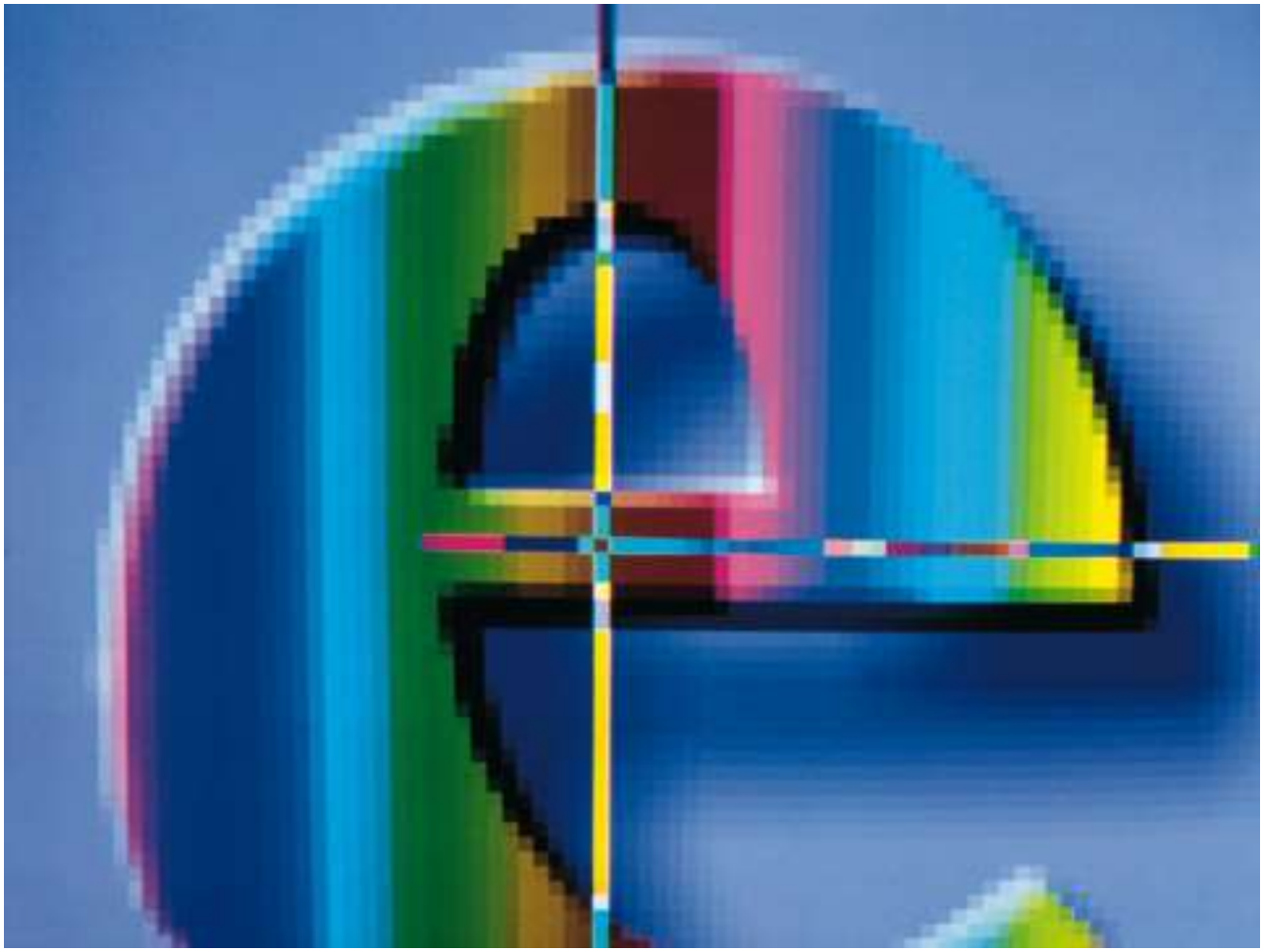
REPORT ON GREENHOUSE GAS EMISSIONS OF THE INTERNATIONAL JUDO FEDERATION FOR THE YEAR 2023



EKONERG – Energy Research and Environmental Protection Institute, Ltd.

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EKONERG – Energy Research and Environmental Protection Institute Ltd.
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REPORT ON GREENHOUSE GAS EMISSIONS OF THE INTERNATIONAL JUDO FEDERATION FOR THE YEAR 2023

Project coordinator: Morana Česnik Katulić, Ph. D., mag.ing.oecoing., univ.spec.oec. MBA

Authors: Ines Trbojević, mag. geol.
Morana Česnik Katulić, Ph. D., mag.ing.oecoing., univ.spec.oec. MBA
Vladimir Jelavić, Ph.D., M.Eng.Mech.Eng.

Atmospheric Protection and Climate Change Department Manager:

Valentina Delija-Ružić, M.Eng.M.E.

General Manager:

Elvis Cukon, M.Eng.Mech.Eng., MBA

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Content

1. Introduction

This report is prepared as support to the International Judo Federation (IJF) and its commitments within the United Nation's Sports for Climate Action (S4CA) Framework. It covers:

1. The International Judo Federation´s carbon footprint assessment (emissions inventory) for the calendar year 2023,
2. The carbon footprint assessment of two World Judo Tour events in 2024, and
3. The completed S4CA reporting questionnaire for 2023 to be submitted by the International Judo Federation.

By joining the S4CA initiative, IJF has committed to preparing yearly reports on greenhouse gas emissions. The first report was prepared for 2021, and that year was declared as the base year against which future emissions will be compared. The IJF's greenhouse gas emissions inventory for 2023 is the third such inventory.

The carbon footprint assessment covers the quantification of greenhouse gas emissions, expressed as carbon dioxide equivalent (CO_2e).

The greenhouse gas emissions calculations include all identified Scope 1, Scope 2 and Scope 3 emissions from IJF as a sport organization, as well as emissions from two selected World Judo Tour events:

- Grand Prix Zagreb, Croatia and
- Grand Slam Tokyo, Japan.

The Scope 3 emission categories considered for the IJF in previous years have been applied consistently in 2023. For the selected sports events, Scope 3 categories have been assessed based on available data and event-specific characteristics.

This report contains:

- basic information about the UN's Sports for Climate Action Framework and International Judo Federation organization for which emissions are quantified (Chapter 2),
- description of the methodology used for emissions calculation (Chapter 3),
- carbon footprint assessments (Chapter 4),
- results of the greenhouse gas emissions calculations for all three scopes (Chapter 5),
- analysis of the data for the period 2021-2024 (Chapter 6), and
- Conclusion (chapter 7),
- International Judo Federation reporting questionnaire for year 2023 for submission to S4CA in 2024 (Appendix)

2. International Judo Federation and UN's S4CA Framework

The International Judo Federation (IJF) is the international governing body for judo, founded in July 1951. Initially, the IJF consisted of judo federations from Europe and Argentina, but today it has grown to include 205 members, National Judo Federations across all continents. According to the IJF, there are more than 20 million people worldwide practicing judo.

Sport, in all its forms, is increasingly vulnerable to the effects of climate change. The growing unpredictability of weather patterns, including temperature rise, reduced snowfall during winter, frequent heatwaves, and rising sea levels, presents significant challenges for athletes, event organizers, and spectators alike. Severe weather conditions can also negatively affect sport infrastructure.

In December 2018, the United Nations Framework Convention on Climate Change (UNFCCC) and the International Olympic Committee (IOC) jointly launched the Sports for Climate Action (S4CA) Framework, outlining the role of sport in addressing global climate change. The S4CA Framework aims to support sport organizations in reducing emissions resulting from their operations. The initiative encourages sports bodies to recognize their contribution to climate change and take responsibility for advancing climate neutrality, thus ensuring a safer planet for future generations.

Recognizing the urgency of this issue and the need for collective action within the sports community, the IJF is proud to be one of many sports organizations that have committed to the S4CA initiative. By joining the initiative, the IJF has pledged to adhere to the five core principles outlined in Table 1-1.

As a signatory to the S4CA Framework, the IJF has accepted its role in contributing to the global goal of achieving climate neutrality by mid-century, as outlined in the 2015 Paris Agreement. In line with this commitment, the IJF selected 2021 as the base year for greenhouse gas (GHG) emission reporting, against which all future emissions will be measured.

The IJF's responses to the five core principles of the S4CA Framework, along with its alignment with the objectives of the Paris Agreement, are summarized in Table 1-1.

Table 1-1: IJF's responses to the five core Sports for Climate Action Principles

S4CA Principle	IJF´s response
1. **Undertake systematic efforts to promote greater environmental responsibility**	Steps already taken by developing and distributing IJF Event Sustainability Checklist; measures are taken to lower the climate and environmental impact of all IJF-organized events, two of them are also presented in this Study
2. **Reduce overall climate impact**	IJF is at the beginning of this journey but keen to align with Paris Agreement goals
3. **Education for climate action**	IJF uses IJF platforms to educate on sustainability and climate action and plans to perform such activities even more in the future; in 2023 a series of in-person IJF Sustainability Workshops for Youth

S4CA Principle	IJF´s response
	was initiated at the IJF Youth Camp in Switzerland. More destinations to be added in next years.
4. **Promote sustainable and responsible consumption**	Sustainability and care for the environment are being highlighted on websites, media, social media and during sport events
5. **Advocate for climate action through communication**	Climate action is actively communicated, and IJF Climate Ambassadors are engaged in inspiring projects that raise awareness in the Judo Community and beyond

3. Methodology

The methodology for evaluating the carbon footprint of the IJF and its events aligns with the Greenhouse Gas Protocol (GHG Protocol), with adaptations for a sports organization and in line with the UN S4CA Framework guidelines.

The carbon footprint assessment calculates greenhouse gas emissions, expressed as CO_2e, following the GHG Protocol. This global standard helps quantify and manage emissions from operations, supply chains, and emission reduction activities across both private and public sectors. The GHG Protocol was developed through global collaboration with governing bodies, industry associations, NGOs, and businesses.

The GHG Protocol includes globally accepted standardization documents used as guides for determining the carbon footprint and calculating GHG emissions:

- "*The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard*" [Ref 1];
- "*GHG Protocol Scope 2 Guidance*", *An amendment to the GHG Protocol Accounting and Reporting Standard* [Ref 2];
- "*Corporate Value Chain (Scope 3) Accounting and Reporting Standard*", *Supplement to the GHG Protocol Accounting and Reporting Standard* [Ref 3],
- "*Technical Guidance for Calculating Scope 3 Emissions", Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard* [Ref 4].

These documents enable a similar set of methodologies for all entities seeking to establish a system for accounting and reporting on greenhouse gas emissions.

The GHG Protocol defines three "scopes" (Scope 1, Scope, 2, and Scope 3) for GHG emissions accounting and reporting purpose as shown in Figure 3-1.

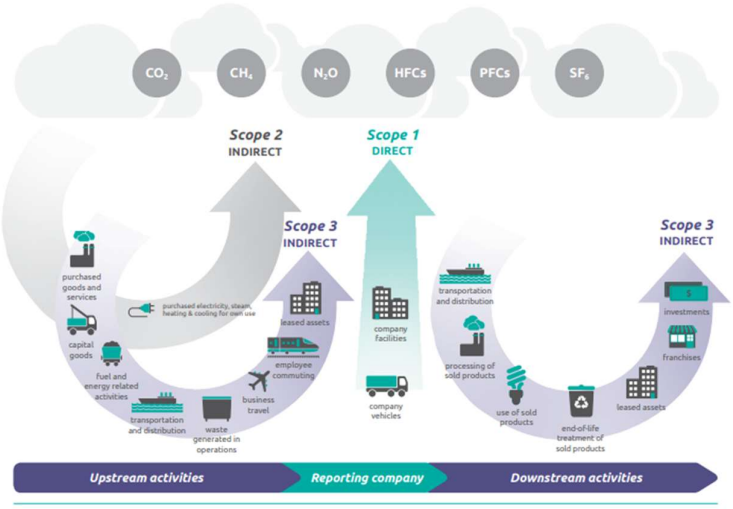

Figure 3-1: Overview of GHG Protocol scopes and emissions across the value chain

Carbon emissions are categorized into Scopes 1, 2, and 3 to describe different emission sources within an organization's operations and value chain:

- **Scope 1** - direct emissions from fuel combustion in sources owned or directly controlled by the organization (e.g. emissions from own vehicles, machines, devices).
- **Scope 2** - indirect emissions from the production of purchased energy, including electricity, steam, heating, and cooling.
- **Scope 3** - indirect emissions from upstream and downstream activities outside the organization's control, such as travel, waste generation, and purchased goods and services.

The general emission sources by scope for sports organizations and events are presented in the section defining system boundaries (subchapter 3.1), while an overview of all identified IJF emission sources is provided in subchapter 3.2 of this report.

The greenhouse gases covered by the GHG Protocol include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

The radiative forcing impact of each greenhouse gas on global warming is measured using Global Warming Potential (GWP). Since GHGs have different GWPs, total emissions are expressed as carbon dioxide equivalent (CO2e), measured in tons (t CO2e).

Table 3-1 lists the GWP values of greenhouse gases reported under the GHG Protocol, specifically for those identified in IJF-owned or controlled sources. For HFC gases, the values reflect those used in air conditioning and refrigeration devices at IJF facilities. GWP values are sourced from the GHG Protocol, adapted from the Intergovernmental Panel on Climate Change's Fifth Assessment Report (AR5) [Ref 5].

Table 3-1: Global warming potential (GWP) values of greenhouse gases relevant for the IJF´s activities

GREENHOUSE GAS		POTENTIAL (GWP)
CO_2		1
CH_4		28
N_2O		265
HFCs	**HFC-32**	677
	HFC-134a	1300

Since GHG Protocol doesn't cover sport activities as a separate category or sector, general GHG emission calculation guidelines were used in this Report. Established approach for cross-sectoral GHGs emission calculation was applied.

Emission factors used for the calculation include the IPCC 2006 guidelines [Ref 6] and other relevant sources [Ref 7, 8, 9, 10].

3.1. Setting inventory system boundaries

Typical boundaries for GHG emission inventories of sports organizations and events are presented in Table 3-2, with boundaries for organizations marked in green and for events marked in blue. Since no strict rules exist for defining these boundaries, the common carbon footprint guidelines from the S4CA initiative were applied.

Table 3-2: Emission sources by categories for sport organizations and sport events from S4CA

Category	***Sports Organization***	***Sport Events***
Scope 1 *Direct emissions from owned or controlled sources*	Fuel combustion, driving own vehicles, refrigeration	Fuel combustion for the event (for generation of electricity or heat), driving own vehicles by event organizers, refrigerants escaping from refrigeration systems for the event
Scope 2 *Emissions from the generation of purchased energy*	Purchased electricity, heat or steam	Purchased electricity, heat or steam for the event (not generated directly by the organizers of the event)
Scope 3 *Indirect emissions (not included in scope 1 and 2) that occur in the value chain, including both upstream and downstream*	Any air travel paid for by the organization; ground transportation of staff and materials in vehicles not owned or controlled by the organization; extraction and production of purchased	Air travel by organizers of the event and fans; ground transportation in vehicles not owned or controlled by organizers of the event and fans; extraction and production of purchased
	materials and fuels (paper, furniture, office supplies, vehicles, water, food, etc.); electricity transmission losses; emissions from outsourced activities like production of any materials and delivery of services; waste disposal; supply chain-related emissions, etc.	materials and fuels (signs, stages, office supplies, electronics, souvenirs, clothing, food etc.); electricity transmission losses; outsourced activities (like event planning by a third party); waste disposal, etc.

3.2. Identification of the emission sources

Sources of greenhouse gas emissions identified within the inventory system boundaries are categorized into Scope 1, Scope 2, and Scope 3, as presented below.

All Scope 1, 2, and 3 emissions from the IJF, which were calculated for the years 2021 and 2022, have now been calculated for 2023 as well. All identified Scope 1 and 2 emissions from events assessed in previous years are also evaluated for the relevant events (Grand Prix Zagreb and Grand Slam Tokyo) in 2024. Meanwhile, Scope 3 emissions are calculated based on available data, with categories included or excluded depending on the data collected by the event organizers. The scope allocation overview for the events and IJF is presented in Figure 3-2.

Figure 3-2: IJF emission scopes overview

All Scope 3 categories defined by the GHG Protocol are reviewed for inclusion in the calculation of IJF's carbon footprint. These categories are listed in Table 3-3, indicating their relevance to both IJF's organizational and event footprints.

Table 3-3: Overview of 15 Scope 3 GHG Protocol categories, with an indication of their applicability to IJF and events

	Scope 3 category	IJF	GP Zagreb, GS Tokyo
1	***Purchased Goods and Services***	As a non-production organization, IJF does not purchase significant quantities of materials or products. For the few products that are purchased, systematic data is currently unavailable, and therefore, this category is not included in the inventory.	This category is included in the events inventory based on available data on food preparation during events, served at hotels and sports venues.
2	***Capital goods***	Category not included in the inventory: The IJF organization did not invest in capital goods during 2023.	N/A
3	***Fuel- and energy-related activities (not included in Scope 1 or Scope 2)***	Energy-related GHG emissions are included in Scope 1 (natural gas combustion for heating) and Scope 2 (imported heat and electricity consumption). Scope 3 emissions from energy sources are not included in this assessment.	
4	***Upstream transportation and distribution***	This category is not included in the inventory as there are no significant amounts of purchased products requiring transportation from suppliers (related to Category 1).	N/A
5	***Waste generated in operations***	N/A	This category is not included in the inventory due to the unavailability of data on waste generation during the events at hotels and sports venues.
6	***Business travel***	This category is included in the assessment and is identified as the most significant Scope 3 category in IJF's emissions inventory.	
7	***Employee commuting***	Data is currently unavailable. Most employees live close to their workplace or work from home offices. Most of the professional travel involves trips to other cities and countries, which are included under Category 6.	
8	***Upstream leased assets***	This category is included in the inventory based on available data on fuel combustion from transportation using a rented van by IJF. However, these emissions are estimated to be not significant.	N/A

	Scope 3 category	IJF	GP Zagreb, GS Tokyo
9	***Downstream transportation and distribution***	N/A	
10	***Processing of sold products***	N/A	
11	***Use of sold products***	N/A	
12	***End-of-life treatment of sold products***	N/A	
13	***Downstream leased assets***	N/A	
14	***Franchises***	In this assessment, sport events are classified as Category 14 – Franchises to align organizational circumstances with general GHG Protocol categories. A franchise, by definition, is a business operating under a license to sell or distribute another company's goods or services. In this context, World Judo Tour competitions fall into this category as they are organized by local organizers (IJF member National Federations) with support from the IJF as the roof organization.	
15	***Investments***	N/A	

4. Carbon footprint assessment

The carbon footprint assessment covers the IJF Headquarters for the calendar year 2023 and two selected events in 2024: the Grand Prix Zagreb 2024 and the Grand Slam Tokyo 2024.

4.1. Grand Prix Zagreb 2024, Croatia

The Zagreb Grand Prix 2024 took place in Zagreb, Croatia, from September 13 to 15. A total of 319 competitors from 40 countries across four continents participated in the event.

Before the event, recommendations for reducing the carbon footprint were provided to the organizer to raise awareness of the environmental impact of judo competitions, with a focus on greenhouse gas emissions. Implementing these recommendations aims to enhance the event's sustainability, lower its greenhouse gas emissions, and promote efforts toward a "greener" event with a reduced climate impact.

Recommendations include the following measures to minimize greenhouse gas emissions and contribute to the event's carbon footprint reduction:

- **Optimize participant transportation** – Ensure efficient transport between hotels, the airport, and the sports venue. Prioritize electric or hybrid vehicles where possible or prefer gasoline-powered vehicles over diesel ones.
- **Organize sustainable transport for visitors** – Provide free public transport with ticket purchase or incentivize fans (e.g., drink coupons) to arrive by bike or public transport instead of by car.
- **Implement a reusable cup system** – Use hard plastic reusable cups for drinks in the sports hall, allowing spectators to return them at the end of the event for a refund. Encourage the use of reusable packaging for food and drinks among event participants or provide biodegradable alternatives.
- **Use reusable event materials** – Avoid single-use plastics for banners, signs, and accreditations. Large billboards should exclude date/year to allow reuse across multiple events.
- **Encourage plant-based food options** – Work with food suppliers to increase plant-based offerings, as plant-based diets have a lower environmental impact than certain animal-based foods.
- **Source local food** – Reduce transport emissions by prioritizing locally grown ingredients, with recorded quantities allowing for the calculation of avoided emissions.
- **Donate excess food** – Partner with charities to donate leftover food, reducing both waste and greenhouse gas emissions from landfill disposal.
- **Engage sustainable suppliers and sponsors** – Collaborate with businesses that implement sustainable practices, highlighting potential environmental benefits.
- **Improve waste management** – Partner with hotels and sports venues that implement separate waste collection and recycling, reducing greenhouse gas emissions from waste disposal.

4.1.1. Setting GHG inventory boundaries

The sources of greenhouse gas (GHG) emissions for the Zagreb Grand Prix, identified and included in this assessment, are presented in Table 4-1.

For the purpose of this assessment, the scope definitions provided by S4CA in Table 4-1 have been interpreted to include athlete travel, despite the general reference to "air travel by organizers and fans." Athlete and team member travel has been included due to its significant contribution to the event's overall emissions.

Table 4-1: Identified GHG emission sources of Zagreb Grand Prix 2024

Emission source	Description	Category
Transport during event	Transport of event participants during the event using vehicles under the control of the organizer	Scope 1
Hotel energy consumption	Emissions from fuel combustion in the hotel	Scope 1
	Emissions that occurred during generation of electricity and heat consumed by the hotel	Scope 2
Sports venue energy demand	Emissions that occurred during generation of electricity consumed by the sports venue	Scope 2
Transport to and from event city	Self-organized transport of event participants and staff to and from Zagreb	Scope 3
Food preparation	Supply chain emissions from consumed/prepared food	Scope 3

The leakage of refrigerants from cooling equipment in hotels and the sports venue was considered negligible during the event.

Fan travel was not included in the assessment due to a lack of available data. Since most visitors were local, the impact of their travel was deemed negligible.

4.1.2. Data collection

For the purpose of calculating GHG emissions from the event, necessary data needed to be collected. The following questionnaires were prepared and distributed to the event organizer, hotels, the sports venue, catering services, and participants:

- Information on travelling of participants to and from Zagreb – This year, travel data was gathered through an online questionnaire.
- Information on local transport during the event – A questionnaire was prepared to collect information on the type and frequency of local transport used by participants.
- Information on energy consumption and waste management at the sports venue – The questionnaire aimed to gather information on energy consumption at the sports hall during the tournament, as well as on the amount of waste separately collected at the venue. Additionally, questions were included regarding the sustainability policies implemented by the sports hall.
- Information on hotel energy consumption and waste collection – This questionnaire covered energy consumption in hotels accommodating

participants, as well as the amount of waste separately collected during the event. Similar to the sports hall questionnaire, it also included questions on sustainability policies.

- Information on food ingredients and quantities – The questionnaire focused on the types and quantities of ingredients used in meal preparation. In cases where ingredient-specific data was unavailable, the total number of prepared meals was recorded.

From the responses received, approximately half of the travel data was obtained through the online survey, while the remaining data was sourced from records maintained by the travel agency responsible for participant reception and accommodation. The questionnaire on local transport was successfully completed and submitted. However, questionnaires related to hotels, the sports venue, and catering services were not filled out. As a result, estimations were made based on data collected during the GHG emissions calculation for the Zagreb Judo Grand Prix 2021, as well as on participant numbers, including the number of overnight stays in hotels.

4.1.3. GHG emissions sources

Transport during the event – Scope 1 emission category

Emissions from transportation encompass the use of vehicles controlled by the event organizer for short trips within Zagreb. The vehicles used included:

- Rented cars powered by gasoline and diesel,
- Vans powered by diesel,
- Buses powered by diesel.

Hotel energy demand – Scope 1 and Scope 2 emission category

Participants and staff stayed in four hotels. The participants stayed in four hotels. Two of them are luxury hotels with 5 stars, one has 4 stars (also classified as a luxury hotel[1]), and one hotel has 3 stars, which falls under the medium[2] category of hotels. Emissions from hotels include direct GHG emissions from natural gas combustion (Scope 1) and indirect GHG emissions from purchased electricity and imported heat (Scope 2). Since data on fuel and energy consumption was not collected, the emission calculations were based on the number of GP participants and IJF staff per hotel, as well as the number of overnight stays per hotel. Specific emission factors for electricity were applied according to hotel category (luxury hotels – 4- and 5-star, medium hotels – 3-star). This data was used to estimate fuel and energy consumption and calculate emissions for the event.

[1] categorization according to *IOC Carbon Footprint Methodology for the Olympic Games, December 2018*

[2] categorization according to *IOC Carbon Footprint Methodology for the Olympic Games, December 2018*

Sports venue energy demand – Scope 2 emission category

Indirect emissions from the sports venue include electricity consumption during the event. Since no electricity data was provided for the sports hall, electricity consumption was estimated based on the emissions calculation from the Zagreb Grand Prix 2021 considering that the tournament took place in the same sport hall – Arena Zagreb. No assessment was carried out for heating, as no data was available, and it was assumed that no additional GHG emissions occurred due to the usage of heating pump system that runs on electricity.

Transport to and from event city – Scope 3 emission category

Most participants of the Zagreb Grand Prix traveled to Zagreb by plane, some arrived by car, and only a few by bus or van. IJF staff also traveled to Zagreb primarily by plane, some by car, and only a few by bus.

Data from local participants and local partners/contractors were not collected, and it is assumed that their impact on the event's carbon footprint is negligible.

Food supply chain – Scope 3 emission category

Life Cycle Assessment (LCA) of GHG emissions from food was assessed as an indirect Scope 3 emission source.

Since data on the amount of food consumed during the event (both in hotels and at the sports venue) was not collected, emissions were estimated based on the number of participants per hotel and their overnight stays. Specific emission factors were applied for each meal, based on hotel categories (luxury hotels – 4- and 5-star, medium hotels – 3-star)[3]. For lunch and dinner, emission factors were determined based on an assumed meal distribution of 20% vegetarian, 40% chicken-based, and 40% beef-based dishes.

[3] categorization according to *IOC Carbon Footprint Methodology for the Olympic Games, December 2018*

4.2. Grand Slam Tokyo 2024, Japan

The Tokyo Grand Slam 2024 took place in Tokyo, Japan, from December 7 to 8. A total of 274 competitors from 44 countries across four continents participated in the event.

Before the event, an initial questionnaire was sent to the organizer to gather information and provide recommendations for reducing the event's carbon footprint. The focus was on raising awareness about the environmental impact of the event, specifically greenhouse gas emissions. The organizer was asked to provide brief descriptions in the following areas: food organization during the event, waste management at hotels and sport venue, and a summary of any sustainability initiatives, such as avoiding single use plastic, replacing plastic packaging with paper or cardboard, reusing event materials, etc.

4.2.1. Setting GHG inventory boundaries

Grand Slam Tokyo GHG emission sources that were identified and included in this assessment are presented in Table 4-2.

Table 4-2: Identified GHG emission sources of Grand Slam Tokyo

Emission source	Description	Category
Transport during event	Transport of Grand Slam participants during the event using vehicles under the control of the organizer	Scope 1
Hotel energy demand	Emissions from fuel combustion in the hotels	Scope 1
	Emissions that occurred during generation of electricity consumed by hotels	Scope 2
Sports venue energy demand	Emissions that occurred during generation of electricity consumed by the sports venue	Scope 2
Transport to and from event city	Self-organized transport of event participants and staff to and from Tokyo	Scope 3
Food preparation	Supply chain emissions from consumed/prepared food	Scope 3

The leakage of refrigerants from cooling equipment in hotels and the sports venue was considered negligible during the event.

Fan travel was not included in the assessment due to a lack of available data. Since most visitors were local, the impact of their travel was deemed negligible.

4.2.2. Data collection

For the purpose of calculating GHG emissions from the event, necessary data needed to be collected. The following questionnaires were prepared and distributed to the event organizer, hotels, the sports venue, catering services, and participants:

- Information on travelling of participants to and from Tokyo – This year, an online questionnaire was prepared to collect travel data.
- Information on local transport during the event – A questionnaire was designed to gather information on the type and frequency of local transfers used by participants.
- Information on energy consumption and waste management at the sports venue – The questionnaire aimed to collect data on energy consumption at the sports hall during the tournament, as well as on the amount of waste separately collected at the venue. Additionally, several questions were included regarding the sustainability policies implemented by the sports hall.
- Information on hotel energy consumption, waste collection, and food services – The questionnaire covered energy consumption in the four hotels accommodating participants, as well as the amount of waste separately collected during the event. Similar to the sports hall questionnaire, it also included questions on sustainability policies. Additionally, the questionnaire gathered information on food ingredients and meal quantities prepared in these hotels.

No travel data was obtained through the online questionnaire. Instead, the final calculations were based entirely on records maintained by agents in All Japan Judo Federation (AJJF). Data on local transfers was successfully collected. The questionnaire for the sports venue was completed, and the necessary data was obtained. The hotel questionnaire was only partially completed — data on energy consumption and waste collection was not provided. As a result, energy consumption estimates were made based on the number of participants in hotels and the number of overnight stays. Only qualitative information on food services was available, specifying the type of meal provision (e.g., lunch boxes, per diems, vouchers, or bed-and-breakfast), but no data on meal quantities was provided.

4.2.3. GHG emissions sources

Transport during event – Scope 1 emission category

Emissions from transportation encompass the use of vehicles controlled by the event organizer for short trips within Tokyo. The vehicles used included:

- Buses powered by diesel,
- Vans powered by gasoline.

Hotel energy demand – Scope 1 and Scope 2 emission category

Participants and staff stayed in four hotels. One of them is a luxury hotel with 5 stars, two have 4 stars (also classified as luxury hotels), and one hotel has 3 stars, which falls under the medium category of hotels. Emissions from hotels include direct GHG emissions from natural gas combustion (Scope 1) and indirect GHG emissions from purchased electricity and imported heat (Scope 2). Since data on fuel and energy consumption was not collected, the emission calculations were based on the number

of GP participants and IJF staff per hotel, as well as the number of overnight stays per hotel. Specific emission factors for electricity were applied according to hotel category (luxury hotels – 4- and 5-star, medium hotels – 3-star)[4]. This data was used to estimate fuel and energy consumption and calculate emissions for the event.

Sports venue energy demand – Scope 2 emission category

Indirect emissions from the sports venue include electricity consumption during the event. Emissions were calculated based on the provided data on electricity consumption in kWh. Since no data on natural gas consumption or heat energy use was provided, it was assumed that there was no energy consumption from district heating.

Transport to and from event city – Scope 3 emission category

All participants of the Tokyo Grand Slam and IJF staff traveled to Tokyo by plane.

Data from local participants and local partners/contractors were not collected, and it is assumed that their impact on the event's carbon footprint is negligible.

Food supply chain – Scope 3 emission category

Life Cycle Assessment (LCA) of GHG emissions from food was assessed as an indirect Scope 3 emission source.

Since data on the amount of food consumed during the event (both in hotels and at the sports venue) was not collected, emissions were estimated based on the number of participants per hotel and their overnight stays. Specific emission factors were applied for each meal, based on hotel categories (luxury hotels – 4- and 5-star, medium hotels – 3-star)[5]. For lunch and dinner, emission factors were determined based on an assumed meal distribution of 20% vegetarian, 40% chicken-based, and 40% beef-based dishes.

[4] categorization according to *IOC Carbon Footprint Methodology for the Olympic Games, December 2018*

[5] categorization according to *IOC Carbon Footprint Methodology for the Olympic Games, December 2018*

4.3. IJF Headquarters 2023

This chapter presents an analysis of the carbon footprint of IJF's operations across its locations, based on data from 2023. The carbon footprint has been calculated for the base year 2021, as well as for 2022, enabling a comparison of the organization's emissions over time. This evaluation assesses the contribution of IJF's activities to overall greenhouse gas emissions and highlights key areas where reductions can be made. By understanding the environmental impact of its operations, IJF can work towards achieving its sustainability goals and further minimizing its carbon footprint in the future.

Current IJF facilities include the following three locations that were included in the inventory:

- Budapest, Hungary: (Presidential office, Headquarter offices, and Flat)
- Paris, France: General Secretariat
- Abu Dhabi, United Arab Emirates: General Treasury.

4.3.1. Setting GHG inventory boundaries

All IJF activities related to GHG emissions were reviewed and discussed for each individual location, as well as for IJF as an organization, when preparing the GHG emission inventory for the base year 2021. The emission sources identified and included in the base year 2021 inventory remain the same in 2023 and are outlined in Table 4-3.

Scope 1 and 2 emissions were identified and incorporated into the inventory as mandatory categories, in accordance with the GHG Protocol.

The identification of sources in the Scope 3 emission categories was covered in previous chapters (Chapter 3.2, Table 3-3). It was decided to include emissions from business travel by IJF employees and contractors, as this source constitutes a significant portion of overall emissions and was therefore included in this assessment in line with S4CA requirements.

Table 4-3: Identified GHG emission sources of IJF in 2023

Emission source	Description	Category
Natural gas for heating – location Budapest	Emission that occurred during combustion of natural gas in boilers of the Presidential office, headquarters and one flat	Scope 1
Cooling equipment – location Budapest	Estimate of yearly HCF leakage from air conditioner units	Scope 1
Cooling equipment – location Abu Dhabi	Estimate of yearly HCF leakage from refrigerator unit	Scope 1

Emission source	Description	Category
Electricity consumption – location Budapest	Emission that occurred during generation of electricity or heat consumed by Presidential office, headquarters and one flat	Scope 2
Electricity consumption – location Abu Dhabi	Emission that occurred during generation of electricity or heat consumed by the office	Scope 2
Electricity consumption – location Paris	Emission that occurred during generation of electricity or heat consumed by the office	Scope 2
Airplane flights	Emissions from airplane flights by IJF employees and contractors	Scope 3
Van rented by IJF	Emissions from the operation of the rented van by IJF in Budapest	Scope 3

Emissions from airplane flights include flights from IJF employees and contractors.

IJF doesn't own vehicles as an organization's property. Therefore, no Scope 1 emissions from fuel combustion in vehicles are assessed.

4.3.2. Data collection

The activity data for each of the three locations were provided by the IJF through the completion of the questionnaires.

Data collected for location in Budapest are:

- Overall fuel consumption (diesel) of a van rented by IJF in liters in 2023,
- Total electricity consumption in 2023 for Presidential Office, headquarters and flat expressed in kWh, calculated as Total Paid Cost / Unit price.
- Total consumption of natural gas expressed in kWh in 2023 for Presidential Office, headquarters and flat, calculated as Total Paid Cost / Unit price.
- The confirmation that no changes occurred regarding the number and the type of air-conditioning and cooling devices compared to 2022 (in 2022: 13 air-conditioning devices, 5 refrigerators and 1 wine cooler).

Data collected for location in Abu Dhabi are:

- Estimation of the monthly cost of electricity for IJF office with information on unit price, in order to determine electricity consumption.
- The confirmation that there is no change on the refrigerants and on the usage of centralized cooling system with the gas type R-22 and one kitchen refrigerant with the gas type R-134a.

Data collected for location in Paris are:

- Electricity consumption in 2023 for office in Paris expressed in kWh.

- The confirmation that no air conditioning is used and one kitchen refrigerant is used in the office with R600a refrigerant type.

Data for airplane flights were obtained from flight tickets for each passenger and processed by IJF.

4.3.3. GHG emissions sources

Energy demand of the premises – Scope 1 and Scope 2 emission category

Scope 1 direct emissions are associated with the combustion of natural gas in the boilers at the Presidential office, headquarters, and a flat in Budapest. Indirect Scope 2 emissions relate to the electricity consumption across all locations.

HCF leakage from cooling equipment – Scope 1 fugitive emission category

Information on cooling equipment and refrigerant gases used was provided for all locations. One refrigerator and 13 air conditioners utilize refrigerant gases with a global warming potential (1 refrigerator uses R-134a, and 13 air conditioners use R-32). An annual leakage estimate of 0.5% of the refrigerant quantity is applied for emission assessment, based on the equipment size category. Seven refrigerators already contain newer-generation refrigerant gases with zero climate impact (R-600a).

Business travel – Scope 3 emission category

The largest portion of IJF's annual GHG emissions originates from airplane flights. The total number of flights associated with 20 events in 2023 was analyzed, and the corresponding GHG emissions were estimated. The distance in kilometers for each flight route (including both direct and transfer flights) was determined, and emissions were calculated based on emissions per passenger-kilometer, which vary for Economy, Business, and First-class tickets. The data processed included all IJF employees as well as contractors whose tickets were paid for by IJF. The results for each event are shown in Figure 4-3.

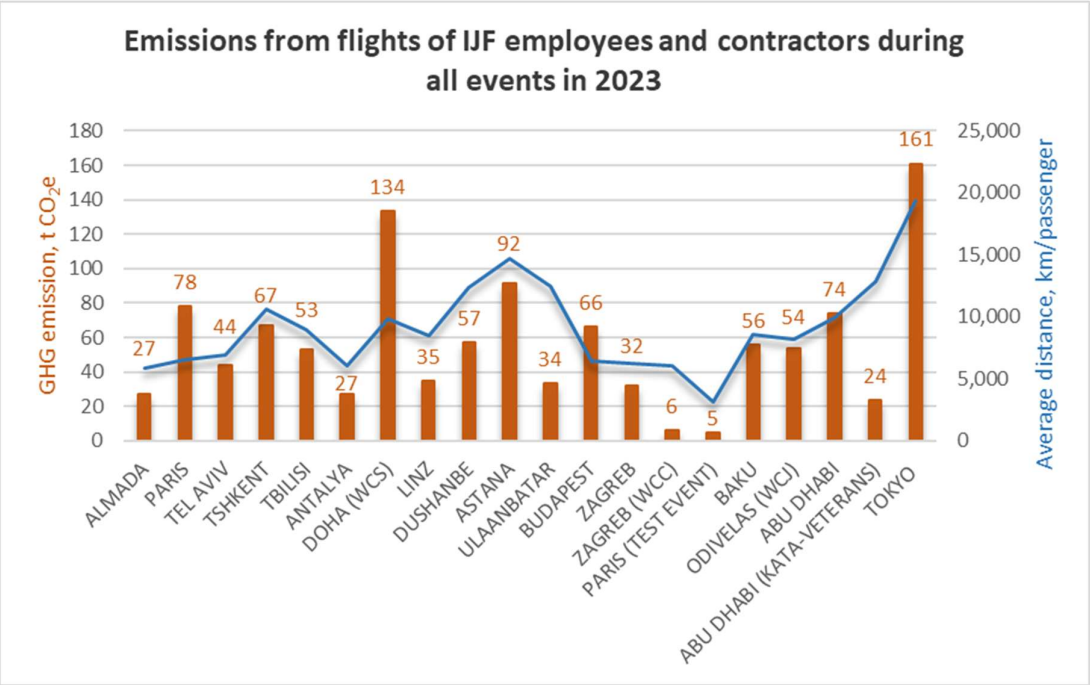

Figure 4-1: GHG emissions from IJF employees and contractors flights during events in 2023

Upstream leased assets – Scope 3 emission category

Emissions from one rented van are included in this category, as it falls under the scope of upstream leased assets.

5. Results

The results of GHG emission calculation performed within this Report include carbon footprint assessment of two sport events and yearly GHG inventory for IJF as an organization.

Results from carbon footprint assessment of Grand Prix Zagreb 2024, Grand Slam Tokyo 2024 and IJF are presented in Table 5-1, Table 5-2 and Table 5-3, respectively.

Table 5-1, Table 5-2 and Table 5-3 contain the information on:

- identified activities that result in GHG emissions,
- identified GHG emission sources,
- short description of activity data collection process,
- assessment of activity data uncertainty (low uncertainty – good quality of received data; high uncertainty – low quality of received data),
- scope per each CF assessment segment (as presented in Figure 3-2) according to GHG Protocol categorization,
- scope within overall IJF CF assessment also according to GHG Protocol but taking into account that sport event CF is classified as a Scope 3 category 14 – Franchises, within the context of this assessment (as explained in Table 3-3), applicable primarily to events,
- GHG emission of each emission source (t CO_2e),
- total GHG emission per assessment segment (events / IJF sport organization).

The share of emissions from each activity by Grand Prix Zagreb 2024, Grand Slam Tokyo 2024 and IJF are presented in Figure 5-1, Figure 5-2 and Figure 5-3, respectively.

Table 5-1: Carbon footprint assessment of Grand Prix Zagreb 2024

CARBON FOOTPRINT ASSESSMENT SEGMENT	*Time period covered by the GHG inventory*	*Activities that result in GHG emissions*	*Identified emissions sources*	*Activity data*	*Activity data uncertainty*	*Scope per each CF assessment segment*	*Scope within overall IJF CF assessment*	*t CO_2e*	***t CO_2e TOTAL***
Sport event CF: Grand Prix Zagreb	13th - 15th of September 2024	Organized transport during event	Diesel combustion in shuttle buses and vans/minibuses	fullfiled via questionnaire by event organizers	low	Scope 1	Scope 3	4.18	105
			Gasoline combustion in rented and shuttle cars		low				
			Diesel combustion in rented and shuttle cars		low				
		Hotels energy consumption	Imported electricity	no data received directly from hotels, default emission factors were used	medium	Scope 2	Scope 3	7.3	
			Natural gas combustion			Scope 1		3.01	
		Sport venue energy consumption	Imported electricity	no data for 2024 received; consumption received by venue management in 2021 is used	medium	Scope 2	Scope 3	8.44	
		Transport of participants and staff to and from event city	Fuel combustion in cars	approximately half of the travel data was obtained through the online survey, while the remaining data was sourced from records maintained by the travel agency responsible for participant reception and accommodation	low	Scope 3	Scope 3	5.75	
			Fuel combustion in bus			Scope 3		0.41	
			Fuel combustion in minibus			Scope 3		1.26	
			Fuel combustion in airplanes			Scope 3		56.45	
		Meals served in hotel and by catering service in the sport venue	Food supply chain emissions - breakfasts in hotels	default emission factors were used	medium	Scope 3	Scope 3	2.43	
			Food supply chain emissions - lunches and dinners	default emission factors were used	medium	Scope 3		15.28	

Table 5-2: Carbon footprint assessment of Grand Slam Tokyo 2024

CARBON FOOTPRINT ASSESSMENT SEGMENT	*Time period covered by the GHG inventory*	*Activities that result in GHG emissions*	*Identified emissions sources*	*Activity data*	*Activity data uncertainty*	*Scope per each CF assessment segment*	*Scope within overall IJF CF assessment*	*t CO_2e*	***t CO_2e TOTAL***
Sport event CF: Grand Slam Tokyo	7th - 8th of December 2024	Organized transport during event	Diesel combustion in shuttle buses	fullfiled via questionnaire by event organizers	low	Scope 1	Scope 3	1.76	**790**
			Gasoline combustion in shuttle vans		low				
		Hotels energy consumption	Imported electricity	no data received directly from hotels, default emission factors were used	medium	Scope 2	Scope 3	29.67	
			Natural gas combustion			Scope 1		5.05	
		Sport venue energy consumption	Imported electricity		medium	Scope 2	Scope 3	1.62	
		Transport of participants and staff to and from event city	Fuel combustion in airplanes	all data received from the records of event organizer	low	Scope 3	Scope 3	725.31	
		Meals served in hotel and by catering service in the sport venue	Food supply chain emissions - breakfasts in hotels	default emission factors were used	medium	Scope 3	Scope 3	5.2	
			Food supply chain emissions - lunches and dinners	default emission factors were used	medium	Scope 3		21.61	

Table 5-3: Carbon footprint assessment of sport organization International Judo Federation for the year 2023

CARBON FOOTPRINT ASSESSMENT SEGMENT	*Time period covered by the GHG inventory*	*Activities that result in GHG emissions*	*Identified emissions sources*	*Activity data*	*Activity data uncertainty*	*Scope per each CF assessment segment*	*Scope within overall IJF CF assessment*	*t CO_2e*	***t CO_2e TOTAL***
Sport organization CF: International Judo Federation	Calendar year 2023	Offices energy consumption	Natural gas combustion	fullfiled via questionnaire by IJF (total cost divided by unit price)	low	Scope 1	Scope 1	5.21	**1155**
			Purchased energy	fullfiled via questionnaire by IJF (total cost divided by unit price)	low	Scope 2	Scope 2	25.07	
		Offices air conditioning	HCF leakage	data on equipment and refrigerant gas fullfiled via questionnaire by IJF	low	Scope 1	Scope 1	0.04	
		IJF employees and contractors business flights	Fuel combustion in airplanes	flight tickets provided by IJF	low	Scope 3	Scope 3	1123.72	
		Transportation by rented van	Diesel combustion in van	fullfiled via questionnaire by IJF	low	Scope 3	Scope 3	0.62	

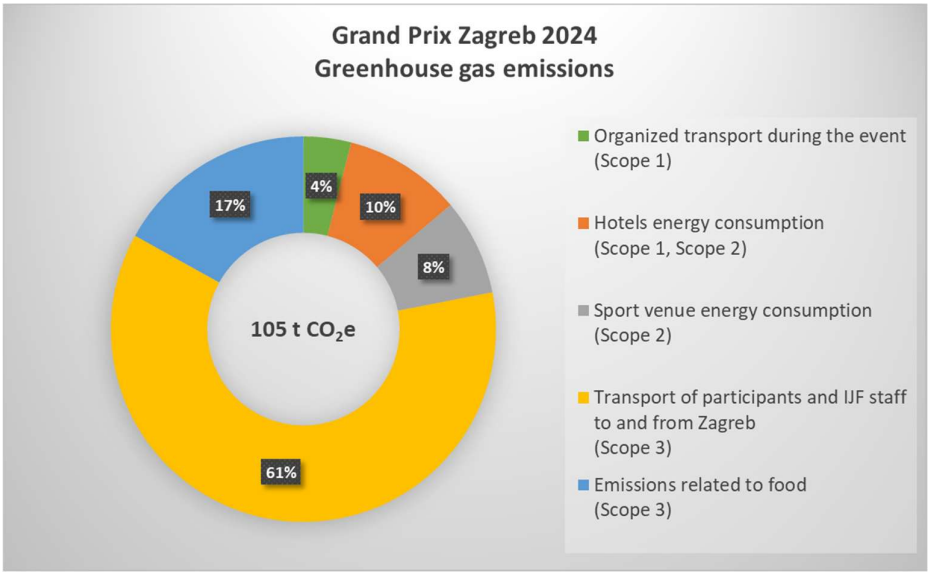

Figure 5-1: The share of GHG emissions from each activity for Grand Prix Zagreb 2024

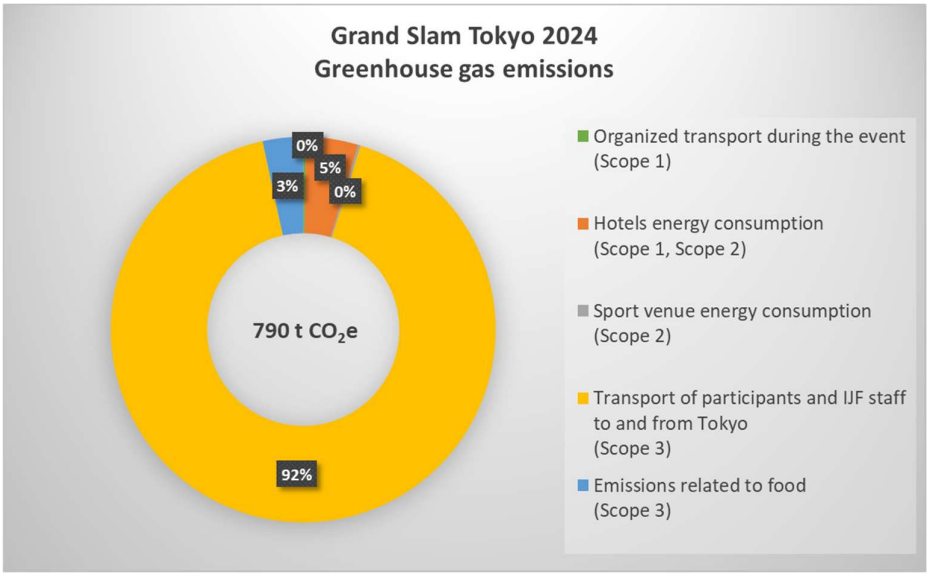

Figure 5-2: The share of GHG emissions from each activity for Grand Slam Tokyo 2024

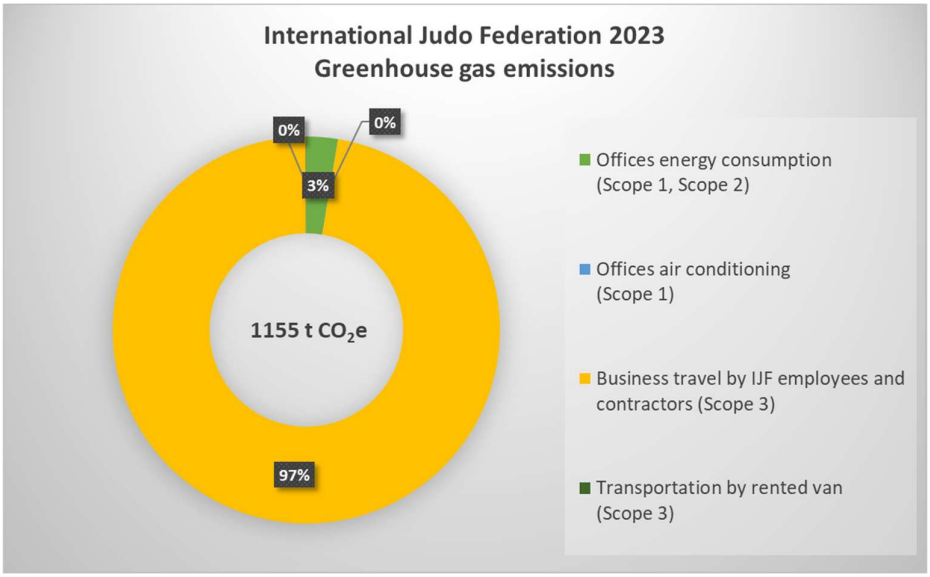

Figure 5-3: The share of GHG emissions from each activity for IJF as a sport organization

6. Analysis of the data for the period from 2021 to 2024

Carbon footprint assessments were performed for overall six WJT events during the period from 2021 to 2024. Event locations and carbon footprint values are presented in Figures 6-1 and 6-2.

Figure 6-1: WTJ events covered by carbon footprint assessment

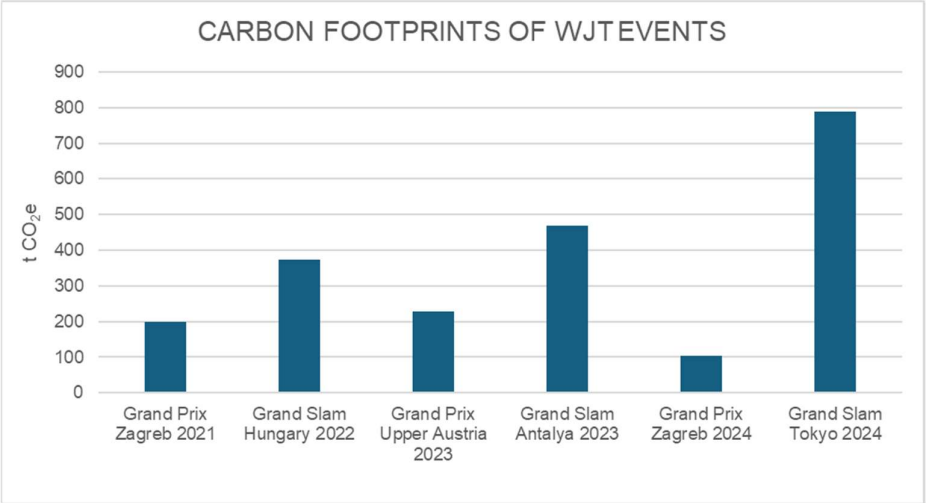

Figure 6-2: Carbon footprints of WTJ events

Total event GHG emissions depend largely on the emissions that result from transport of all participants to and from the tournament. Grand Slam in Japan has the highest assessed carbon footprint as can be seen in Figure 6-2. Analysis of the flight routes showed that Tokyo covered the longest distances for arrival and departure of tournament participants (Figure 6-3).

The Zagreb GP is the only event to date that has been subject to a carbon footprint assessment twice, in 2021 and 2024. In 2021, there was a major challenge in collecting

data on the participants' flights as it was the first case study of this type. To comply with GHG Protocol Standard and avoid the underestimation of GHG emissions, conservative routes were assumed that caused overestimated GHG emissions. The lack of quality activity data caused higher assessed carbon footprint (Figures 6-2 and 6-3) even though the total number of participants was lower than in 2024. For all case study events that followed Zagreb GP 2021, the travelling data collection process was improved, and the assessment accuracy was therefore significantly improved. It can be concluded that Zagreb GP held in 2024 results are more accurate representation of the carbon footprint of this WJT event.

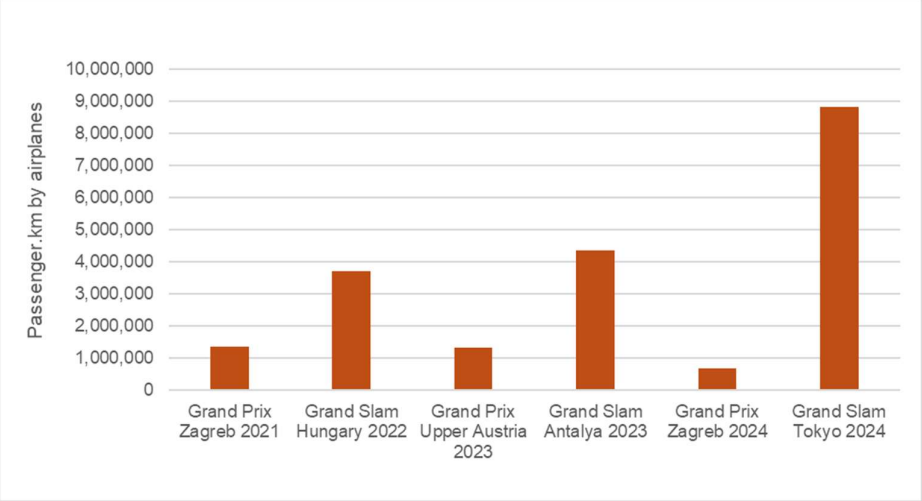

Figure 6-3: Total kilometers travelled by participants to arrive to and depart from WTJ events

Table 6-1 provides a quick overview of participants' origin continents. Although athletes and their team members are sometimes located somewhere else than their home countries in the time of visiting WJT event, in many cases the start and end point refer to their countries. Therefore, the data in the table below indicate lower or greater GHG emissions from travel, corresponding to the assessed event carbon footprint.

Table 6-1: Overview of event participants by continents

	Grand Prix Zagreb 2021	Grand Slam Hungary 2022	Grand Prix Upper Austria 2023	Grand Slam Antalya 2023	Grand Prix Zagreb 2024	Grand Slam Tokyo 2024
Total number of athletes	243	406	455	600	319	274
Nations	35	61	72	83	40	44
Continents	4	5	6	5	4	6
African Judo Union	5	7	23	31	1	1
Judo Union of Asia	0	108	38	124	16	161
European Judo Union	221	219	329	357	265	56
Oceania Judo Union	1	4	6	8	0	1
Panamerican Judo Confederation	16	68	54	80	37	35
Other	0	0	5	0	0	20

The data presented in Figure 6-4 show the used possibility of participants to arrive and depart the event by means of transport other than airplane. This opportunity is based on the distance to the event location (Table 6-1). The tournament GP Upper Austria is a great example where a significant share of using the road and also trains as the most environmentally friendly option resulted in lower emissions compared to crossing the same distances by airplanes.

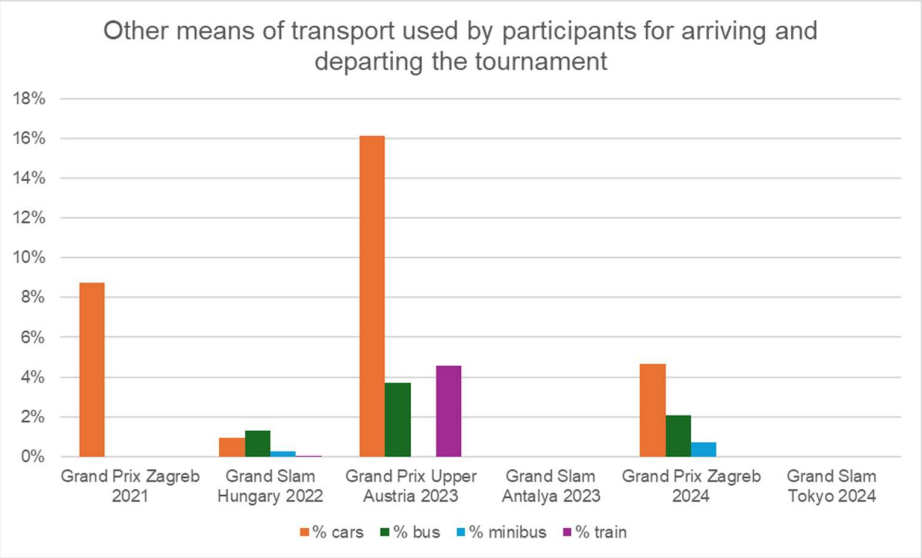

Figure 6-4: The share of means of transport other than airplanes for arrival and departure the event

It should be mentioned that IJF improves avoiding flight emissions by carefully planning the WJT event calendar so that consecutive events are close, when possible. The assessment of GS Hungary performed in 2022 estimated avoided GHG emissions due to the fact that the following tournament took place in Zagreb. By analysing the travel data during GS Hungary carbon footprint assessment, it was visible that a significant number of participants continued their sport journey by attending GP Zagreb instead of returning to their home country or other distant destinations. To make an estimate on the avoided GHG emissions from airplane flights, it was assumed that these participants would travel home after the GS Hungary and at some other time during the year they would travel again to attend the GP Zagreb. Avoided emissions from airplane flights amounted to 153 t CO_2e. Emissions from travelling to Zagreb by car, bus and minibus (actual emissions) amounted to 2.3 t CO_2e. The difference of approx. 150 t CO_2e represents the roughly estimated net avoided emissions and demonstrate the benefit of organizing consecutive events nearby.

Emissions from participants' travel to and from the tournament city significantly impact on the event's carbon footprint and are also the most difficult emission category to reduce. Therefore, to compare carbon footprints from different events fairly, emissions from participants' travel to and from the tournament city were excluded and the remaining amount of emissions was divided by the number of competing athletes

(indicator of the tournament size). The emission sources included in the emission intensity calculated in this way are as follows:

- Emissions related to energy consumption of hotels and sport venue
- Emissions caused by transport during the event
- Emissions related to food

Results are presented in Figure 6-5. It can be seen that tournaments are solidly comparable in their emissions per athlete. In the future, by implementing various sustainable practices, event organizers can lower their own emission intensity and contribute to IJF's Climate Action goals.

Figure 6-5: Event carbon footprint per athlete with travelling emissions excluded

It can be highlighted that the results from GP Upper Austria assessment showed their advantage in terms of 'cleaner' country-specific electric energy. The GS Hungary and GP Zagreb stand out with good performances in optimization of transport during the event (venue-hotels-airports).

Performing these six case studies revealed some challenges that mainly include lack of all needed activity data. Event organizers were often unable to fully motivate partnering organizations such as hotels and sport venue management to fulfill the detailed questionnaires. Therefore, in some cases average emission factors and assumptions were used to cover data gaps. An improvement is made in preparing the comprehensive data on travelling routes of all participants which significantly increased the accuracy of events' carbon footprints.

To conclude, judo event organizers worldwide are actively involved in sustainable efforts to minimize the negative impact of event activities on environment and climate. Not all events are currently at the same sustainability level as it highly depends on the possibilities each event organizing team for implementing improvements. It is important

to say that IJF with its activities that raise awareness of this important aspect has a wide reach and each year new opportunities and ideas arise.

7. Overview of sustainable efforts of all assessed tournaments in the period from 2021 to 2024

While performing the assessment of judo tournaments in the period from 2021 to 2024 a significant amount of information was gathered on the sustainability initiatives of events. Some initiatives don't impact the carbon footprint directly or are a part of categories that were excluded from the assessment. However, they all show the organizers' dedication to implementing as many activities as possible that are sustainable and help our planet. The table below presents some of these activities.

Table 7-1: Overview of sustainable initiatives

EVENT	SUSTAINABLE INITIATIVES
Grand Prix Zagreb 2021	○ separate waste collection (plastic, paper, biowaste) sent to recycling ○ donation of excess food ○ display of poster promoting waste recycling ○ the money collected from waste recycling (Croatian waste management system offers financial refund for plastic bottles) was used for purchasing the sportswear for young judoka with disabilities ○ public presentation of results at the Conference on sustainable development of sports organized by Croatian Judo Federation covered by media representatives
Grand Slam Hungary 2022	○ separate waste collection (plastic, paper, biowaste) sent to recycling ○ implementation of reusable drinking cup scheme in the sport venue ○ reusing large billboard in the sport venue to avoid plastic waste
Grand Prix Upper Austria 2023	○ travelling by train by event participants ○ apart from diesel cars, vans and buses, rented hybrid cars, and hybrid vans also were used for transportation of participants during the event ○ separate waste collection (plastic, paper, biowaste) sent to recycling
Grand Slam Antalya 2023	○ separate waste collection (plastic, paper, biowaste) sent to recycling
Grand Prix Zagreb 2024	○ increase of plant-based options by the catering in the sport venue ○ separate waste collection (plastic, paper, biowaste) sent to recycling
Grand Slam Tokyo 2024	○ implemented sustainability policy by the sport venue: "Zero Emission Tokyo Strategy" ○ implemented sustainability measures by the partnering hotels: waste reduction measures, improvement of waste separation, reusing food ingredients, hosting banquet events using the "CO_2 Zero" concept, using a Green Card System for eco-cleaning to reduce laundry, reduction of single-use plastics in restaurants by complying with the 2022 Plastic Resource Recycling Act, usage of straws made of 30% biomass material, water served in aluminium cans or paper bottles ○ separate waste collection (plastic, paper, biowaste) sent to recycling

8. Conclusions and suggestions for development of IJF Sustainability & Climate Action Plan

The International Judo Federation has a strong capacity in raising awareness about environmental protection and climate change combat worldwide. Sustainability efforts made by the International Judo Federation over the last years take place on multiple levels:

- Design and implementation of its own sustainability projects and campaigns
- Encouragement of its members to implement concrete measures that positively impact the environment
- Reaching a wider sport audience to make personal progress by educating and supporting sustainable practices

CARBON FOOTPRINT ASSESSMENTS

By assessing carbon footprints of several judo events and the organization itself over the years, IJF places Climate Change Combat in its focus area within the Sustainability Policy. The overview presented in Chapter 6 of this document gives a detailed insight into the results obtained and makes a basis for improvements in further activities regarding greenhouse gas emission reduction.

From the very beginnings of launching the Sport for Climate Action Framework, it has been clear to the framework management and to all of the signatories that the biggest challenge would be to halve the current level of emissions by 2030 with the aim to achieve net-zero by 2040. The reason lies in the fact that the sport community naturally requires large mobility and aims to increase the competitors attendance. It is therefore clear that the focus should be put on reducing the emissions from all sources, but no significant emission reductions that result from travelling can be expected in the future which makes it difficult to reach the global reduction goal.

Over the last years, six WTJ events at five different locations have been selected as case-studies for carbon footprint assessment. Methodology has been developed, that is:

- in line with GHG Protocol, a globally recognized standard for carbon footprint calculation and
- fully customized to WTJ events due to specific event organizational conditions and detailed data collection limitations.

The purpose of performed events' and organizational carbon footprint assessments includes:

- fulfillment of obligations under S4CA Framework
- getting a detailed insight into greenhouse gas emission sources and values
- detecting carbon hotspots
- development of Action Plan for greenhouse gas emissions reduction

SUSTAINABILITY & CLIMATE ACTION PLAN

The International Judo Federation as the roof organization of this indoor combat sport practiced around the globe has the potential to further develop its current sustainable practices and to introduce new ones.

The authors of this Study take well into account and compliment that the Federation has already developed and performed many important individual steps toward the sustainable future of judo community. It is recommended that IJF embeds its Sustainability Policy activities into a comprehensive Sustainability & Climate Action Plan for the upcoming period.

The Action Plan should include different emission categories GHG emission reduction and implementation of other initiatives with non-measurable positive effects on the Climate and the Environment. The Action Plan should be based on achievable and measurable goals that can be clearly communicated to all stakeholders. It is expected that such a systematic approach and its outcomes would be appreciated by the S4CA Framework management. This Chapter presents many possible options to be selected for focusing areas in the upcoming period.

Numerous initiatives for upgrading the sustainability level of IJF and WTJ events are presented in Chapters 8-1 and 8-2.

A schematic overview of the proposed approach for future activities is shown in Figure 8-1.

Based on the analysis of all the data and experiences gained in the period from 2021 to 2024 EKONERG team suggests to IJF to develop its comprehensive Sustainability & Climate Action Plan for the upcoming period that is based on the following three pillars:

1) Aim to achieve systematic improvement of the sustainability level of all WTJ events & selected Championships by carefully designed list of required criteria that include short-term and long-term achievable goals for reducing event carbon footprint and negative impact on the environment
2) Implementing a feasible set of measures for IJF offices and operations that would send a strong message and achieve a trackable progress in terms of Sustainability and Climate Action
3) Engagement of people and organizations that are a part of judo family worldwide to make individual efforts in the common goal of preserving the Planet

Figure 8-1: Proposal for Sustainability & Climate Action Plan for the upcoming period

8.1. Suggestions for future sustainable measures in WTJ events & Championships organization

1) INITIATIVE: Reduced energy demand of the partnering hotels

Description:

- Partnering with hotels with sustainable policy for accommodation of all competition participants.

Type of Initiative:

- Greenhouse gas emission reduction
- Protecting the environment

Status & Tracking:

- Setting an achievable trajectory/goal for a multi-year period for all WJT organizers.

2) INITIATIVE: Reduced energy demand of the partnering sport venues

Description:

- Promote partnering with venues that implement energy, waste, and water management strategies.

Type of Initiative:

- Greenhouse gas emission reduction
- Protecting the environment

Status & Tracking:

- Setting an achievable trajectory/goal for a multi-year period for all WJT organizers.

3) INITIATIVE: Optimizing transportation during judo events

Description:

- Minimize the distances between the venue and accommodation.
- Organized transport during sport events should include transitioning from diesel to gasoline in the first stage and from gasoline to hybrid/electric in the second stage.

Type of Initiative:

- Greenhouse gas emission reduction

Status & Tracking:

- Setting an achievable trajectory/goal for a multi-year period for all WJT organizers.

4) INITIATIVE: Improved waste management

Description:

- Enabling separate waste collection and sending to recycling processes.

Type of Initiative:

- Greenhouse gas emission reduction
- Protecting the environment

Status & Tracking:

- 2021 Zagreb Grand Prix already demonstrated excellent performance with this type of initiative. The benefits of waste avoidance and reduced emissions were estimated. Further promotion at WJT level encouraged.

5) INITIATIVE: Food waste reduction

Description:

- Organize donation of sealed, unused food from judo events.

Type of Initiative:

- Food waste reduction initiative *Compliance with Food Loss and Waste Accounting and Reporting Standard published by the World Resources Institute: 'Minimizing food loss and waste can provide economic benefits, enhance food security, improve natural resource use efficiency, and reduce environmental impacts.'*

Status & Tracking:

- This initiative was highly successful in 2021 and showed measurable environmental benefits. High potential to introduce this practice at all WJT events.

6) INITIATIVE: Transport of tournament participants to and from event city

Description:

- This is the largest source of transport emissions with limited improvement opportunities.

Type of Initiative:

- Greenhouse gas emission reduction

Status & Tracking:

- Further discussions needed. Calculation of emissions must account for participant and fan travel, though success is likely limited unless IJF sets a concrete policy.

7) INITIATIVE: Engaging fans to use sustainable transport

Description:

- Launching initiatives to promote the use of more sustainable options for attending judo events.

Type of Initiative:

- Greenhouse gas emission reduction

Status & Tracking:

- Greenhouse gas emissions that arise from the transport of fans arriving to the sport arenas had not be assessed in carbon footprint calculations so far as the data collection process would be too complicated (also it is a fairly small emission source); if IJF decides to take action in this field we recommend the approach of selecting one host city and make a comparison of emissions from regular practices vs. with implemented schemes to motivate/enable less polluting options for visitors that arrive to the venue.

8) INITIATIVE: Increase sustainability of the food prepared during judo events

Description:

- Promote increased share of plant-based ingredients.
- Promote increased share of locally produced ingredients.
- Promote increased share of organic food.

Type of Initiative:

- Greenhouse gas emission reduction
- Supporting local suppliers
- Environmental protection

Status & Tracking:

- Setting an achievable trajectory/goal for a multi-year period for all WJT organizers

9) INITIATIVE: Minimise the use of paper

Description:

- Minimising the use of paper and using recycled paper and cardboard.

Type of Initiative:

- Greenhouse gas emission reduction by reducing the amount of generated waste

Status & Tracking:

- High potential to implement across WJT events.

10) INITIATIVE: Reuse of materials

Description:

- Promote reusing of all kinds of materials used during events, including judo tatami.

Type of Initiative:

- Greenhouse gas emission reduction
- Protecting the environment

Status & Tracking:

- High potential to implement across WJT events.

11) INITIATIVE: Reduced packaging & avoiding single-use plastic

Description:

- Avoiding plastic packaging by reducing packaging and using alternative more sustainable materials.
- Avoiding the use of single-use plastic for drinking cups, cutlery etc.

Type of Initiative:

- Greenhouse gas emission reduction
- Protecting the environment

Status & Tracking:

- High potential to implement across WJT events.

12) INITIATIVE: Engagement & Education

Description:

- Provide IJF sustainability posters throughout the athlete areas.
- Involve NGOs to raise awareness based on their expertise.

Type of Initiative:

- Indirect impact by raising awareness

Status & Tracking:

- Providing IJF sustainability posters throughout the athlete areas initiative is easy to implement on all WJT events and is an excellent communication platform.
- WJT event organizers can be motivated to collaborate with credible local NGOs

13) INITIATIVE: Carbon Offsetting

Description:

- Purchasing carbon offsetting units via verified platforms to cover all or part of the assessed event's greenhouse gas emissions.
- The possibility of declaring the tournament carbon neutral.

Type of Initiative:
- Greenhouse gas emission compensation

Status & Tracking:
- On request, EKONERG will present different carbon offsetting options for tournaments assessed during 2024 (Zagreb & Tokyo)

8.2. Suggestions for future sustainability measures in the IJF

1) INITIATIVE: Renewable energy projects & Energy savings

Description:
- Consider opportunities for potential energy savings and renewable energy utilization in IJF offices and transport fleet that would result in environmental benefits as well as long-term financial savings

Type of Initiative:
- Greenhouse gas emission compensation

Status & Tracking:
- Opportunities for small-scale or large-scale projects for renewable energy implementation / energy savings should be evaluated (e.g. solar power plant, heating pumps installation).

2) INITIATIVE: Working with suppliers on environmentally friendly products

Description:
- Promoting and supporting the purchase of such products for all the members of judo community.

Type of Initiative:
- Greenhouse gas emission compensation
- Protecting the environment

Status & Tracking:
- Ongoing project (e.g. Green Judogi initiative).

3) INITIATIVE: Increase of sustainability level of judo training halls worldwide

Description:
- Motivating IJF members to upgrade training halls for greater sustainability.

Type of Initiative:

- Greenhouse gas emission compensation
- Protecting the environment
- Raising awareness

Status & Tracking:

- Recent example: Green Dojo project.

4) INITIATIVE: Include other sources of greenhouse gas emission in the inventory and make a reduction plan

Description:

- Expand the GHG inventory to include overlooked sources like office materials. Several Scope 3 emission sources are excluded from the current inventory due to the insignificant share in the total emissions or due to lack of input data. As example is carbon footprint of office consumables.

Type of Initiative:

- Improvement of GHG inventory
- Making emission reduction plans

Status & Tracking:

- There is a potential to select one or more such categories and track a progress before and after implementation of improvements. Example is comparison of emissions related to currently purchased regular office paper replaced by recycled paper.

5) INITIATIVE: Collaborating with NGOs

Description:

- Collaborating with credible NGOs can be a great way to raise public awareness about sustainability.

Type of Initiative:

- Protecting the environment

Status & Tracking:

- IJF can support NGOs' activities or, even better, directly involve and launch joint action.

6) INITIATIVE: Engagement & Education

Description:

- Providing IJF sustainability posters throughout the athlete areas.

- Involving NGOs to raise awareness based on their expertise.

Type of Initiative:

Indirect impact by raising awareness

Status & Tracking:

- Providing IJF sustainability posters throughout the athlete areas initiative is easy to implement on all WJT events and is an excellent communication platform.
- Involving NGOs to raise awareness based on their expertise initiative is implemented during Grand Slam Paris competition; a great example that can motivate other events to collaborate with local NGOs.

7) INITIATIVE: Direct actions in nature

Description:

- Motivate or organize planting trees and waste collection events.

Type of Initiative:

- Greenhouse gas emission reduction
- Local ecosystem benefit

Status & Tracking:

- Great opportunity for direct action and awareness.

8) INITIATIVE: Promote composting

Description:

- Promoting composting as an easy nature solving process for organic waste can reduce significant amount of waste in the long term and can be especially important option for the communities where there is no organic waste disposal system. Composting organic waste is an excellent activity where judokas worldwide can contribute to IJF sustainability goals no matter the level of development of their local waste management system.

Type of Initiative:

- Greenhouse gas emission reduction

Status & Tracking:

- The motivational leaflet based on EKONERG's inputs can be distributed as part of the Green Dojo initiative or separately with a way to express recognition to the groups or individuals that made an effort.

9) INITIATIVE: Carbon Offsetting

Description:

- Purchasing carbon offsetting units via verified platforms to cover the organization's yearly greenhouse gas emissions.
- The possibility of declaring the organization's emission carbon neutral for a particular year.

Type of Initiative:

- Greenhouse gas emission compensation

Status & Tracking:

- EKONERG provides options upon request.

9. References

Ref 1: The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard – Revised Edition, World Business Council for Sustainable Development and World Resources Institute, 2004

Ref 2: GHG Protocol Scope 2 Guidance – An Amendment to the GHG Protocol Corporate Standard, A Corporate Accounting and Reporting Standard, World Resources Institute, 2015

Ref 3: Corporate Value Chain (Scope 3) Accounting and Reporting Standard – Supplement to the GHG Protocol Corporate Accounting and Reporting Standard, World Business Council for Sustainable Development and World Resources Institute, 2011

Ref 4: Technical Guidance for Calculating Scope 3 Emissions (version 1.0) – Supplement to the Corporate Value Chain (Scope 3) Accounting & Reporting Standard, World Resources Institute, 2013

Ref 5: Global Warming Potential Values, Greenhouse Gas Protocol, 2016

Ref 6: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, 2006

Ref 7: UK Government GHG Conversion Factors for Company Reporting, 2023

Ref 8: UK Government GHG Conversion Factors for Company Reporting, 2024

Ref 9: EIB Project Carbon Footprint Methodologies, 2023

Ref 10: IOC Carbon Footprint Methodology for the Olympic Games, 2018

List of Figures

List of Tables

List of Abbreviations

AJJF	All Judo Federation
CF	Carbon Footprint
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
EIB	European Investment Bank
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFCs	hydrofluorocarbons
IJF	International Judo Federation
IOC	International Olympic Committee
IPCC	Intergovernmental Panel on Climate Change
LCA	Life Cycle Assessment
N_2O	nitrous oxide
NF_3	nitrogen trifluoride
NGOs	Nongovernmental Organizations
PFCs	perfluorocarbons
S4CA	Sports for Climate Action
SDG	Sustainable Development Goals
SF_6	sulphur hexafluoride
WJT	World Judo Tour – a category in the official IJF event calendar available at https://www.ijf.org/calendar?year=2022&age=world_tour