

SYMPOSIUM ON THE OLYMPICS AND INTERNATIONAL LAW

THE CARBON FOOTPRINT OF THE GAMES – INTERNATIONAL CLIMATE CHANGE LAW AND THE OLYMPICS

*Rebecca Schmidt**

Olympic Games do not happen in a vacuum or a sports bubble. They are embedded in both local and global realities of a social, economic, and environmental nature. Environmental factors, in particular, have impacted the Olympic Movement for several decades. In this context, climate change is a more recent, yet increasingly important, issue on the agenda. This essay examines the Olympic Movement's multi-level climate change policy. Based on the goals established in the Paris Agreement,¹ the International Olympic Committee (IOC) and the UN Framework Convention on Climate Change (UNFCCC) launched the Sports for Climate Action Initiative in 2018.² In the context of the Olympics, this Initiative is implemented through the interplay between the IOC and actors at the local, host city level. Consequently, the system is highly dependent on local organizers' capabilities to meet the Initiative's ambitious targets, as well as on the IOC's willingness and ability to take an active role in steering and supporting host cities in this process.

The Olympic Movement, Environmental Protection, and Climate Change

As early as the 1990s, the IOC faced pressure to review its impact on the environment and establish policies to minimize it. This pressure was triggered by a combination of the severe effects that the Games—especially the Winter Games—had on local ecosystems, the increasing awareness of environmental problems among the general global public, and the unique nature of the Olympics as mega-events with an almost universal reach.³ In response, by the mid-1990s, the Olympic Movement had put environmental protection prominently on its agenda and developed several initiatives and policies for its implementation.⁴ Cooperation with the UN Environmental Programme facilitated this work.⁵

* *Postdoctoral Research Fellow at the VIROS Project at the Norwegian Research Center for Computers and Law, University of Oslo, Norway.*

¹ [Conference of the Parties, Adoption of the Paris Agreement](#), Dec. 12, 2015, UN Doc. FCCC/CP/2015/L.9/Rev/1.

² Int'l Olympic Comm., [IOC Takes Leadership Role in the UN Sports for Climate Action Initiative](#) (Dec 11, 2018).

³ See Graeme Hayes & John Karamichas, *Introduction: Sport Mega-Events, Sustainable Development and Civil Societies*, in OLYMPIC GAMES, MEGA-EVENTS AND CIVIL SOCIETIES 1 (Graeme Hayes & John Karamichas eds., 2012). For a more detailed overview of the development of an environmental protection regime by the Olympic Movement, see REBECCA SCHMIDT, [REGULATORY INTEGRATION ACROSS BORDERS – PUBLIC PRIVATE COOPERATION IN TRANSNATIONAL REGULATION](#) 154 (2018).

⁴ See Int'l Olympic Comm., [Sustainability and Legacy Commission; Olympic Charter](#), Rule 2. For a summary of the different environment-related activities, see Int'l Olympic Comm., [Factsheet – The Environment and Sustainable Development](#) (2014).

⁵ The cooperation builds on an agreement between the two organizations, which is on file with the author but not publicly available.

Recently, the IOC has started a more comprehensive reform process to react to increasing societal demands towards the sports sector. To this end, it launched its Agenda 2020, a list of forty recommendations on the Olympic Movement's future, which includes two recommendations specifically on sustainability and the environment.⁶ The IOC also aligned with the UN Agenda 2030 and its Sustainable Development Goals, which cover climate change in Goal 13.⁷ To implement these policy advances, the IOC developed a Sustainability Strategy outlining its contribution to sustainability across three spheres: the IOC as an organization, as the owner of the Olympic Games, and as leader of the Olympic Movement.⁸

Two aspects need to be considered when addressing climate change in the Olympic context: First, sports mega-events such as the Olympics often leave a significant environmental footprint. As such, they negatively impact the climate by being responsible for large amounts of greenhouse gas emissions through factors such as travel of teams and fans, energy use during the events, and construction.⁹ Second, large sporting events are also prone to be affected by climate-related impacts. In the context of the Olympics, this is true for both Summer and Winter Games, with the latter being mainly at risk. Winter sports are dependent on weather conditions that are becoming increasingly scarce in many regions. A recent study led by the University of Waterloo found that if greenhouse gas emissions are not drastically reduced, only eight of the last twenty-one host cities of the Winter Olympics would provide reliable enough weather conditions to host the games by 2050.¹⁰ Non-winter sports can be significantly affected as well. For example, high temperatures may increase health risks for athletes and spectators at outdoor events; extreme temperatures, storms, or coastal erosions may damage sports venues.¹¹

The Olympic Movement's Contribution to Tackling the Challenges of Climate Change?

In the Paris Agreement governments agreed to “[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels.”¹² Even though only states (plus the EU) are parties to it, the Agreement emphasises that climate action includes all levels of society.¹³ Integration of non-state actors is also facilitated by the bottom-up approach that the Agreement adopts. Thus, states must communicate extensive climate action plans, so-called “nationally determined contributions.”¹⁴ Here they can integrate non-state actors in manners most adequate to meet their commitments.¹⁵ Such a collaborative spirit is also present at the transnational level. Several initiatives between the UNFCCC and non-state actors were launched with the approval of the Conference of Parties. A prominent example is the Global Climate Action Portal (NAZCA), where actors from all segments of society can display their climate change commitments. Similar to states, non-state actors determine their own contributions to tackle climate change. To date 26,975 actions by 18,119 actors are

⁶ Int'l Olympic Comm., [Olympic Agenda 2020](#), Recommendation 4 and 5.

⁷ G.A. Res. 70/1, [Transforming Our World: the 2030 Agenda for Sustainable Development](#) (Oct. 21, 2015).

⁸ Int'l Olympic Comm., [Sustainability Strategy, Executive Summary](#).

⁹ UN Climate Change, [Sports for Climate Action Framework, Version 02.0](#), para. 7 [hereinafter Sports for Climate Action Framework]. For a very detailed overview of the different positions in the context of large sports events relevant to the carbon footprint, see Int'l Olympic Comm., [Carbon Footprint Methodology for the Olympic Games](#) (2018).

¹⁰ See Kendra Pierre-Louis & Nadja Popovich, [Of 21 Winter Olympic Cities, Many May Soon Be Too Warm to Host the Games](#), N.Y. TIMES (Jan. 11, 2018).

¹¹ [Sports for Climate Action Framework](#), *supra* note 9, para. 9.

¹² [UN Doc. FCCC/CP/2015/L.9/Rev/1](#), art. 2 (a); [Sports for Climate Action Framework](#), *supra* note 9, at paras. 5 and 12.

¹³ [UN Doc. FCCC/CP/2015/L.9/Rev/1](#), pmb. para. 15.

¹⁴ *Id.* art. 2.4.

¹⁵ David Wei, [C2ES-Linking Non-State Action with the U.N. Framework Convention on Climate Change](#) (Oct. 2016).

listed.¹⁶ The Sports for Climate Action Initiative, jointly developed by the UNFCCC and the IOC in 2018, is among the non-state actors listing its commitments on NAZCA.¹⁷

The UNFCCC also published the Sports for Climate Action Framework.¹⁸ Various sports actors, such as federations, clubs, or Olympic Organising Committees (OCOGs), have signed up to it.¹⁹ Participants pledge to make concrete commitments and apply verified standards for measuring, reporting, and reducing emissions.²⁰ To this end, the Framework asks signatories to develop a “climate action agenda for sport” that sets out commitments based on five principles:

Principle 1: Undertake systematic efforts to promote greater environmental responsibility;

Principle 2: Reduce overall climate impact;

Principle 3: Educate for climate action;

Principle 4: Promote sustainable and responsible consumption;

Principle 5: Advocate for climate action through communication.²¹

Principle 2 is central and requires some more elaboration: Its goal is for sports actors to achieve climate neutrality for their organization and events.²² The Framework provides critical steps through which this can be accomplished. The first step is to “measure and understand.”²³ Here, information on activities is gathered, and a quantitative measure of the greenhouse gas emissions is established. This data is then used by decision-makers to understand the overall climate impact of their organization and activities and to determine which activities have the most significant effect.²⁴ In a second step, the Framework asks organizations to take action to mitigate their carbon footprint. It suggests a hierarchical approach starting with avoidance of emissions, followed by their reduction and substitution, and finally, by their compensation through UNFCCC recognized mechanisms. An additional, important step is reporting the climate footprint and the actions taken to mitigate it.²⁵

To understand how the Framework is implemented, let us now turn to the IOC and its main deliverable—the Olympic Games. On the transnational level, the IOC, rather than providing a detailed list with requirements, only sets out the general direction. Thus, in its Sustainability Strategy, the IOC has promulgated the goal of achieving “carbon neutrality by reducing direct and indirect GHG emissions, and by compensating emissions as a last resort” by 2030.²⁶ This is to be achieved through “effective carbon reduction strategies” aligned with the Paris Agreement’s goals outlined above. The Sustainability Strategy provides a list of requirements, which are applicable to the Olympic Games from 2026 onwards:

- OCOGs and host cities [are] to minimise the Olympic Games’ carbon emission;
- OCOGs [are] to compensate their “direct”/“owned” emission,

¹⁶ GLOBAL CLIMATE ACTION.

¹⁷ Int’l Olympic Comm., [IOC Takes Leadership Role in the UN Sports for Climate Action Initiative](#) (Dec 11, 2018).

¹⁸ [Sports for Climate Action Framework](#), *supra* note 9.

¹⁹ To date, 132 sports organizations have signed the Framework; *see* United Nations Climate Change, [Participants in the Sports for Climate Action Framework](#).

²⁰ Int’l Olympic Comm., [IOC Takes Leadership Role in the UN Sports for Climate Action Initiative](#) (Dec. 11, 2018).

²¹ [Sports for Climate Action Framework](#), *supra* note 9, at para. 18.

²² *Id.* at para. 22.

²³ *Id.* at paras. 23-25.

²⁴ *Id.* at para. 25.

²⁵ *Id.* at para. 26.

²⁶ *Id.*; Int’l Olympic Comm., [Sustainability Strategy](#), 42.

- OCOGs and host cities [are] to promote low carbon solutions for and through the Olympic Games in the host country, [and]
- Candidate cities, OCOGs, and host cities [are] to take into account the potential consequences of climate change when selecting Olympic Games locations.²⁷

These requirements are included by reference into the IOC Host City Contract's Operational Requirements, specifically the Sustainability and Legacy Section, and thus made binding for host cities.

The Sustainability and Legacy Section further obliges the respective OCOG to develop a sustainability strategy where it must identify its specific sustainability objectives in line with the requirements in the IOC's Sustainability Strategy.²⁸ This is done in cooperation with host country authorities, and the IOC, which also needs to give its approval before publication of the objectives.²⁹ The OCOG's sustainability strategy must be complemented with implementation plans³⁰ and a sustainability management system that is in line with ISO 20121:2012 on Sustainable Events Management.³¹ Furthermore, OCOGs must prepare three sustainability reports (two pre- and one post-Games), which outline the host country's progress in delivering the sustainability strategy. These reports must conform to internationally recognized reporting standards (such as the Global Reporting Initiative standards).³²

Additionally, OCOGs also need to develop a specific Carbon Management Plan to measure and minimize carbon emissions. For that purpose, the IOC published the Carbon Footprint Methodology Guideline, a technical document covering aspects such as methodological principles and technical guidance for measuring and calculating carbon footprints.³³ The Guideline uses a methodology consistent with the Greenhouse Gas Protocol, ISO 14064 and the European Commission's Organisation Environmental Footprint.³⁴ Based on it, OCOGs are to set up an iterative process where they first estimate the carbon footprint of the Games based on planning documents and assumptions. This constitutes a basis for the carbon management plan and is part of the initial carbon footprint report. In a second step, a carbon footprint reduction plan is developed and implemented. Based on this, a revised carbon footprint report is published. Finally, after the Games, the actual footprint is measured and reported.³⁵

As this section showed, climate change regulation in the context of the Olympics is predominantly implemented contractually. Critically, the success of this approach depends on the capabilities of the host cities and the ability of the IOC to steer and support them. In the past, the IOC did not always succeed in ensuring compliance with sustainability requirements.³⁶ A particular problem was a sunk cost dynamic that set in once the Games were awarded. Even though host city contracts give the IOC a lot of power to determine even minor details of the events, it is difficult to enforce some of the more overarching issues, especially as the event approaches. The ultimate "stick," the revocation of the Games, would not only affect the host city but would also be extremely damaging to the IOC. In anticipation of such problems the bidding process has become more stringent in recent years, and the IOC is more involved at the application and preparation stage providing assistance to potential host cities.³⁷ Parts of the

²⁷ [Int'l Olympic Comm.](#), *supra* note 26, at Annex 3, 54.

²⁸ [Int'l Olympic Comm.](#), [Host City Contract - Operational Requirements](#) SUS 01, 166 (June 2018).

²⁹ *Id.* SUS 01, 166.

³⁰ *Id.* SUS 02, 166.

³¹ *Id.* SUS 04, 167.

³² *Id.* SUS 06, 167.

³³ [Int'l Olympic Comm.](#), [Carbon Footprint Methodology for the Olympic Games](#) (Dec. 2018).

³⁴ *Id.* at 12 and 17.

³⁵ *Id.* at 20.

³⁶ *E.g.*, Judith Mair, [Sochi 2014 – a 'Rich Green Legacy' to Remember . . . or Forget?](#), *CONVERSATION* (Feb. 9, 2014).

³⁷ [Olympic Agenda 2020](#), *supra* note 6, Recommendation 1-3.

newer sustainability requirements are also helpful in facilitating commitments. As they emphasise the reuse of existing infrastructure and venues, they lower the burden on host cities, and make implementation easier. However, as the next section will show, successfully lowering emissions of a mega-event like the Olympics remains a challenging endeavor.

Climate Change Actions on the Ground—A Closer Look at Tokyo 2021

The OCOG of the Tokyo Olympics is a signatory of the Sports for Climate Action Framework and, thus, adheres to the Five Principles outlined above.³⁸ Moreover, the IOC's Sustainability Strategy sets out a list of requirements, which, as mentioned, are directly and fully applicable to the Olympic Games from 2026 onwards. However, even though these requirements are not binding on Tokyo 2021, the Tokyo OCOG has aligned its practices with them.

Lowering carbon emissions already featured prominently in Tokyo's application file. One of the three pillars of its proposed sustainability strategy was to achieve "minimal impact Games," which encompassed "carbon-neutral Games by reducing energy and resource consumption and carbon emissions, using renewable energy, public transport, and low-energy vehicles, and zero-waste policies."³⁹ This translated into five proposed key approaches in the sustainability strategy, which were predominantly focusing on avoidance and reduction: strategic site plan (reusing venues, and planning new ones also to reduce transport emissions), low carbon and energy facility and venues, use of renewable energy facilities, low emission, and fuel-efficient vehicles, and a carbon reduction campaign for the broader community.⁴⁰

When awarded the Games, the bids made in the application file became binding through and together with the general obligations in the host city contract.⁴¹ Accordingly, the OCOG must develop a sustainability strategy including a carbon management plan; there must be an implementation plan and a management system in place. Furthermore, at least three sustainability reports must be published.⁴²

Thus, the OCOG developed the Tokyo 2020 Olympic and Paralympic Games Sustainability Plan, which includes a carbon strategy.⁴³ The main direction in the carbon strategy is "towards zero carbon." However, this does not mean the planners expect to arrive at zero carbon emissions, but instead refers to the ideal path actions should take.⁴⁴ In line with the iterative approach outlined in the Carbon Footprint Methodology Guideline, the OCOG first measured the initial carbon footprint by calculating "the sum of all the activity levels multiplied by their corresponding greenhouse gas (GHG) emission intensity."⁴⁵ Based on this calculation, three actions (aligned with the actions under Principle 2 of the Sports for Climate Action Framework) are taken to reduce the carbon footprint: "Avoidance measures," "Reduction measures," and "Offset measures."⁴⁶

These three measures are further specified through concrete items, targets, and indicators. To illustrate this: one item in the section of emission avoidance is "strategic venue planning for the maximum use of existing venues and

³⁸ UN Climate Change, [Participants in the Sports for Climate Action Framework](#).

³⁹ Tokyo 2020, [Candidature File – Part 05 Environment](#) 50 (2013).

⁴⁰ *Id.* at 60.

⁴¹ [Host City Contract – Games of the XXXII Olympiad in 2020](#), Section 7; Int'l Olympic Comm., [Host City Contract Operational Requirements](#), sec. 5.6 (Dec. 2016).

⁴² [Host City Contract Operational Requirements](#), *supra* note 41, at sec. 5.6.

⁴³ Tokyo 2020, [Tokyo 2020 Olympic and Paralympic Games Sustainability Plan, Version 2](#) (June 2018).

⁴⁴ *Id.* at 22.

⁴⁵ Tokyo 2020, [Sustainability Pre-Games Report](#) 45 (Apr. 2020).

⁴⁶ [Tokyo 2020](#), *supra* note 43, at 22.

transport networks.” This translates into the target of reusing “a ratio of 58% of existing competition venues,” and an indicator consisting of “the number of existing competition venues used vs. the total number of competition venues.”⁴⁷ In total, twelve items and nineteen targets are identified in the Plan. Some have already been achieved, but, overall, results are still preliminary as the Games have not yet taken place. So far, the OCOG calculated that the measures combined have led to a reduction of 0.279 million t-CO₂ compared to the business as usual scenario.

However, despite avoidance and reduction measures, 2.730 million tons of CO₂ have been or will still be emitted, so there is a significant need for offset measures. To this end, the Organisers have implemented a carbon offset program with the assistance of the Tokyo Metropolitan Government and the Saitama Prefectural Government. Businesses who participate in the cap-and-trade programs of these two administrations can implement energy-saving measures. Credits earned in this way may then be designated to offset carbon emissions from the Olympic Games.⁴⁸ In February 2020, credits for 3,149,739 tons of CO₂ have been obtained by both programs, and the OCOG expects “to offset a certain amount of carbon emissions from the Games.”⁴⁹

Concluding Observations and Outlook

Like many globally operating industries, the sports sector and, at its forefront, the IOC have joined the Paris pledge to reduce carbon emissions with ambitious goals that do signal a serious commitment. As with other energy-intensive industries, success will depend on whether these can be successfully implemented on the ground. The main legal instrument to ensure these commitments are host city contracts. Those set binding requirements future host cities must implement. However, the ongoing preparations for the Tokyo Olympic Games show that truly reducing emissions at an event of the Olympic Games’ size is easier said than done. So far, reductions only amount to 9.2% compared to the business as usual case. The Paris Agreement and the Sports for Climate Action Framework mandate that future Games such as Paris 2024 and Los Angeles 2028 must meet their higher reduction targets.⁵⁰ At this point it is too early for a conclusive evaluation of whether these reforms will achieve their intended outcome.

⁴⁷ [Tokyo 2020](#), *supra* note 45, at 40.

⁴⁸ *Id.* at 65.

⁴⁹ *Id.* at 66.

⁵⁰ Paris 2024, [A Responsible Project](#); Int’l Olympic Comm., [Olympic Games to Become “Climate Positive” from 2030](#) (Mar. 4, 2020).