



Sustainability

Summary of the 2014 FIFA World Cup Brazil™ Carbon Footprint





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Acronyms and abbreviations

BRT	Bus Rapid Transit
CO₂	Carbon dioxide
CO₂e	Carbon dioxide equivalent
FCC	FIFA Confederations Cup
FIFA	Fédération Internationale de Football Association
FWC	FIFA World Cup
GHG	Greenhouse Gas
GWP	Global Warming Potential
IBC	International Broadcast Centre
LOC	Local Organizing Committee
N₂O	Nitrous Oxide
PMA s	Participant Member Associations
tCO₂e	tonnes carbon dioxide equivalent

1. INTRODUCTION

The FIFA World Cup is the world's largest single-event sporting competition in the world. While it brings important direct and indirect economic and social benefits to the host country its impacts on society and environment are indisputable.

As stated by FIFA Secretary General, Jérôme Valcke, staging a world-class event of such global magnitude requires careful consideration of all aspects to ensure a balanced approach and sustainable outcome (FIFA, 2012). FIFA and the Local Organizing Committee (LOC) take this responsibility very seriously and are committed to deliver a sustainable 2014 FIFA World Cup™ in Brazil. This commitment is reflected in a strategy and action plan to reduce the event impacts. The 2014 FIFA World Cup™ Sustainability Strategy aims at organizing and implementing the 2014 FIFA World Cup™ in a sustainable manner by reducing the negative and increasing the positive impacts of the event on society and the environment. One of its cornerstones is to have a clear understanding of the volume of greenhouse gas (GHG) emissions caused by event preparation and staging.

The 2006 FIFA World Cup in Germany was the first tournament in which measurable environmental targets were set and monitored. Green Goal was introduced as the environmental programme to reduce the negative environmental impacts of the tournament (FIFA, 2006). For the first time in the history of football, environmental protection was given official project status at the FIFA World Cup, plotting a new course for the football world.



The South African LOC took FIFA's environmental commitment on board and created an environment unit to manage the Green Goal activities as an important part of the legacy of the 2010 FIFA World Cup South Africa™. They based their programme on experiences from 2006. (FIFA, 2010).

Building on the project from 2006, for the FIFA Women's World Cup 2011™ in Germany, the Organizing Committee implemented an ambitious environmental protection programme for the tournament (FIFA, 2011). As a clear sign of its growing commitment to the environment following Germany and South Africa, FIFA decided to include environmental matters and environmental protection as a mandatory part of future bidding agreements starting with the recent bidding process for the FIFA World Cup™ in 2018 and 2022. FIFA requested comprehensive information on plans to avoid, reduce and offset negative environmental impacts (FIFA CSR, 2013).

In that context, the 2014 FIFA World Cup Brazil™, from now on referred to as **2014 FWC Brazil**, is an important stepping-stone in that process as it is expected to help build the basis for sustainable FIFA World Cups.

The carbon footprint of FIFA World Cups has been quantified in 2006, 2010 and 2011 by various stakeholders, including FIFA, the LOC and third parties (FIFA, 2006; Econ Pöyry, 2009; and FIFA, 2011). Each of these studies has used its own set of organizational and operational boundaries and reporting periods. As a step towards creating a standard framework that can be used as a benchmark for future FIFA World Cups and other sporting events, FIFA is proposing for the 2014 FWC Brazil carbon footprint a methodology that incorporates key concepts from recognized GHG emissions accounting and reporting protocols but also builds upon key findings from other previous studies as discussed in the methodology section of this footprint.

Another important aspect introduced by this carbon footprint is that it includes emissions not only for the staging events of the 2014 FIFA World Cup Brazil™ but also for the 2013 FIFA Confederations Cup Brazil and major preparation events starting in July 2011 with the FWC Preliminary Draw until the end of September 2014.

This document presents the approach chosen for and main results of the ex-ante carbon footprint that estimates the GHG emissions from preparation and staging events of the 2014 FIFA World Cup Brazil™.

2. METHODOLOGY

At present, a general standardized methodology for calculating the carbon footprint associated with major sporting events does not exist. Prior events, such as the 2010 South Africa World Cup (Econ Pöyry, 2009) and the 2012 London Olympic Games (London 2012, 2010) have introduced pragmatic methodologies, which utilize portions of the GHG Protocol Corporate Accounting Standard (GHG Protocol) and ISO 14064.1 (ISO, 2006). The 2012 London Olympic Games also utilized PAS 2050 (PAS 2050, 2011) to incorporate the footprint associated with the lifecycle of some products and structures. Other available standards focused on sustainability in events such as the BS 8901 (BS 8901, 2010) and ISO 20121 (ISO, 2012) have been deemed too general for purposes of this analysis.

This present carbon footprint study relies on the GHG Protocol as its primary foundation and incorporates further technical guidance from ISO 14064.1. Additionally, this study builds upon important findings introduced by both the 2010 FIFA World Cup in South Africa and the London 2012 Olympic Games.

Consistent with the accounting and reporting principles of the GHG Protocol and ISO 14064.1 and the foundations of the 2014 FIFA World Cup™ Sustainability Strategy, the primary methodological guiding principles of this carbon footprint are:

1. Produce a complete, relevant, consistent, accurate and transparent report;
2. Account for direct and indirect emissions (Scopes 1, 2 and 3);
3. Report, as far as possible, emissions from all Kyoto Protocol greenhouse gases;
4. Set the project boundaries widely to incorporate emissions under FIFA/LOC's operational control and/or direct influence;
5. Set clear inclusion/exclusion criteria to decide on what is included and what is not included in the scope;
6. Identify a consistent, relevant and good quality set of carbon emission factors that are to the extent possible representative of the location and setting of the event;
7. Provide the necessary information for the design of GHG emission mitigation and offsetting strategies;
8. Clearly document the uncertainty levels regarding the data sources.

Boundary setting is a critical activity in assuring that a carbon footprint is a true representation of an organization's or an event's GHG emissions. It is also an important step towards complying with some of the GHG Protocol's accounting and reporting principles. Assuring **Relevance** and **Completeness** will depend directly on a clear understanding of "what is" and "what is not" included in the scope of the carbon footprint.

This is not an easy exercise for sporting events of the complexity of the 2014 FWC Brazil, especially considering that there are no specific methodologies for such kinds of activities. Experience from prior events provides some clarity on how to better apply the GHG Protocol guidelines and properly set boundaries. However, recognizing that the GHG Protocol has been designed for corporate emissions accounting, some translation is needed to apply the Protocol to a sporting event such as the 2014 FIFA World Cup Brazil™.

Section 3 next presents detailed discussion on boundary setting for the 2014 FWC Brazil.

3. SCOPE & BOUNDARIES

No protocol or standard pre-define what is to be included or excluded in a carbon footprint. That has to be done in direct consonance with the objectives of the given footprint.

As discussed in the introduction of this study, the primary objective of this carbon footprint is to estimate the GHG emissions from preparation and staging events of the 2014 FIFA World Cup Brazil™. FIFA's primary focus is to estimate emissions resulting from the activities directly controlled by or under direct influence of FIFA and the LOC – the Brazilian Local Organizing Committee (from now on jointly referred to as FIFA/LOC).

For a full comprehension of the boundary setting rationale, it is important to understand how the 2014 FIFA World Cup Brazil™ is organized. The event is divided into three (3) different phases as follows:

- **Preparation Phase** – the Preparation Phase includes all activities and events in preparation for both the 2014 FIFA World Cup™ and 2013 FIFA Confederations Cup. Such activities and events include the draws and associated banquets, general operations from FIFA/LOC, and other smaller preparatory events and activities;
- **2013 FIFA Confederations Cup Staging Phase** (from now on referred to as **FCC Staging**) – the FCC Staging Phase includes all sixteen (16) Confederations Cup matches, the Football for Hope Forum 2013 and the FCC banquet;
- **2014 FIFA World Cup™ Staging Phase** (from now on referred as **FWC Staging**) – the FWC Staging Phase includes all sixty-four (64) World Cup matches, the FIFA Fan Fests in Brazil, the International Fan Fests, the Football for Hope Festival 2014 and the FWC banquet, among other smaller events and activities.

With the objectives and organization outlined above in mind the next step is to define the organizational and operational boundaries of the carbon footprint and set clear inclusion/exclusion criteria to decide on what is included and what is not included in the scope.

3.1 Organizational and Operational Boundaries

3.1.1 Organizational Boundaries

Organizational boundaries define those businesses and units that constitute the company, organization or event for the purpose of accounting and reporting GHG emissions. For an event carbon footprint, the organizational boundaries are set based upon the organizational units required to prepare and stage the event.

The GHG Protocol provides two main approaches for setting organizational boundaries: **equity share** and **control**. The equity share approach is appropriate for accounting corporate emissions as it allows companies to account for emissions according to their equity participation in a given operation. On the other hand the control approach allows for allocation of emissions according to the level of control that a company has over a given operation, independently of its equity participation. For practical matters, control is further divided into financial and operational control.

According to the GHG Protocol, “a company has financial control over the operation if the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities.” Operational control is defined to exist when a company, despite the fact of not having financial control, “has the full authority to introduce and implement its operating policies at the operation.”

The selection of a boundary setting approach for the 2014 FWC Brazil is rather more complex as compared to that for a standard corporation. Since FIFA/LOC does not have equity participation in any of the venues used to host the events, the equity share approach does not apply. The financial control approach is valid but would not allow for the inclusion of all activities controlled by FIFA/LOC. In many cases, during preparation and staging events, FIFA/LOC will have operational control over venues that are not necessarily financially controlled by FIFA/LOC. A good example is the stadiums during the 2014 FWC staging. FIFA/LOC will have operational control over the stadiums during its exclusivity period even though it will not have financial control over them.

Therefore, the operational control approach is selected for the 2014 FWC Brazil, as it is the one that best meets the specific needs of the event and will provide for a more relevant and complete carbon footprint.

As a result, preparation and staging events (and activities) over which FIFA/LOC has operational control are included within the organizational boundaries for the 2014 FWC carbon footprint as illustrated in Figure 3.1.

3.1.2 Operational Boundaries

Once the organizational boundaries are set, the next step is to identify the emission sources within the controlled operations. That task demands a comprehensive understanding of the operations and involvement of FIFA/LOC staff at different organizational levels. This understanding is required to assure that sources are complete and properly identified and to ensure that emissions are properly categorized as direct or indirect emissions.

An operational boundary defines the emissions associated with the operations and activities to be reported, categorizing them as direct and indirect emissions.

As defined by the GHG Protocol, “direct emissions are emissions from sources that are owned or controlled” by the organization. These are referred to as Scope 1 emissions. The GHG Protocol defines indirect emissions as “emissions that are a consequence of the activities of the organization but occur at sources owned or controlled by another organization.” Emissions from purchased electricity are defined as Scope 2 emissions, while other indirect emissions, such as emissions from transport and accommodation of spectators, are defined as Scope 3 emissions.

The established organizational and operational boundaries together constitute the 2014 FWC Brazil’s carbon footprint boundary as illustrated in Figure 3.1.

Figure 3.1: Organizational and Operational Boundaries

FIFA/LOC	
Organizational Boundaries	
<p>Preparation Events</p> <ul style="list-style-type: none"> • 2014 FWC Preliminary Draw event & banquet • 2013 FCC Draw event & banquet • 2014 FWC Final Draw event & banquet <p>FCC Staging Events</p> <ul style="list-style-type: none"> • 2013 FIFA Confederations Cup Matches • Football for Hope Forum 2013 • FCC Banquet 	<p>FWC Staging Events</p> <ul style="list-style-type: none"> • 2014 FIFA World Cup™ Matches • Football for Hope Festival 2014 • FIFA Fan Fests • International Fan Fests¹ • FWC Banquets
Operational Boundaries	
<p>Transportation</p> <ul style="list-style-type: none"> • International, Inter-city, and Intra-city transport for attendees² <p>Accommodation</p> <ul style="list-style-type: none"> • Accommodation for attendees <p>Venues</p> <ul style="list-style-type: none"> • Venues for preparation and staging events • Temporary facilities • FWC team base camps • Venue specific training sites • Venue specific team hotels • International Broadcast Centre <p>Cross-Phase Activities³</p> <ul style="list-style-type: none"> • Media Infrastructure (TV production and online/printed media) • FIFA/LOC operations • Logistics • Merchandise production 	

1 It is not yet confirmed where and when exactly International Fan Fests are going to happen. Estimations were made according to previous FIFA competitions.

2 Attendees include spectators, FIFA/LOC personnel, venue operations personnel, Participant Member Associations, referees, volunteers, among others.

3 Cross-phase activities are those common to all 3 phases and that remain active throughout and/or between the 3 phases

3.2 Reporting Period

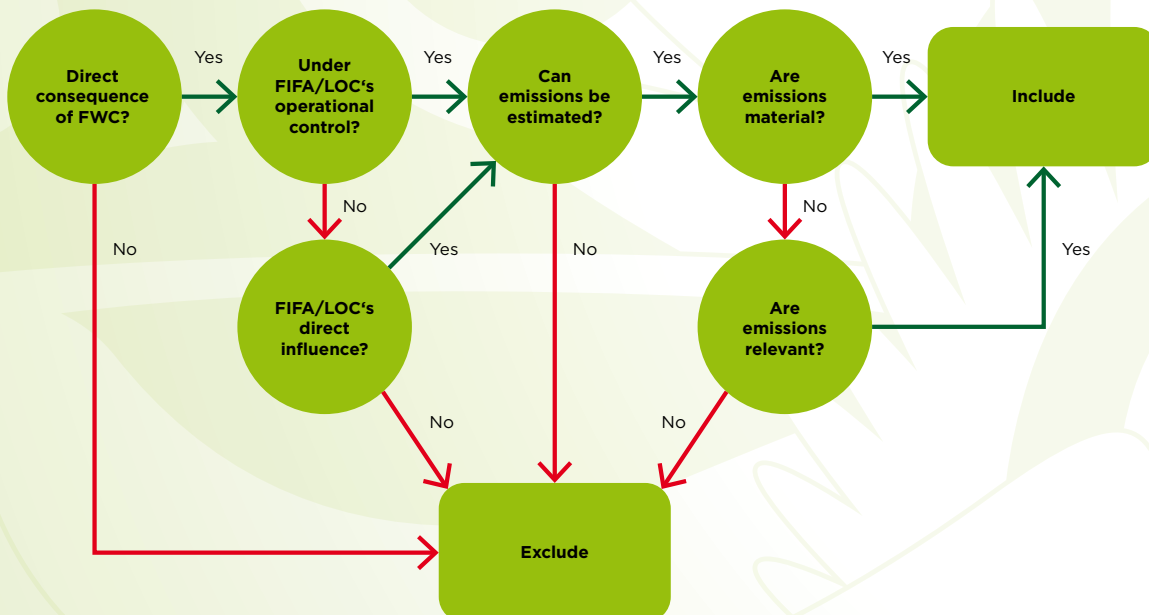
In order to be consistent with the project boundaries set for the 2014 FWC Brazil, including its three (3) different phases (Preparation, FCC Staging and FWC Staging), and to consider a full set of emission sources, the reporting period for this carbon footprint comprises the period between July 2011 and the end of September 2014, having as a starting milestone the FWC Preliminary Draw that took place in the Marina da Gloria, Rio de Janeiro.

3.3 Inclusion/Exclusion Criteria

As discussed in Section 2 - Methodology, a clear determination of which emission sources are in and which ones are out of the scope of the project is vital for the relevance and completeness of the 2014 FWC Brazil carbon footprint. Given the global proportion, magnitude and complexity of the event and the multiple interfaces it has with other initiatives by the Brazilian government and the host cities' governments, this becomes a challenging task and as such demands the establishment of a clear set of criteria to support the inclusion or exclusion of emission sources in the scope of the footprint.

Figure 3.2 illustrates the process that supports the decisions of “what is in” and “what is out” of the scope of the 2014 FWC Brazil carbon footprint.

Figure 3.2: Inclusion/Exclusion Decision Process



In general lines the decision process proposes that an emission source should be included if:

- It is under FIFA/LOC’s operational control;
- FIFA/LOC can exert direct influence, or;
- It is considered critical by key stakeholders.

For the avoidance of doubt, we introduce next key concepts associated with the interpretation of the decision process presented in Figure 3.2.

Direct consequence: Emissions that occur as a result of the preparation and staging events for the 2014 FWC are a direct consequence of the 2014 FWC.

Operational control: Operational control is one of the consolidation approaches defined by the GHG Protocol and the one selected by FIFA/LOC for the 2014 FWC Brazil boundary setting. FIFA/LOC has operational control when FIFA/LOC has the full authority to introduce and implement its own operating practices and policies at the event (or operation).

Direct influence: FIFA/LOC's direct influence is determined by procurement and branding requirements as well as by areas within FIFA/LOC's operational control. FIFA/LOC's influence on the decision processes can directly impact associated emissions.

Materiality: The GHG Protocol notes, "Information is considered to be material if, by its inclusion or exclusion, it can be seen to influence any decisions or actions taken by users of it. A material discrepancy is an error (for example, from an oversight, omission or miscalculation) that results in a reported quantity or statement being significantly different to the true value or meaning" (GHG Protocol).

Relevance: Emissions related to FIFA/LOC's core operational activities and mission and those important according to key stakeholders' or public perception are deemed to be relevant, regardless of their materiality.

3.3.1 Included Sources

Each of the preparation and staging events within the organizational boundaries will have emissions from one or more sources identified in the operational boundaries. The sources identified in the operational boundaries, in turn, often have one or more primary sources, such as electricity utilization, waste generation, or logistics as illustrated in Figure 3.3: Summary of Included Sources. These primary sources may be direct (Scope 1) or indirect (Scope 2 or Scope 3) emissions sources for FIFA/LOC.

It is important to note that FIFA/LOC's offices and general logistics are also included, although they are not attributed to a specific preparation or staging event, but to the preparation of the 2014 FWC Brazil as a whole.

It is also important to highlight that construction, operation and demobilization of temporary facilities to support different events of the 2014 FWC Brazil are included because, differently than construction of new public infrastructure and construction or improvement of stadia, these facilities are not permanent, will be built exclusively to serve the events, and will be demobilized after the staging of the events.

Figure 3.3: Summary of Included Sources

Phase	Event	Emissions Sources	Type of Source*
Preparation	<ul style="list-style-type: none"> • 2014 FWC Preliminary Draw • 2013 FCC Draw • 2014 FWC Final Draw • Banquets 	<ul style="list-style-type: none"> • Venues for preparation events • Int'l, inter-city, and intra-city transport for attendees • Accommodation for attendees • FIFA/LOC Offices & headquarters • Logistics • Merchandise production • Dedicated fleet of vehicles 	<ul style="list-style-type: none"> • Energy production • Electricity utilization • Refrigerant gases • Waste/wastewater treatment • Food & beverage • Logistics • Car • Bus/Coach • Train/Subway • Clean transportation • Plane
FCC Staging	<ul style="list-style-type: none"> • 2013 FCC Matches • Football for Hope Forum 2013 • Banquet 	<ul style="list-style-type: none"> • Venues for staging events • Temporary facilities • Venue specific team hotel • Venue specific training sites • Int'l, inter-city, and intra-city transport for attendees • Accommodation for attendees • FIFA Media Centres • TV production • Online/printed media • FIFA/LOC offices & HQ • Logistics • Merchandise production • Dedicated fleet of vehicles 	<ul style="list-style-type: none"> • Energy production • Electricity utilization • Refrigerant gases • Waste/wastewater treatment • Food & beverage • Logistics • Car • Bus/Coach • Bus Rapid Transit • Train/Subway • Clean transportation • Plane
FWC Staging	<ul style="list-style-type: none"> • 2014 FIFA World Cup™ Matches • Football for Hope Festival 2014 • FIFA Fan Fests • International Fan Fests • Banquet 	<ul style="list-style-type: none"> • Venues for staging events • Temporary facilities • Team base camps • Venue specific team hotel • Venue specific training sites • Int'l, inter-city, and intra-city transport for attendees • Accommodation for attendees • FIFA Media Centres • Int'l Broadcast Centre • TV production • Online/printed media • FIFA/LOC offices & headquarters • Logistics • Merchandise production • Dedicated fleet of vehicles 	<ul style="list-style-type: none"> • Energy production • Electricity utilization • Refrigerant gases • Waste/wastewater treatment • Food & beverage • Logistics • Car • Bus/Coach • Bus Rapid Transit • Train/Subway • Clean transportation • Plane

* Not all events/activities will have all types of sources listed in Figure 3.3. Types of sources will depend on the type of activity.

3.3.2 Excluded Sources

Other emissions sources have been considered but ultimately excluded from FIFA/LOC's organizational/operational boundaries as they are not under FIFA/LOC's control and/or direct influence. These excluded emissions sources include stadium construction, transportation infrastructure, other construction, unlicensed third party merchandise, "informal" local social gatherings, the viewing of matches on television at homes, and legacy or post-event emissions among others.

Some emission sources were also excluded based on lack of information and/or materiality. These sources primarily encompass small preparation events and the FWC Concert.

Other important exclusions are associated with emissions of non-ticket holders accompanying ticketed holders because, differently than ticket holders, the primary reason for their travel to Brazil is tourism and not to attend the 2014 FWC. It is assumed that these non-ticket holder travelers will displace general tourists that would be traveling to Brazil during the same period and that will avoid traveling to Brazil due to convenience and economical reasons (higher airfare, lodging and meal prices and infrastructure saturation - full hotels and flights, unavailability of rental cars, etc.).

A summary of excluded sources is presented in Figure 3.4 next.



Figure 3.4: Summary of Excluded Sources

Phase	Event/Activity	Emissions Sources	Type of Source*
Preparation	• Stadium construction	• Materials • Diesel generators • Ground transport of material	• Energy production • Electricity utilization • Material emissions • Trucks • Rail • Waste
	• Other municipal infrastructure construction	• Materials • Diesel generators • Ground transport of materials	• Energy production • Electricity utilization • Material emissions • Trucks • Rail • Waste
	Small Preparation Events • Team workshops • Stadium workshops • Marketing workshops • Communications stakeholder workshop • LOC and FWC board meetings • Fan Fest workshops • Stadium operations meeting • Stadium inspection visits • Stadium manager training • FWC team meeting • General coordinator workshop • Referee training • PMA's preparatory trips • FIFA/LOC workshop meeting	• Venues for preparation events • Logistics • Dedicated fleet of vehicles	• Energy production • Electricity utilization • Refrigerant gases • Waste • Food vendors • Water/waste water treatment • Logistics • Car/truck • Bus/coach • Train/subway • Clean transportation • Plane
Staging	• FWC Concert • Unlicensed merchandise	• Venues • Merchandise production	• Energy production • Electricity utilization • Refrigerant gases • Waste • Food vendors • Water/waste water treatment • Logistics • Car/truck • Bus/coach • Train/subway • Clean transportation • Plane
Legacy	• Post-event activities ⁴	• Venues	• Electricity utilization • Refrigerant gases • Waste • Water/waste water treatment

Note: * Not all events/activities will have all types of sources listed in Figure 3.4. Types of sources will depend on the type of activities.

4 Legacy, post-event activities are primarily associated with the transition of venues, and other facilities, into their permanent legacy configuration.

4. SUMMARY OF RESULTS

Results are presented through two major lenses: by phase and by type. Both represent 100% of the anticipated greenhouse gas emissions from the 2014 FIFA World Cup Brazil™.

Consolidation by phase presents a break out of emissions by major event for the Preparation Phase, the FCC Staging Phase, and the FWC Staging Phase; this makes consolidation by phase analogous to consolidation on the organizational boundaries.

Consolidation by type is a report of emissions by the major primary greenhouse gas source categories, or types, relevant for the 2014 FWC Brazil.

4.1 Results by Phase

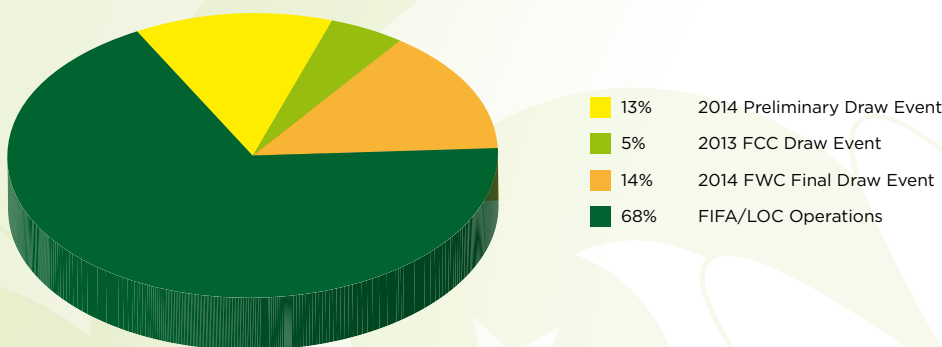
The carbon footprint for the 2014 FWC Brazil shows that the overall event is expected to generate just over 2.7 million tCO₂e, inclusive of Preparation, FCC Staging, and FWC Staging. FWC Staging accounts for the vast majority (90.8%), followed by FCC Staging, which contributes a significant fraction (7.8%), as well. Table 4.1 next provides a breakdown of the emissions by major event and activity by phase.

Table 4.1: Overall Results by Phase

Summary of Results	Total Emissions (tCO ₂ e)	% of Phase	% of overall 2014 FWC Brazil Carbon Footprint
Preparation	38,048	100.0%	1.4%
• 2014 FWC Preliminary Draw Event	5,069	13.3%	0.2%
• 2013 CC Draw Event	2,054	5.4%	0.1%
• 2014 FWC Final Draw Event	5,221	13.7%	0.2%
• FIFA/LOC Operations	25,704	67.6%	0.9%
FCC Staging	213,706	100.0%	7.8%
• FCC Matches	212,233	99.3%	7.8%
• Football for Hope Forum 2013	209	0.1%	0.0%
• FCC Banquet	100	0.1%	0.0%
• FIFA/LOC Operations	1,164	0.5%	0.0%
FWC Staging	2,472,002	100.0%	90.8%
• FWC Matches	2,281,448	92.3%	83.8%
• FIFA Fan Fests	79,084	3.2%	2.9%
• International Fan Fests	105,112	4.3%	3.9%
• 2014 Football for Hope Festival	2,842	0.1%	0.1%
• FWC Banquets	82	0.0%	0.0%
• FIFA/LOC Operations	3,434	0.1%	0.1%
GRAND TOTAL PREPARATION + STAGING	2,723,756		100%

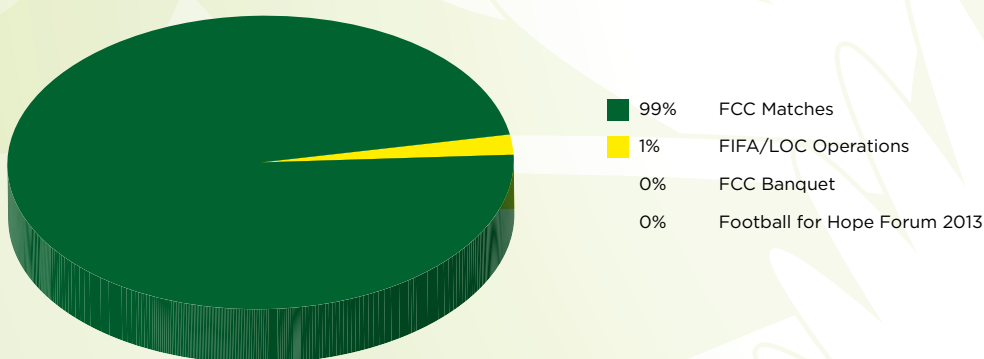
Preparation Phase emissions are shown in Figure 4.1, below. FIFA/LOC Operations include emissions from daily office use as well as international and domestic inter-city transportation; the contribution from these two types to the FIFA/LOC Operations emissions makes FIFA/LOC the largest contributor to Preparation Phase emissions. The FWC Final Draw is anticipated to be comparable to the FWC Preliminary Draw in size and style, and the carbon footprint of both events is similar, as well.

Figure 4.1: GHG Emissions Distribution – Preparation Phase



FCC Staging emissions are shown in Figure 4.2 below.

Figure 4.2: GHG Emissions Distribution – FCC Staging Phase

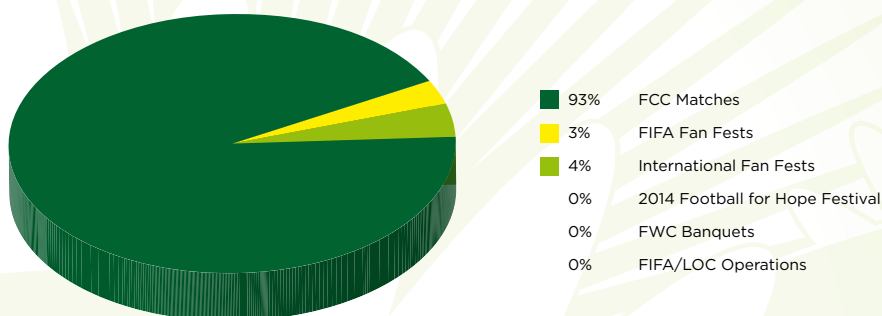


Emissions from the FCC matches, while not as large as the emissions from the FWC matches overall, predominate and make up 99% of the total emissions of the FCC Staging Phase.

The FWC Staging Phase contains three sizeable events: the actual FWC Matches as well as the FIFA Fan Fests and International Fan Fests. As shown in Figure 4.3, the FWC Matches account for the majority (93%) of emissions, while the FIFA Fan Fests and the International Fan Fests are expected to account for 3% and 4%, respectively, of the overall emissions from the FWC Staging Phase.

International transportation emissions for the FWC Staging Phase are allocated to the FWC Matches. This consolidation choice was selected, as spectators are not expected to travel to Brazil during the FWC period solely on account of the Fan Fests, Banquets, or other small events. The primary reason for the international travel is to attend the matches.

Figure 4.3: GHG Emissions Distribution – FWC Staging Phase



As summarized in Table 4.2 next, the vast majority of emissions are Scope 3, i.e. other indirect emissions primarily associated with transportation. Scope 1 emissions are due to refrigerant leakage; FIFA-controlled power generation at stadia, the FWC IBC, and other sites; and emissions from FIFA’s fleet of vehicles. Overall Scope 2 emissions, those from purchased electricity, are relatively small, in part due to the clean Brazilian power grid.

Table 4.2: 2014 FWC GHG Emissions by Scope

Scope	Emissions (tCO ₂ e)	%
Scope 1	14,885	0.5%
Scope 2	42,395	1.6%
Scope 3	2,666,476	97.9%
Total	2,723,756	100.0%

4.2 Results by Type

2014 FWC Brazil greenhouse gas emissions by type are shown in Table 4.3. Overall, international transportation (50.6%) and inter-city transportation (29.5%) are the two most significant contributors. Accommodation (5.7%), temporary facility construction (4.1%), and intra-city transportation (3.6%) are intermediate contributors to the 2014 FWC Brazil carbon footprint.

Table 4.3: 2014 FIFA World Cup™ Carbon Footprint Results by Type

Type	Total Emissions (tCO ₂ e)	% of Total 2014 FWC Brazil
Total	2,723,756	100.0%
Transportation	2,280,050	83.7%
- International Transportation	1,379,189	50.6%
- Inter-city Transportation	802,397	29.5%
- Intra-city Transportation	98,464	3.6%
Accommodation	155,316	5.7%
Venue	262,759	9.6%
- Electricity Usage	55,680	2.0%
- Temporary Facility Construction	111,500	4.1%
- Food & Beverage	62,808	2.3%
- Waste & Wastewater	32,098	1.2%
- Refrigerant Leakage	673	0.0%
Merchandise Production	16,708	0.6%
Logistics	8,923	0.3%

Relative to South Africa, emissions from intra-city transportation, accommodation, and stadia electricity usage are lower, as Brazil has a very clean electricity grid (heavily hydro) and makes use of lower carbon liquid fuels. Overall, refrigerant leakage and logistics are calculated to account for less than 1% of the emissions for the 2014 FWC Brazil.

GHG emissions by type are illustrated graphically in Figure 4.4. Transportation is composed of international, inter-city, and intra-city transportation, while venues are composed of electricity consumption, temporary facility construction, food and beverage production, waste disposal and wastewater treatment, and refrigerant leakage.

Figure 4.4: 2014 FWC Brazil GHG Emissions by Type

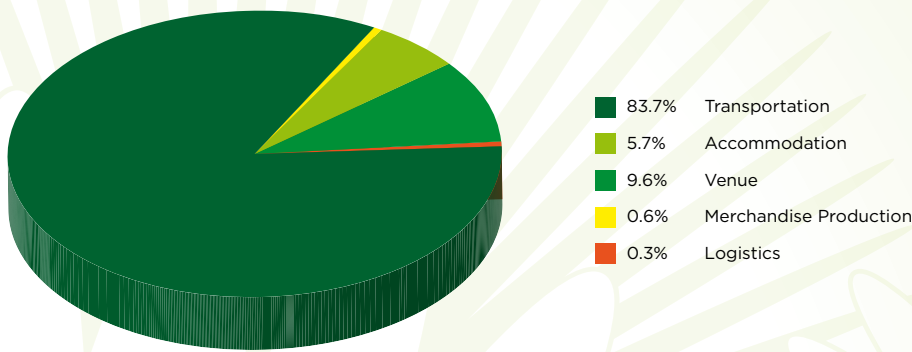
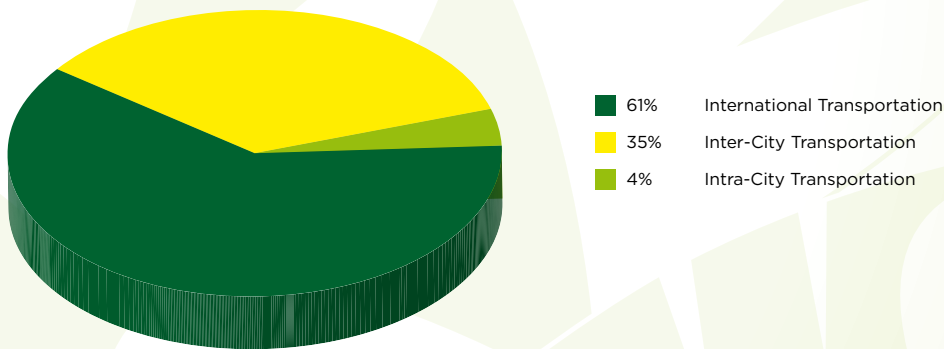


Figure 4.5 next shows the weight of individual transportation (intra-city, inter-city and international) in the total transportation emissions across all three phases (Preparation, FCC and FWC Staging) events and activities. International transportation predominates (61%), followed by inter-city (35%).

Figure 4.5: 2014 FWC Brazil GHG Emissions Distribution - Transportation



5. GLOSSARY

BS 8901: 2009 Specification developed by the British Standards Institution that provides a set of guidelines to help with the planning and management of sustainable events. It is available at: <http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030196056>

FIFA: The Fédération Internationale de Football Association (FIFA) .

FIFA Fan Fests: Events organized by FIFA in the Host Cities which allow fans to watch the matches and participate in other activities with fellow fans during FWC match days.

Green Goal: FIFA's official environmental programme for the 2006 FIFA World Cup, 2010 FIFA World Cup and 2011 FIFA Women's World Cup. Further details available at: <http://www.fifa.com/aboutfifa/socialresponsibility/environmental.html>

GHG Protocol Corporate Accounting Standard: A standard developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) to guide businesses in their corporate greenhouse gas accounting. Further details are available at: <http://www.ghgprotocol.org/standards/corporate-standard>

Host Cities: Cities that were elected to host the 2014 FIFA World Cup™ matches. The Host Cities for the World Cup, and the respective stadiums are:

BHZ	- Belo Horizonte	- Estadio Mineirão
BRS	- Brasília	- Estadio Nacional de Brasília
CBA	- Cuiabá	- Arena Pantanal
CUR	- Curitiba	- Arena da Baixada
FTL	- Fortaleza	- Arena Castelão
MAN	- Manaus	- Arena Amazônia
NTL	- Natal	- Estádio das Dunas
PTA	- Porto Alegre	- Estádio Beira-Rio
RCF	- Recife	- Arena Pernambuco
RIO	- Rio de Janeiro	- Estádio do Maracanã
SAL	- Salvador	- Arena Fonte Nova
SAO	- São Paulo	- Arena de São Paulo

International Fan Fests: Events organized by FIFA, its partners and local authorities in selected cities around the world, which allow fans to watch the matches and participate in other activities with fellow fans during FWC match days.

ISO 14064.1: Standard with principles and requirements at the organization level for quantification and reporting of greenhouse gas emissions and removals, developed by the International Standards Organization to guide organizations in greenhouse gas accounting. The standard is available at: http://www.iso.org/iso/catalogue_detail?csnumber=38381

ISO 20121:2012: Standard developed by the International Standards Organization that specifies requirements for an event sustainability management system for any type of event or event-related activity, and provides guidance on conforming to those requirements. The standard is available at: http://www.iso.org/iso/catalogue_detail?csnumber=54552

LOC: Is the Organising Committee for the FIFA World Cup™, a private company 100% funded by FIFA; it is independent from the Brazilian Football Confederation (CBF). LOC is responsible for organizing the 2014 FIFA World Cup™, 2013 FIFA Confederation World Cup and ancillary events. The LOC local team (resident in the Host City) coordinates the events and the competition in conjunction with the FIFA local team (accommodated in the Host Cities).

Media: Professionals from the “written” press accredited and authorized by FIFA to cover the FCC and FWC, including the Internet companies.

Participant Member Associations (PMAs): The member associations that are participating with their national football team in the FIFA World Cup™. Further details on the PMAs from the 2014 FIFA World Cup available at:

<http://www.fifa.com/worldcup/preliminaries/index.html>

PAS 2050: 2011 Specification for the assessment of the life cycle greenhouse gas emissions of goods and services, was developed by the British Standards Institution. It is available for download at:

<http://shop.bsigroup.com/en/forms/PASs/PAS-2050>

Photographers: Specialized media professionals who are accredited and authorized by FIFA to cover the FCC and FWC.

Referees: Referees and assistants in charge of refereeing the FCC and FWC matches.

Spectators: General public, hospitality package owners, and VIPs that attend matches and other events.

Venue: Venues are all establishments where events or main activities occur. They include stadia, fan fest locations, and banquet locations, among others.

Venue Operations Personnel: Includes stadium operations personnel as well as personnel who support event production at other venues, including Fan Fests and Draw Events.

Volunteers: Local team of residents in the Host City which are recruited by the LOC. Volunteers work for the LOC and FIFA during the FCC and FWC, performing several functions.

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