for 86% of total emissions, this result is the most common in this type of event, and even more so when it is an international event, with long-distance travel by plane. The second most common source of emissions is the consumption of electricity and natural gas, which represents 6% of GHG emissions, with a very notable disparity with respect to the main source of emissions. Finally, and in order of priority, emissions associated with catering (3.3%) and overnight stays (3%) are observed. The remaining sources, waste management and procurement of materials, account for less than 2% of emissions.

The following graph shows the aforementioned percentages:

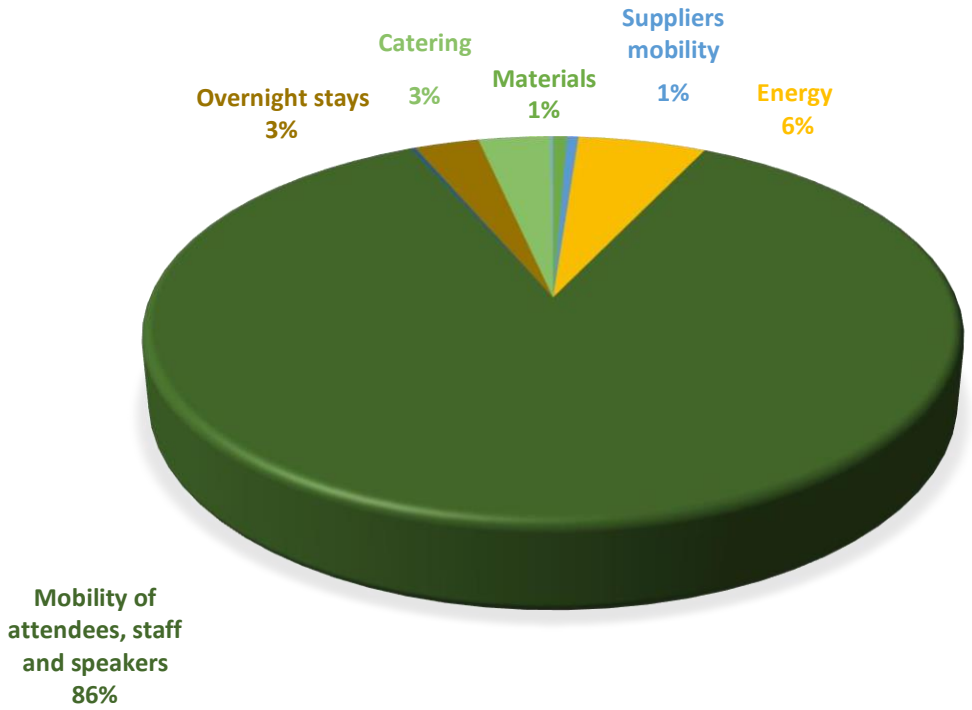

Figure 12 - Percentage of GHG emissions by source

Figure 14 - Event summary image

Below is a summary table showing the emission sources active in each phase of the event and the GHG emissions associated with each one.

Phase	Source of emission	Emissions (tCO_2e)
Materials	Carpeting, tarpaulins, bags and t-shirts	1,11
Assembly	Suppliers mobility	0,25
	Energy (electricity + natural gas)	2,39
Development	Mobility suppliers	0,59
	Mobility of attendees, staff, speakers	148, 48
	Mobility during the GSTC	0,37
	Overnight stays	5,17
	Catering	5,73
	Energy (electricity + natural gas)	6,55
Disassembly	Mobility suppliers	0,09
	Energy (electricity + natural gas)	1,30
	Waste generated	0,23
Total		**172, 27**

Table 9 - Summary table of emission sources by phase.

Materials Phase:

The materials generated for the event emit about one ton of CO2e, of which T-shirts and tarpaulins are responsible for 36% and 34%, respectively, followed closely by carpeting with 25%.

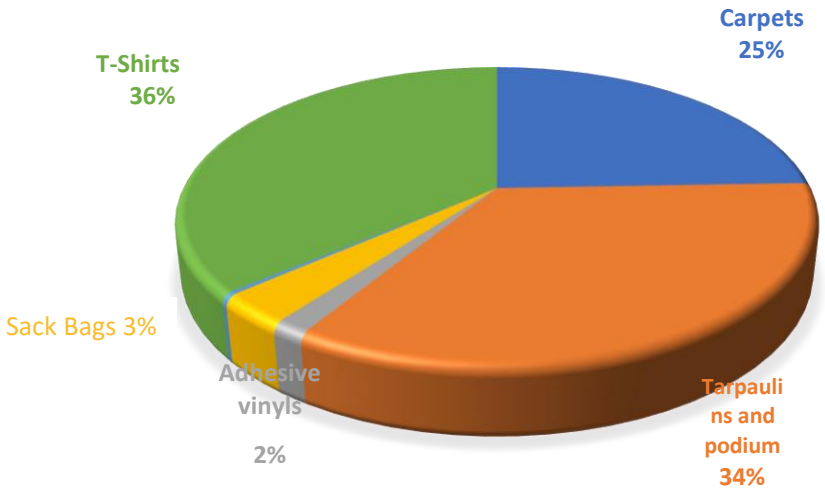

Figure 13 - Percentage of GHG emissions by material

Assembly Phase:

During this phase, 2.64 tCO2e were released into the atmosphere, of which 77% corresponded to electricity consumption, 13% to natural gas consumption, and 10% to supplier mobility. This is the second most polluting phase, behind only the development phase of the event.

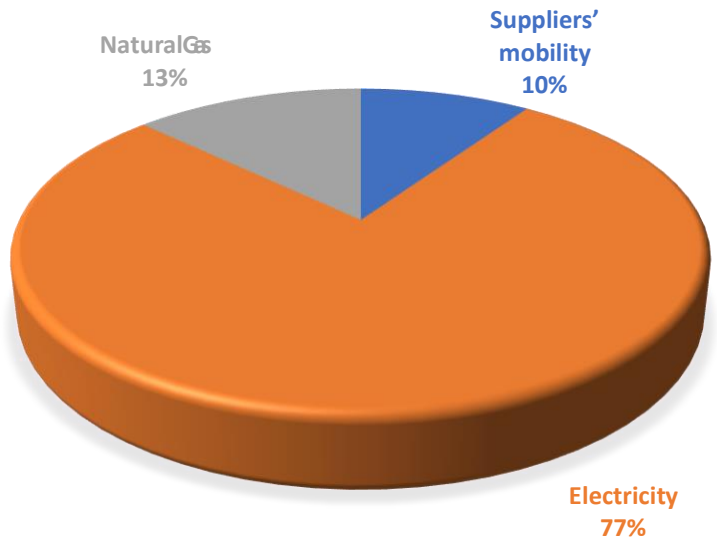

Figure 14 - Percentage of GHG emissions derived from the assembly phase

Development phase:

This phase refers to December 13 and 14, when the Global Conference on Sustainable Tourism was held at the Seville Conference and Exhibition Center, FIBES. It is the main responsible for the carbon footprint because in this stage the mobility of the attendees is collected, a source of great importance when taking into account the dimensions and characteristics of the event.

In total, 166.89 tCO2e are emitted, equivalent to 97% of the carbon footprint emissions.

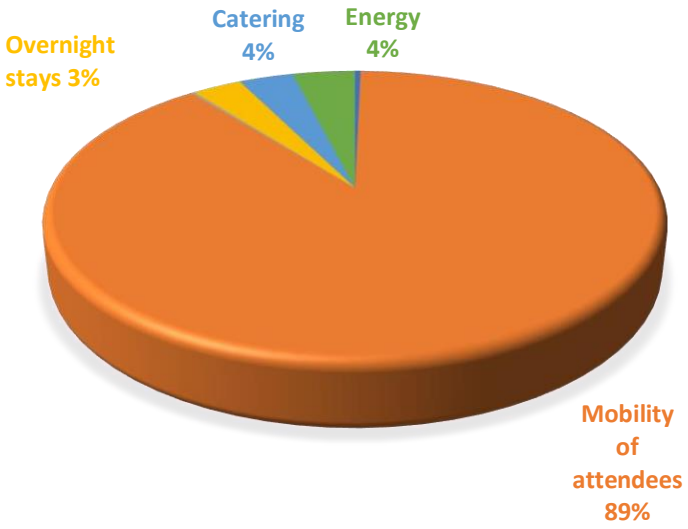

Figure 15 - Percentage of GHG emissions from development phase

Disassembly Phase:

During this phase, 1.62 tCO2e were released into the atmosphere, of which 81% corresponded to electricity consumption, 14% to the management of waste generated and 5% to the mobility of suppliers. There was no natural gas consumption in this phase.

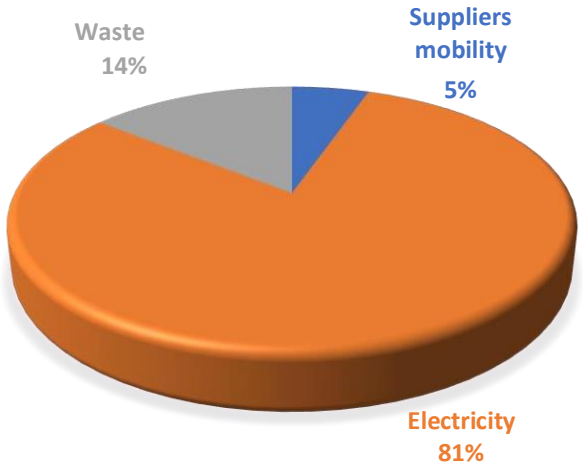

Figure 16 - Percentage of GHG emissions associated with disassembly phase

6. Proposed best practices for action

The first step to carry out a sustainable event is the calculation of the carbon footprint, once we have this we must go further and analyze the measures that have been carried out to determine their effectiveness and detect weaknesses to propose a series of improvements to reduce emissions and even offset them to be a carbon neutral event.

To carry out a GHG Reduction Plan and reduce the event's contribution to climate change, the following steps must be followed

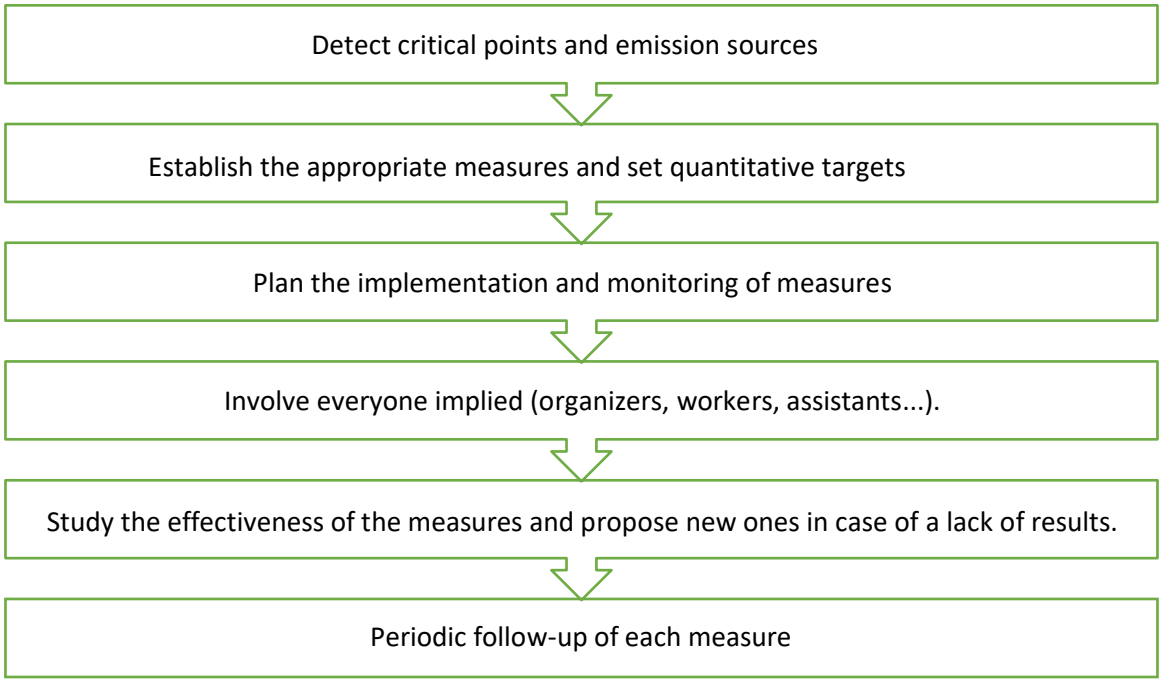

Figure 17 - Steps to develop an Emission Reduction Plan

Therefore, once the most significant emission sources have been identified, a package of measures to reduce them is developed. Some of the best practices implemented during the GSTC Sustainable Tourism 2022 event that are proposed to be replicated or actions not implemented that should be considered in future events are:

Measure 1	Energy efficiency plan
Phase	Assembly, celebration and disassembly
Source	Electricity consumption
Scope	Electricity consumption
Description	The energy consumption of the event accounted for almost 6% of the emissions associated with the event. Although this percentage does not represent one of the main sources, it is important to highlight that it is a source associated with the physical space of FIBES, where events take place on a regular basis and the implementation of improvement measures in the energy field can lead to a transversal improvement through its events.
Best practices applied	In order to reduce energy consumption, FIBES implements the following best practices: - Replacement of lighting in the main facilities with energy-saving light bulbs (LEDs). - Installation of capacitor banks to increase energy efficiency - Installation of autonomous air conditioning systems at FIBES I - Replacement of equipment for air conditioning cooling production, improving energy efficiency.
Proposed Actions	Following this line of action, and in order to improve, a series of measures are proposed: - Hiring a 100% "clean" electric company with a Guarantee of Renewable Origin (GoO). - Installation of photovoltaic panels for renewable energy production. - Continue equipping the facilities with energy-saving light bulbs (LEDs). - Modification of the ignition system to further optimize consumption and equipment lifetime - Installation of autonomous air-conditioning systems in FIBES II

Measure 2	Sustainable material procurement
Phase	Pre-event
Source	Procurement of materials
Scope	Environmental, social, economic
Description	The purchase of materials accounted for only 0.6% of GHG emissions thanks to the good practices implemented when acquiring materials for this event. With the correct application of good practices, this source of emissions is not usually one of the main ones in this type of events (congresses, lectures, fairs, etc.)
Best practices applied	- Make estimates of the consumption needed for each event in order to reduce the unnecessary purchase of materials and the potential generation of waste. - Avoid purchasing plastic materials and encourage the purchase of recycled and/or recyclable materials. - Purchase from local suppliers - Use of pitchers, metal tableware, ceramic cups and thermoses to avoid waste generation (capsules, plastic bottles, single-use cutlery, etc.). - Installation of water dispensers to refill multi-purpose bottles. - Recycled paper napkins - Vegan, vegetarian or carnivorous options, but without veal and lamb
Proposed Actions	To reduce emissions associated with the production of event-specific materials, it is advisable to implement the following practices as much as possible: - Establishment of reusable materials between events (e.g., stage platforms, standard FIBES roll-ups where stickers can be used, etc.). - Donation of non-reusable materials in good condition (for example: T-shirts, notebooks, pens, etc.)

Measure 3	Sustainable waste management
Phase	Assembly, celebration and disassembly
Source	Waste management
Scope	Environmental, social
Description	The management of waste generated at the event accounted for 0.1% of the emissions associated with the event. Although the percentage is minimal, it is a source that occurs in every event, so it is important to develop a series of actions that allow us to reduce its impact on the environment.
Best practices applied	In order to reduce emissions associated with the management of waste generated in the different stages of an event, FIBES has a waste management plan through which they separate the waste generated in their corresponding bins or containers and manage the subsequent collection for recycling. Likewise, FIBES is willing to donate the surplus of food not served at the events to social canteens whenever possible. This is a good social and environmental practice, as it avoids the generation of methane (CH4) through the decomposition of organic matter.
Proposed Actions	It is suggested to maintain the good practices applied and the continuous updating of the waste management plan in accordance with the corresponding updates in environmental legislation. Finally, it is also requested the conversion of waste garbage cans to be used by more clean points within the FIBES areas.

Measure 4	Sustainable mobility
Phase	Assembly, celebration and disassembly
Source	Mobility associated with participants, staff and suppliers
Scope	Environmental
Description	Participants Mobility To reduce emissions associated with participants' mobility during the event, FIBES has generated a sustainable mobility manual that provides information on public transportation options from the participants' overnight stay to the event's location and/or activities. Suppliers Mobility FIBES and GSTC have relied on local personnel, so that the distances traveled are shorter and thus GHG emissions are reduced.

Measure 5	Collaboration with conscious hotel chains
Phase	Celebration
Source	Overnight stays
Scope	Environmental
Description	Overnight stays are the fourth most important source of this event (after participants' mobility, energy, and catering), releasing about 5 tCO2e as a result of the accommodation of about 200 people mobilized.
Best practices applied	During the celebration of this event, FIBES together with GSTC have created a partnership with the Meliá hotel chain, having a high percentage of its participants staying at the Meliá Sevilla and Meliá Lebreros hotels. This hotel chain has implemented a variety of environmental actions in order to reduce the carbon footprint of its guests.
Proposed Actions	As good practices, it is advisable to continue this type of collaboration in future events, to promote the calculation of their carbon footprint to the hotels with which they collaborate and thus achieve the specific emission factor of the same. Finally, it is advisable to use hotels close to the venue of the events to promote walking. Finally, the use of hotels close to the venue of the events is recommended to promote mobility on foot or by public transport.

7. Compensation

After the implementation of the best practices mentioned in the previous section, and the reduction of GHG emissions associated with them, carbon credits have been purchased to offset those that could not be avoided. This compensation has been made through a United Nations project whose objective is the creation of a 500 MW combined cycle power plant based on natural gas in Hazira, India.

This project has associated benefits associated with sustainable development along the following lines:

- Contribution to environmental welfare:

  The project activity also contributes to the conservation of fossil fuels that are being depleted, such as coal, oil, and natural gas which were predominantly used for power generation. The project does not use coal for electricity generation, so no greenhouse gases are emitted through this activity.

- Contribution to economic welfare:

  The project creates employment opportunities, which will increase the economic level of the people residing near the project activity.

- Contribution to technological welfare:
  The project is a natural gas-fired combined cycle power plant and will improve the efficiency of power generation.

Illustration 15 - Hazira combined-cycle power plant, India

Phase	Emission Source	Data	Emission Factor	Units	Data Source
Materials	Carpet	Synthetic fibers	3.104,73	Kg CO_2e/ton	DEFRA
	Tarpaulins	Polyester	4.032,39	Kg CO_2e/ton	DEFRA
	Vinyls	PVC	3.413,08	Kg CO_2e/ton	DEFRA
	Gift bags	Polyester	4.032,39	Kg CO_2e/ton	DEFRA
	Protective bags	LDPE	2.600,64	Kg CO_2e/ton	DEFRA
	T-Shirts	Cotton	22.310	Kg CO_2e/ton	DEFRA
Assembly Development Disassembly	Energy	Natural Gas	0,182	Kg CO_2e/kWh	MITECO[2]
		Electricity	0,259	Kg CO_2e/kWh	MITECO
	Mobility	City Bus	0,1078	kgCO_2e/pax.km	DEFRA
		Bus	0,0273	kgCO_2e/pax.km	DEFRA
		Train	0,0286	gCO_2e/pax.km	DEFRA
		Gasoline Car	0,1847	kgCO_2e/km	DEFRA
		Diesel Car	0,1680	kgCO_2e/km	DEFRA
		Taxi	0,2083	kgCO_2e/km	DEFRA
		Diesel Van	0,2316	kgCO_2e/pax.km	DEFRA
		Airplane	0,24590	kgCO_2e/pax.km	DEFRA[3]
Development	Overnight stays		7	KgCO_2e/hab.noc	DEFRA
	Catering		4,7	Kg CO_2e/menú	DEFRA
Disassembly	Waste	Organic	446,204	kg CO_2e/ton	DEFRA
		Packaging	21,280	kg CO_2e/ton	DEFRA
		Paper and cardboard	21,280	kg CO_2e/ton	DEFRA

2 Ministry of Ecological Transition and Demographic Challenge (MITECO)

3 United Kingdom Department for Environment, Food and Rural Affairs (DEFRA)