

Liberté Égalité Fraternité



RECOMMENDED METHODOLOGY FOR THE USE OF ORGANISERS OF EUROPEAN SPORTS EVENTS

Implement a low-carbon and efficient waste reduction strategy (towards 0 waste)

Document developed in collaboration with Oxygène



EDITORIAL

As part of the new European strategy for the environment and climate, called the European Green Deal¹, the sports sector must rethink the organisation of future sporting events, whatever their size, by taking into account environmental issues. These events are indeed a popular and media showcase offering opportunities to raise awareness and participate in a global awareness of ecological transition. They are therefore able to trigger behavioural changes among the French.

While some countries or organisers have not waited to commit to more environmentally friendly and sustainable sports events the transposition of good practices is not always easy. Legislation, the involvement of stakeholders, or the characteristics of the event or the territory hosting it are indeed all factors to be taken into account, and likely to make good practices difficult to transpose as they stand. It therefore appeared necessary to carry out a joint reflection with the other EU Member States, within the Framework of the European Union Work Plan for Sport 2021-2024², and in application of the Conclusions adopted by the Council of EU sports ministers, meeting on 4 April in Luxembourg under the French Presidency³.

The first step was materialised by the organisation of a peer learning activity on April 13 and 14, 2022 at the Ministry of Sports and the Olympic and Paralympic Games in Paris, which made possible rich exchanges between experts in sport and sustainability of the EU. Organised by the Sports Directorate, with the support of the Oxygène agency, this event, co-financed by the European Commission, made it possible to draw up an inventory of good practices within the EU. Beyond a simple mapping, this collegial reflection gave rise to a set of concrete methodological recommendations promoting environmentally-friendly practices through the organisation of sportsevents.

This report takes up and enriches the best practices and methodological advice presented and discussed during this event, emphasising the conditions for the success of the various initiatives as well as recommendations for action and strategic orientations.

I hope that sports events organisers the organisers of sporting events - whatever the scale, discipline, location, etc. - can draw inspiration from the best practices set out in this document. Based on the lessons presented, the actors in the field must indeed be able to make more informed decisions, without reducing the number of sporting events and their quality, both from the point of view of sporting performance, the spectacle offered to the public than the territorial impact.

Conversely, I invite the organisers to continue to share their best practices. I hope that the dynamic initiated by this work will be accelerated, given the importance of the issues.



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A green pact for Europe | European Commission (europa.eu)

² https://eur-lex.europa.eu/legal-content/FR/TXT/PDF/?uri=CELEX:42020Y1204(01)&from=EN

³ http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=uriserv:OJ.C_.2022.170.01.0001.01.ENG

INTRODUCTION

On the European continent, various studies estimate that the sports sector represents between 3.4% and 3.7% of the GDP for approximately 15 million jobs⁴.

On a European scale, 700 000 clubs⁵ organise sports and regular meetings which are all sporting events of various sizes. In France, 2.5 million sporting events are organised each year⁶.

In 2014, 48% of Europeans (% of the population aged 15 and over) declared that they practiced a physical sport, fitness or recreational (leisure) activity at least once a week⁷. 31% of them also declare (% of the population aged 16 and over) that they participated in live sporting events at least once in the last 12 months in 2015, and 45% of 16–29-year-olds⁸.

If sporting events have an intrinsic positive social impact linked to the DNA of sports practice (spirit of the body, sense of collective, self-transcendence, mutual aid, etc.), in a less visible way, they also have an impact on the environment and must be taken into account more objectively.

Indeed, the organisation of a sporting event occasionally brings together, in a given place, a



multitude of audiences (spectators, service providers, sportsmen and women, partners, volunteers), whose reception involves the consumption of materials, energy, resources, or the use of construction of infrastructure (stadiums, accommodation, transport).

2.5 tonnes of waste, 500kg of paper, and an energy consumption of around 1000 kWh. These figures are the first revealing indicators of what an event of barely 5,000 participants can generate, according to the Poitou-Charentes Guide to eco-events produced by ADEME in January 2014.

For more than a decade now, various French and European actors have been committed to mobilising sports actors in the fight against global warming and in particular the organisers of sporting events. The institutions of the European Union have also recently adopted a common framework for sport to be used as a promising lever for transforming behaviour for sustainable development.

This report, the result of the Peer learning activity organised on April 13 and 14, 2022 in Paris at the Ministry of Sports and the Olympic and Paralympic Games, presents the issues and existing methodologies as well as the areas to be favoured

to reduce the carbon footprint of a sporting event and fight against the massive production of the waste it generates. It aims to share good practices and knowledge from different European organisers and to strengthen the existing collective dynamic in order to identify the levers and achieve the objectives set out under the Paris Agreement in 2015. More specifically, this report offers a methodological framework specifying both the definitions and the issues as well as proposing practical recommendations. It is supplemented by a review of existing European and international actions presenting initiatives implemented by organisers and infrastructure managers in terms of reducing the carbon footprint and reducing waste.

It offers a roadmap to the main players and organisers of sporting events in Europe and aims to raise awareness of the need to act in order to preserve the ability of future generations to practice sport and derive all its benefits, as well as to be one of the spectators. Celui-ci a pour ambition de partager les connaissances de différents organisateurs européens, leurs bonnes pratiques et de renforcer une dynamique collective pour identifier les leviers et atteindre les objectifs fixés notamment lors de l'Accord de Paris en 2015.

⁴ https://www.touteleurope.eu/societe/le-sport-dans-l-union-europeenne/

⁵ https://www.sports.gouv.fr/les-chartes-des-15-engagements-ecoresponsables-1156

⁶ https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj07vf-p6n8AhUMTKQEHXrODtkQFnoECDUQAQ&url=https%3A%2F%2Fwww.education.gouv.fr%2Fmedia%2F72332%2Fdownload&usg=AOvVaw3q-FjZmPAnRQhygCSZWjyE (p.20)

⁷ https://ec.europa.eu/eurostat/documents/4031688/8716412/KS-07-17-123-EN-N.pdf/908e0e7f-a416-48a9-8fb7-d874f4950f57

⁸ https://ec.europa.eu/eurostat/documents/4031688/8716412/KS-07-17-123-EN-N.pdf/908e0e7f-a416-48a9-8fb7-d874f4950f57

I. FOR A LOW CARBON SPORT

Global warming represents a major challenge for the entire sports industry. The Intergovernmental Panel on Climate Change (IPCC) established that the rise in temperatures over the next twenty years will exceed 1.5 °C if greenhouse gas (GHG) emissions do not reduce drastically⁹.

Rising temperatures and associated heat waves pose a major risk to the smooth running of sporting events for athletes, their fans, stakeholders, and infrastructure. We know, for example, that a 2 ℃ increase in temperature would result in 24 additional days per year at more than 32 $^{\circ}$ C, a threshold beyond which sports practice is not recommended or that 50% of collective Sports Halls in France are currently unsuitable for high temperatures. It is also recognised that the water and thermal stress caused by the lack of water and high heat impacts the good performance of natural surfaces, including that of grassed stadiums: the consequences of the crumbling of the soil or even the lengthening of the turf growth complicates logistical management and increases the risk of injury. The estimated reduction of a period of one month snow cover also poses a complex problem of adapting to winter sports practices, the calendars of which will become denser over shorter periods¹⁰. It is for all of these reasons that it is essential that the sport adopts a long-term low-carbon strategy today to identify the challenges of their practices and the existing solutions to limit their consequences.



In addition, the carbon footprint of sport is growing, and sports organisations are among the most emissive sectors. According to a report by the Rapid Transition Alliance¹¹, the global sports sector emits as much carbon as a medium-sized country. A low estimate would represent the same level of emissions as a country such as Angola or Tunisia and a high assumption would be as high as that of Poland or Spain for example. This footprint includes several components, such as, transport to and from the place of the event, the construction of infrastructure or the use of facilities and the supply chain of equipment for sports practice. It is estimated that the Rio 2016 Olympic Games emitted 3.6 million tonnes of carbon dioxide ¹² and the 2018 Football World Cup in Russia emitted 2.16 million tonnes, including nearly 1.6 million tonnes linked solely to transport¹³.

To face the challenges of global warming, sports organisations must significantly reduce their emissions and achieve Net Zero Carbon by 2050, by integrating their low carbon strategy into their economic strategy. Indeed, sports organisations can both reduce their carbon

footprint and ensure a sustainable future. Adopting a low-carbon strategy is an opportunity for companies and associations in the sector to unite their stakeholders (partners, spectators, guests, service providers, institutions, etc.). Their approach will lead them to better understand the interdependence of their activities with those of their ecosystem and to work with to co-construct reduction solutions adapted to the reality that they share.

To help organisations adopt a low-carbon strategy, we specify in this section the mechanisms and methods affecting the environmental impact of an organisation as well as the three fundamental principles of a low-carbon strategy including the measurement, reduction and offsetting emissions that cannot be reduced. This part explains the definitions and challenges of carbon emissions and how sport can seize these scientific concepts to apply them to tangible realities within their practices and organisations. To do so, the topics covered have been organised as follows :



proposes solutions to reduce emissions;

emergence of sustainable projects.

Understand: specify the reference frameworks, tools, and challenges of measurement;

Reduce: once the emissions have been measured, this second part explains and

Offset: Finally, to deal with unavoidable produced emissions, offsetting is the means of restoring a positive balance for its event or organisation by contributing to the

⁹ https://www.ipcc.ch/report/ar6/wg3/

https://www.wwf.fr/sites/default/files/doc-2021-07/02072021_Rapport_Dereglement-climatique_le_monde_du_sport_a_plus_2_ 10 et_4_degres_WWF%20France_4.pdf

¹¹ https://www.rapidtransition.org/resources/playing-against-the-clock/

¹² http://www.rio2016.com/jogo-aberto/documento

¹³ https://www.fifa.com/tournaments/mens/worldcup/2018russia/news/sustainability-report-of-the-2018-fifa-world-cup-russia

1. Understand

Calculating carbon emissions а.

Carbon dioxide, CO2, is a major greenhouse gas and one of the main contributors to climate change. These greenhouse gases trap energy from the sun in the atmosphere, which has a warming effect on the earth's surface.

The calculation of carbon emissions measures the amount of greenhouse gases emitted by an activity expressed in CO2 equivalent. This calculation applies an emission factor to an appropriate activity statistic i.e :

Emission = Activity x Emissions factor

The CO 2 emission factors indicate the quantity of CO 2 equivalent (CO 2 eq) emitted during the combustion of a given fuel and for a unit of energy.

For example: An electric car powered by an electricity grid generated by fossil fuels will emit more CO 2 than the same car powered by electricity generated by renewable energy.

It is possible to extend the concept of emission and life cycle factors to the activities of organisations by reporting the CO 2 emissions, or equivalents, directly emitted by an activity to a measure of this activity to calculate the carbon footprint of a product or service.

For example: measurement of the production of a handball will take into account its entire life cycle: from the energy used in its production, the component materials as well as their origins, its transport, its estimated lifetime, the impact of its treatment as waste representing a sum of emission factors related to a product unit.

It is recommended to take into account the impact of emission and life cycle factors¹⁴ in the decision-making processes of an organisation to proceed with the implementation of a strategy based on low carbon.

For example: wood could be favoured as an alternative to steel in the construction of buildings. That said, wood can represent a higher emission factor than steel because of its higher environmental costs of production linked for example to deforestation and the loss of CO 2 linked to the felling of the tree. Similarly, a polyester sports jersey will have a higher carbon footprint than that of a cotton jersey due to the intensive use of energy in the production process of synthetic fibres.

Low carbon strategy b.

A low carbon strategy consists of three major issues : mitigation, adaptation, and the co-benefits.

Mitigation aims to reduce greenhouse gas emissions by deploying technologies and cleaner practices.

Adaptation is the process of preparing for a warmer world by building more resilient infrastructures and by adapting existing infrastructures to the changing conditions such as rising temperatures, rising sea levels, more extreme natural events, etc.

Emission factors established by the GreenHouseGas protocol : https://ghgprotocol.org/calculation-tools

Co-benefits refer to the social, economic, and environmental benefits that result from the reduction of greenhouse gas emissions and the implementation of adapted measures mentioned above.

This type of strategy is used around the world as governments take measures to combat climate change. It can be used at multiple levels, including local, national, and international level.

Low-carbon strategies can take several forms. For example, it can be voluntary goals or agreements set at international level such as the Paris Agreement on climate change or the Sustainable Development Goals (SDGs). They can also be motivated by an incentive mechanism such as a carbon tax or a mandate requiring that a certain percentage of energy comes from renewable sources. At the local level, communities can implement low-carbon strategies through incentive programs, energy efficiency or renewable energy installations.

A low carbon strategy is a large-scale mitigation plan that aims to reduce greenhouse gas emissions to less harmful levels.

Carbon neutral C.

Carbon neutrality, known as having a net zero carbon footprint, refers to the fact that all greenhouse gas emissions associated with an activity or organisation are offset by reductions. This can be achieved by reducing(mitigation) the carbon footprint and offsetting excess carbon emissions (including sequestration).

Achieving carbon neutrality is a key success factor in meeting the challenges posed by climate change.

The French Agency for Ecological Transition (ADEME) has published recommendations on the use of «neutrality» arguments in marketing and communication that emphasise the misleading practices in the use of neutrality concepts which may result in controversies or even legal challenges in the face of accusations of greenwashing¹⁵. Consequently, ADEME recommends that all players commit to a process of responsible communication that goes through :

- on the alleged neutrality of their territory, activity, product or service ;
- carbon footprint and the financing of offset projects.

By way of illustration, the recent net zero emission standard (net zero), defined by the SBTI¹⁶ Science Based Target Initiative) demands from its signatory companies a significant reduction of 90 to 95% emissions before 2050, with the definition of short and long-term objectives covering emissions of the entire value chain. In addition to these objectives, the neutralisation, also called for the removal or capture, of CO 2 from the atmosphere and its sequestration in carbon sinks concerning the remaining 5 to 10% of emissions within the value chain. Participants are invited to invest in carbon offset projects, through nature-based solutions (such as reforestation) or direct removal by

• getting rid of the purely arithmetic approach to neutrality and not focus the communication

communicate in a transparent, proportionate, and distinct manner on the various levers of contribution to collective carbon neutrality, in particular the massive reduction of their

¹⁵ https://librairie.ademe.fr/developpement-durable/5609-use-of-the-carbon-neutrality-argument-in-communications.html

¹⁶ https://sciencebasedtargets.org/net-zero

technological means (capture and storage) reducing emissions outside their value chain.

By reducing emissions, a low carbon strategy can prevent global warming. At the same time, promoting the regeneration of the ecosystems that have been degraded or destroyed, as well as conserving ecosystems that are still intact, offers a greater chance of continuing to benefit from natural systems that capture greenhouse gases and actually produce ecosystem services (also commonly referred to as ecological services) and benefits that humans draw from these ecosystems¹⁷.

d. The carbon footprint and evaluation

An important step in any low carbon strategy is to measure the carbon footprint, of the organisation and its activities.

Carbon footprint is the term used to describe the total amount of greenhouse gas produced by an organisation or person over a given period expressed as an equivalent of carbon dioxide in the atmosphere (CO2 eq) measured in metric tons.

Any actions that contribute to climate change should be included in this calculationl.

For example, if a stadium buys electricity from a coal-fired power plant or if a team sells a product delivered from a shipping container traveling on an oil tanker, this must be taken into account in the calculation of the carbon footprint.

When it comes to measuring a carbon footprint, the most effective approach is to perform a carbon evaluation.

A carbon evaluation is an audit process that objectively measures and analyses the level of emissions of carbon generated by an organisation. This is to measure the amount of greenhouse gasses emitted by an organisation's activities, equipment, processes, and products.

A carbon footprint audit is a detailed inventory of a company's carbon footprint that includes the total emissions of scopes 1, 2 and 3 (see below). It provides a snapshot of an organisation's carbon footprint and helps determine what action can be taken to reduce it.

This carbon measure is needed to set reduction targets and track progress in time. It serves as a starting point for a roadmap and is often used as a benchmark for assessing progress towards a particular goal, e.g., being aligned with the goals of the Paris Agreement.

A sports organisation can use a carbon evaluation to identify the main contributors to its carbon footprint and implement actions to reduce them. The organisation can also use a carbon evaluation and roadmaps to account for its low- carbon initiatives to stakeholders.

A carbon roadmap is a step-by-step plan that describes how a company will work to achieve its carbon target. It includes objectives, milestones, and timelines for implementation. This roadmap must also be aligned with the strategy and objectives of the long-term business plan

17 https://www.decadeonrestoration.org/fr/quentend-par-restauration-des-ecosystemes By becoming aware of the impact of efforts to reduce the carbon footprint, areas for improvement can be identified.

Carbon scopes e.

The categorisation of carbon emissions divided into scopes 1, 2 and 3 is used to describe the different categories of emissions that an organisation generates in its own operations and in its value chain.

Scope 1 refers to **direct emissions** generated by an infrastructure owned by an organisation or that it directly controls.

PFor example, a swimming pool heated by a system using a fossil fuel, or petrol of a car or lawnmower belonging to the organisation.

Scope 2 refers to emissions generated indirectly such as the purchase of electricity, heating, or air conditioning. Scope 2 emissions are included in the measurement of an organisation's emissions, even if they are produced in the same place where they are generated

Scopes 1 and 2 are mainly under the control of the organisation. In most cases, an organisation will have the data sources necessary to convert direct purchases of gas and electricity into a greenhouse gas inventory. This information may be held by the purchasing, finance, or sustainable development department.

What's more, an organisation can in most cases implement low-cost carbon emissions thanks to cleaner energy solutions becoming more and more accessible. Select renewable electricity suppliers, production of your own energy, electrify your heating demand or switching to electric vehicles are among the solutions to achieve cleaner uses of energy.

Scope 3 refers to indirect emissions due to activities beyond the control of an organisation. It includes emissions released throughout the supply chain of an organisation, both upstream and downstream.

15 categories of activity are integrated into the scope 3 calculation developed by the Greenhouse Gas Protocol¹⁸ :

- Scope 3 Indirect upstream emissions These activities can be :
 - Business trips
 - Employee journeys working from home
 - Production of waste
 - Goods and services purchased
 - Transport and distribution

An upstream activity is an operational time that occurs at the beginning of a given process.

https://ghgprotocol.org/scope-3-technical-calculation-guidance.

- Activities related to fuel and energy
- Capital Goods
- Assets leased upstream

Scope 3 - Indirect downstream emissions

Indirect downstream emissions are those that occur during the final stages of a given process. These emissions are further categorised as follows :

- Investments
- Distribution and downstream transport
- Transformation of products sold -
- Deductibles _
- Leased downstream assets
- Use of products sold
- Treatment at the end of life

All industries combined, on average 60% of total emissions are included in the scope 3¹⁹. However, the percentages differ from sector to sector, although it is known that the transport of fans typically accounts for the majority of carbon emissions from most events. The location of the event and the proximity of the fans to its vicinity are thus determining factors and which, taken into account, manage the impact of supporter transporton the carbon footprint of an event.

For example, due to the COVID-19 pandemic, the organisers of the Olympic Games of Tokyo 2020 decided that foreign spectators would not be allowed to attend the event. It has been estimated that the emissions avoided by the absence of travel and accommodation of foreign spectators is about 340,000 tons of CO 2 and this seems be a conservative estimate.

Organisations that are committed to reducing their environmental impact must consider the scope 3 emissions although measuring scope 3 emissions is more difficult than measuring scopes 1 and 2 because many factors are involved both upstream and downstream.

Measuring all inputs that go into making a product, such as resources used in the supply chain, packaging materials and transport, have indeed a significant impact on the carbon footprint of the final product. It is a necessary step to clearly understand the total impact of a simple purchase decision and product selection made with the knowledge and consideration of these factors ensuring that decisions are environmentally friendly and have a positive impact on the organisation's footprint.



f. **Measuring tools**

The most common tool for measuring a carbon footprint is a carbon footprint calculator.

Carbon footprint calculators store operational data to calculate an output in terms of the amount of carbon emissions generated based on emission factors. By entering the relevant data into the calculator, organisations can create a complete record of their emissions

The calculator must be transparent, built around a recognised methodology and respect the carbon accounting standards. It must also be able to take into account all the factors that affect the carbon emissions identified by scopes 1,2 and 3, to measure with accuracy the carbon footprint and it must be able to be updated with precise emission facts.

Many versions are available online. The following free calculators are recognised to meet the criteria set out above, while more and more chargeable carbon calculators are coming to market to meet the growing need to measure and evaluate the emissions of organisations :

- 3-technical-calculation-guidance
- Emissions Calculator: https://unfccc.int/documents/271269
- evaluator

An organisation's footprint can be difficult to calculate, and requires many hours of work and a partnership between several services. That being said, setting up a green team dedicated or collaborating with climate professionals can be an effective strategy to accomplish the mission.

The carbon calculator or access to calculation services can also be offered as it benefits members of sports federations. In return, these federations can engage their members and use the information collected to improve their environmental impact. In other words, by quantifying the emission impact of their events and activities, the sports organisations can assess their carbon footprint and create strategies to reduce their carbon emissions.

Initiatives such as that of the Internal Olympic Committee aimed at motivating federations such as the International Sports and National Olympic Committees to take «real tangible steps" to reduce their greenhouse gas emissions and assign them carbon credits to offset their emissions, are chains of positive commitments. The FIA (International Automobile Federation) has, for example, deployed a program for its members, the FIA Action for Environment, which offers them access to a carbon calculator personalised and adapted to their discipline.

Measurement challenges g.

While it is important to understand the impact of human activities on the environment, it can be difficult to quantify the magnitude of these impacts. Therefore, it is important to have a perspective on the sources of emissions in order to develop effective strategies to reduce them. Based on the results of the initial measurement, it is indeed possible to identify the most CO 2 emitters as well as the improvement factors relevant for the operation of the organisation.

• Greenhouse Gas Protocol – GHG Emission Calculation tool: https://ghgprotocol.org/scope-

• United Nations Framework Convention on Climate Change - UNFCCC Greenhouse Gas • Greenhouse Gas Protocol & Qantis – Scope 3 Evaluator: https://ghgprotocol.org/scope-3-

¹⁹ https://www.cdp.net/en/research/global-reports/global-supply-chain-report-2019

It is precisely the objective of a carbon footprint to identify levers for reducing emissions, for example through improvements in energy efficiency (electricity, water...), or modifications to operational procedures (modification of the organisation of the transport of equipment, evolution of purchasing criteria). From these results, an organisation can then define its carbon footprint improvement plan.

2. Reduce

A carbon footprint improvement plan is a set of actions and measures taken to reduce the amount of carbon emissions. It can be used to describe the necessary steps to reduce emissions and create a reduction plan.

Carbone reduction strategies а.

Carbon reduction strategies are an essential part of the effort to combat climate change. Organisations that want to do their part must take action to reduce their carbon emissions. The positive impact of these measures can also contribute to improving the environment in which these organisations operate. Their impact on the surrounding community, an improvement in air quality or a reduction in noise pollution leads to increased co-benefits.

Each area of intervention should be identified and prioritised so that reductions in greenhouse gas emissions are achieved in a consistent manner.

La prise en compte, entre autres, de l'évolution des instruments de politique publique (normes, taxes, etc.), des progrès technologiques ainsi que des changements de comportements constituent chacun des domaines d'action et de réflexion nécessaires à la définition de stratégies de réduction adaptées.

Taking into account, among other things, the evolution of public policy (standards, taxes, etc.), technological progress and changes in behaviour, constitute each of the areas of action and reflection necessary for the definition of strategies for appropriate reduction.

The key is to create a field of action that matches with the needs of their organisation and build on the mission of the organisation.

The most effective reduction strategies involve a combination of different tactics. They can be classified according to 3 areas

Mitigation strategies can be proactive or reactive :

- **Proactive reduction strategies** are designed in the first place to prevent the waste happening. ٠ These strategies include installing water efficient plumbing fixtures, constructing energy efficient buildings, and purchasing environmentally friendly products.
- Reactive reduction strategies define a method for planning and the implementation of environmental projects in response to actual or anticipated changes in the environment.

For example, Scotland's National Football Stadium reduced its water usage by 35% within 15 months after installing monitoring equipment that identified anomalies and peaks in water consumption.

This reduction in water consumption was a saving of £40,000²⁰.

Composting food waste, recycling beverage containers and repairing broken items instead of throwing them away are other examples of reactive strategies

Reduction strategies can also be voluntary or mandatory :

- and procedures to achieve those targets.
- environment.

Finally, reduction strategies can be internal or external :

- organisation.
- and disposal stages.

The pillars of reduction b.

Energy, water, waste, and mobility are essential issues to take into account in the implementation of a carbon footprint improvement plan. These elements represent the largest sources of emissions on an individual scale, making them the heart of most reduction efforts of carbon emissions. The measurement and understanding of these elements is essential to identify the solutions to be implemented in order to define adequate reduction strategies.

All sports disciplines are affected, to a greater or lesser extent, by these 4 positions. Improving these aspects can represent a significant impact in reducing their carbon footprint and forms the pillars for the design of carbon reduction strategies suitable for these activities.

- Å Energy

Global dependence on fossil fuels for energy has led to the release of large amounts of carbon dioxide in the atmosphere, which is mainly responsible for global warming.

Energy is a central part of the Paris Agreement on climate change. To reach its goal of keeping the global temperature rise to below 2°C above pre-industrial levels, the use of fossil fuels must be banned as soon as possible.

• Voluntary reduction strategies identify ways to reduce the environmental impact of an organisation's activities. They typically contain such things as identifying environmental issues, setting goals and targets for reducing environmental impacts and developing plans

Mandatory environmental reduction strategies are a set of specific actions or measures that an organisation imposes or is legally required to take to reduce its impact on the

Internal reduction strategies aim to identify and reduce environmental risks within an

External environmental reduction strategies focus on reducing the environmental impact of products and processes outside the organisation, e.g., at the manufacturing, transport,

²⁰ https://www.edie.net/football-stadium-tracks-water-use-saves-40000/

The preservation of water and energy resources» commitment of the charter of 15 environmentally responsible commitments of Major Event Organisers by the Ministry of Sport²¹, distinguishing three fundamental pillars concerning energy including sobriety and efficiency of its use as well as the transition to the use of renewable energy resources.

Switching from fossil fuels to renewable energy is indeed an essential lever in the fight against climate change. The rapid transition to renewable energy is now possible thanks to technological progress and an economic scale that offers multiple solutions to reduce your carbon footprint and switch from fossil fuels to cleaner energy sources. However, the reliability, cost and carbon footprint are all key factors to consider when choosing a clean energy supplier.

The implementation of renewable energy sources to self-generate electricity, such as solar, wind and geothermal energy, is a new possibility that offers many advantages. Electricity generated from renewable resources is reliable, clean and can effectively contribute to reducing carbon emissions. Self-production can also help reduce the costs associated with public networks by providing a source

of energy that is not tied to the local network. Having independent energy sources can also reduce the overall energy demand on the grid.

On this subject, the consultation of local energy operators is necessary to better assess the capacity of the electrical network and to understand the state of the network especially during the hours of peak energy demand. Adapting the time of an event can also have a significant impact on the voltage of the electrical network and therefore on the emissions generated.

Investing in energy-efficient equipment, such as switching to LED lighting instead of incandescent lamps, as well as the implementation of more rigorous monitoring control systems also offers benefits for reducing energy consumption and identifying areas of improvement. For example, smart meters enable energy monitoring in real time, reduce waste and improve energy efficiency. They contribute also to improve operator engagement and foster quality management practices. As a result, operators make more informed decisions about energy use and can play an important role in reducing emissions.

The focus on energy saving is important as it eliminates greenhouse gas emissions and reduces energy production costs. In addition, it saves energy avoiding the use of resources.

Conducting an **energy audit** is a comprehensive way for an organisation to enable managers to identify ways to reduce energy costs and carbon emissions.



When it comes to sustainability, the importance of water is often overlooked, yet water is a valuable resource that must be carefully conserved for future generations. While water scarcity has always been a problem across the world, climate change has exacerbated this problem by increasing evaporation rates and modifying precipitation patterns which have, among other things, a direct impact on the practice of certain sports such as canoeing and kayaking. What's more, as the water becomes scarcer, competition for resources intensifies and the cost of water rises.

At the same time, sports facilities are particularly vulnerable to shortages of water. In addition to regular maintenance, water-saving appliances and equipment are essential to ensure that these facilities have the resources they need to operate efficiently. Although the exact effects vary by sport, water stress and changing climate patterns can lead to reduced water availability and have an impact on different disciplines. For example, in the case of active water²², the reduction of water available for irrigation threatens the maintenance and cost of football and golf courses. With regards to passive water ²³ necessary for aquatic uses, the threat of a total shortage or reduction of river flow leads organisations to prepare contingency plans to be able to maintain their activities.

Given these rising costs and the limited availability of water, it is clear that the sports industry must take action to manage and reduce its water footprint. Priority should be given to efficient practices that use less water, such as recycling and the reuse of used water, as well as encouraging employees and visitors to be reasonable in their consumption to significantly reduce the volume of water.

Ultimately, better water management that can be distinguished **quantitatively**, reducing consumption and quality, by reusing rainwater for example, can contribute effectively to reduce the carbon footprint and foster resilience to access and cost of water supplies.

As with energy, water use should be assessed and closely monitored to identify and to improve its use. Efficient appliances, stakeholder engagement and recovery practices will all lead to a significant reduction in water footprint and therefore has an impact on the carbon footprint of the organisation.



As a reminder, in the calculation of the carbon footprint, the direct and indirect emissions of the life cycle of a product must be taken into account. We know that the emissions resulting from the disposal of products that are no longer usable, therefore considered as waste, are a very important component of a carbon footprint and represent a significant percentage of greenhouse gas emissions over the life of a product.

The solutions developed in the second part of this report deal specifically with waste and the role its reduction can have in reducing the carbon footprint.



The carbon footprint of sports organisations is largely affected by the transport of spectators, or the logistics required for the organisation of the event itself taking into account the athletes, the technical teams, the service providers, the media and especially the spectators.

Mobility here refers to all forms of transport used to facilitate access to sport events. This includes urban public transport such as buses, trams, bicycles self-service or non-urban such as train, plane, as well as individual transport such as the car, the bicycle, and finally cost-sharing practices such as carpooling. The amount of emissions produced largely depends on the mode of transport used, of which the most emissive is air transport, followed by long-distance transport by bus.

Spectators have a role to play in achieving sustainable sport. In terms of accounting carbon, spectators represent the largest part of the emissions generated by sports events. These are emissions generated indirectly and belong to scope 3. The accounting of spectator emissions includes all of their activities during their movement (arrive, stay and return), the estimation of

Passive water consumption is the consumption of water used for aquatic uses such as ponds, rivers, and water sports reservoirs.

²¹ https://www.sports.gouv.fr/sites/default/files/2022-12/charte-des-15-engagements-coresponsables-des-tablissements-publics-du-minist-re-charg-des-sports-horizon-2024--2872.pdf

²² Active water use includes domestic uses for agriculture, irrigation and livestock watering, as well as industrial uses and any municipal or environmental uses.

²³

their consumption of food and drinks, their type of accommodation, etc.

It is possible to measure and estimate the flow of spectators from ticket sales data for example. The availability of apps designed to help viewers get to events offers an interesting gateway to promote sustainable ways to get to event sites and promote the use of public transport or green transport such as bicycles, which contribute to reducing the emissions generated by their journeys. These apps can also be used to collect crowd flow data in order to understand and improve mobility options.

The diversification and evolution of retransmission methods, such as streaming on demand, and changing audience's viewing habits, through social media for example, can also contribute to satisfying a larger audience and influence the number of journeys and therefore carbon emissions.

Logistics also have a considerable impact on emissions. Green logistics practices such as the switch to electric vehicles for transport, the use of regional storage platforms and the reduction of dependence on air freight are all examples of logistics that can help to effectively reduce the carbon footprint of an organisation.

The choice of the location of event venues and its infrastructure is also a predominant factor because of its impact on the journey required to get there. An event on the outskirts of a town will probably have a higher share of emissions per kilometre than an event in the city centre because the network of urban public transport is less, and this means the transport used to get there will therefore be more emissive (in particular due to the use of cars). However, the concentration of events in a reduced perimeter, in conjunction with existing or possible public transport resources put in place temporarily, represents a strong impact lever given its potential for reducing emissions per kilometre due to the proximity of the sites.

More broadly, the planning of timetables and journeys adapted to a reduction policy in emissions also represents a potential opportunity for reduction. The stages events in particular can concentrate their journeys on destinations following a continuous route allowing the distance travelled to be reduced, rather than traversing the globe and increasing the total distance of their equipment transport for example.

By promoting sustainable mobility options, sports organisations in partnership with cities can reduce carbon emissions and improve air quality. More and more, cities are recognising the importance of sustainable mobility and its benefits for environmental and health issues and then deploy favourable mobility plans to new uses such as self-service rentals, for example, which contribute to the development of a functional economy. The coupling of free access to public transport linked to the purchase of a ticket for a sporting event is an initiative appreciated by all parties and is effective.

Stakeholder engagement

Stakeholders are people who have an interest or impact on the organisation. That includes customers, employees, investors, and suppliers.

Stakeholders have different concerns about development sustainable efforts of an organisation. To include them all, it is recommended to understand and respond to their concerns.

By identifying a representative of each stakeholder group, it is possible to discuss their issues and obtain their support by consulting them. Their support can increase considerably the likelihood that sustainable development efforts can be crowned a success.

More generally, uniting around a common sustainable goal ensures that efforts involving stakeholders in sustainability initiatives are both effective and sustainable over the long term. Encourage transparency and accountability by making sustainable development goals visible to all stakeholders, contributes to promote engagement and increases customer, employee, and partner satisfaction and confidence.

Once the stakeholders are committed to an identified and common objective, the transition towards new sustainable development practices can be deployed more effectively within the value chains allowing better implementation of a reduction emission strategy.

3. Offsetting **Carbon offsetting** a.

Although organisations are ready to reduce their emissions, some of them cannot be reduced at this time. Offsetting²⁴ unavoidable emissions is an effective method to help organisations achieve the objectives of their reduction strategy.

The purchase of carbon credits from accredited projects that eliminate GHG emissions in the atmosphere or prevent them from being emitted in the first place, is how organisations offset their carbon footprint.

A carbon credit is equivalent to a ton of CO2 that has not been emitted, usually expressed in « tCO2e»» (equivalent ton CO2). After being purchased, a credit is withdrawn via an Internationally recognised registry accessible to the public.

A carbon offset project is an effort to reduce or avoid greenhouse gas emissions. The project (see examples below) must respect international recognised standards that are independently verified and be positive socially, environmentally, and economically, thus encouraging sustainable development.

The concept of additionality applied to carbon is important because it helps to ensure that projects will help reduce emissions.

Carbon additionality is the concept that carbon offsets should only be used to finance projects that would not have seen the light of day without the offset and so avoiding windfall effects. This means that projects must be «additional» in the sense that they could not have gone forward without the additional revenue from the sale of carbon offsets.

The history of carbon offsetting dates back to the early 1990s, when voluntary offsets were made available to fund the first projects in developing countries. The first examples were projects that avoided methane emissions from animal waste or destroyed industrial gases like chlorofluorocarbons (CFCs). In 1997, the Kyoto Protocol included the Clean Development Mechanism (CDM), which created a market for carbon offsets by allowing developed countries to invest in emission reduction projects in developing

²⁴ countries to meet their targets.

Type of carbon projects b.

The main types of carbon projects today are still quite distanced from sport and enable organisations to promote benefits that contribute to the primary needs of populations. They are concentrated in the following sectors :

- **Renewable energy** : installation of renewable energy generation sources such as wind or ٠ solar farms contributes to the development of a balanced clean energy and reduces the use of fossil fuels.
- The forest sector and soil management : the sustainable management of ecosystems can reduce the conversion of forests for non-forest use, such as cultivated land or residential areas, as well as improving the sequestration of carbon. A tree or mangrove planting project, for example, offers both a environmental and social benefit through the protection of the habitat of communities.
- Waste : Collecting and reducing methane emissions from landfill helps to reduce the impact of waste on the environment.
- Domestic equipment : the use of an improved stove saves up to 60% of the wood needed to cook the same amount of food. This not only reduces carbon emissions, but also the consumption of wood, the deforestation of local forests and allows populations to devote more time to other activities. It should be noted that 1 in 3 people in the world would not yet use clean cooking solutions according to the Clean Cooking Alliance²⁵.
- Other projects in the sectors of **agriculture**, transport, infrastructure, and industry can also avoid emissions or tonnes of carbon sequestered through their practices.

Conclusion 4.

Under current regulations, most organisations are not required to reduce their emissions or even to divulge them. Organisations that voluntarily review their carbon footprint strengthen their resilience in the face of a changing compliance environment.

These organisations that are proactive in reducing their carbon footprint can also become more attractive to investors, partners, and customers.

By reducing their environmental impact, low-carbon organisations are generally in a better positioned to attract capital through higher valuations in extra-financial indicators such as those of ESG (environmental, social and governance).

These extra-financial indicators also lead sports funders, sponsors, or partners in the private sector, to increase the value of their companies, to express themselves overseas within their own industry. In this sense, sport is a great platform in which to contribute and co-construct relationships and promote the emergence of new economic models in which organisers and funders are cobeneficiaries.

Integrating climate change resilience into planning and operations will help organisations to minimise the impact of extreme weather events on their business identifying and taking action to prepare for the effects of climate change, and thereby ensuring their sustainability.

Climate change is irreversible, but the sports sector must be a major player in combatting its impact on the environment and help reverse the fate of our planet.

II. TOWARDS ZERO WASTE EVENTS

One of the priority issues of a sporting event is the treatment of the waste it generates.

In order to support organisers and public authorities towards a better understanding of issues associated with waste management, this part defines what waste is, and highlights the key figures in terms of waste production. It also offers tools and key methods to allow organisers and local authorities to move towards a sustainable reduction of event waste before concluding with the recommendations and key factors of successful reduction strategies.

Definition and challenges 1. Définition of waste and frameworks a.

Considered as waste : any substance or object, or more generally any moveable property, which the holder discards, intends to or is required to discard²⁶.

The European framework directive specifies a total of 20 definitions, included in the Code of the environment: waste, hazardous waste, producer, and holder of waste, prevention, waste management, reuse, recycling, etc. It also specifies the distinction between what is waste and what is not and provides for the possibility of graduating from waste status²⁷.

Waste ceases to be waste after being treated and having undergone a recovery operation, including recycling, or preparing for reuse, if it fulfils all of the following conditions²⁸:

- The substance or object is used for a specific purpose;
- There is a demand for such substance or object, or it meets a market need;
- complies with the legislation and product standards;
- _

European regulations define waste, advocate prevention and recycling, establish the principles and objectives for Member States. It recalls the responsibilities of the producer of waste and the public's right to information.

The principles of European regulations are contained in the waste directive of November 2008. They have been integrated into French law, and integrated into various codes, mainly into the Environmental Code, waste prevention and management chapter.

The objective is « as a priority, to prevent and reduce the production of harmful waste, in particular by acting on design, manufacture and distribution of substances and products and promoting

The substance or object fulfils the technical requirements for the specific purpose and

Its use will not have any overall harmful effect on the environment or human health.

²⁵ https://cleancooking.org/reports-and-tools/2021-annual-report/

²⁶ Article of the directive, article L.541-1-1 of the Environmental Code

²⁷ Article 5 and 6 of the directive, article L.541-4-2 et L.541-4-3. of the Environmental Code

²⁸ https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000042176104/

reuse, as well as reducing the overall impact of the use of resources and improve the efficiency of their use²⁹ ».

Preventing waste limits, the use of resources, and is thus one of the important axes in the circular economy³⁰.

b. Key figures for waste production

Waste production around the world³¹

Globally, the volume of household waste is estimated at around 2 billion tons, this corresponds to both household waste (produced by households or similar) and other waste handled by municipalities or local authorities that is generated in the world every year.

The forecast for 2050 is 3.4 billion tons, which represents an increase of 70% mainly due to future production in developing countries.

The collection and processing of this waste emits 1.6 billion tonnes of carbon equivalent per year, which represents 5% of global greenhouse gas emissions (3% for the European Union).

Collection means any waste collection operation with a view to transporting it to a waste treatment plant.

Waste collection rates vary from 90% in certain areas of Europe, and North America, and can drop by up to 25% in rural areas of developing countries that lack the infrastructure capable of handling them. Urban areas are on average 50%.

However, it is worth bearing in mind a few key figures which testify to the extent of progress still needed in the world, including Europe :

- Less than 15% of the global volume of 2 billion tons of waste is recycled, and only 5% is composted.
- 44% of waste is vegetable matter or food that could be avoided or returned to the earth.
- A third of the food produced in the world is wasted, and up to more than 50% in some rich countries.
- As for treatment, 37% of waste ends up in various types of landfills, and 31% in open landfill.

In view of these figures, the **treatment of this waste is therefore a critical issue. which questions our collective ability to achieve certain Development Goals of the United Nations by 2030**. Indeed, this waste has **visible consequences just as the invisible ones** on agricultural resources and soil quality, public health, poverty and finally on the existing opportunities for redistribution and capture of the energy produced by their treatment.

Globalised sport is a stakeholder also responsible for this issue. It must find quick answers especially

for its most impacted formats such as those of international championships which take place on a regular and close basis in various places around the world. These sport formats require a great mobility of people and goods. This means regular transport which, in addition to its carbon impact, requires protecting and also the packaging of the materials transported.

Waste production in Europe

In 2018, the European Union was the source of 2.6 billion tonnes of waste, i.e., 5.2 tonnes per inhabitant. The production of municipal waste amounted to 251.9 million tonnes in Europe, of which 35.9 million tonnes was for France.

In 2018, 2,600 million tonnes of waste were treated in the European Union. This figure does not include exported waste, but the treatment of waste imported into the European Union³².



The latest European directive adopted in 2018 set a recycling rate of 55% by 2025 and up to 65% by 2030. In 2019, four countries have already achieved a higher recycling rate than 55% including Germany (66.7%), Slovenia (59.2), Austria (58.2%) and the Netherlands (56.9%). With a rate of 46.3%, France is below the EU average, which is around 47%. At the bottom of the rankings, Malta only recycled 8.9% of its municipal waste and Romania 11.5%³³.

c. The production of waste from sporting events

The events and particularly the sports industry, produces upstream waste, during and after an event. This is both waste from the construction of event buildings and accommodation, as well as consumables from the operation phase of the event: single-use products, perishable products, dated products, and finally those in its dismantling. However, there is no official typology of waste. The one shown below offers³⁴ a categorisation of waste that cannot be exhaustive, therefore the specificities related to sports, events or materials commonly used in different European countries

²⁹ Article 4 of the directive, article L.541-1 of environmental code

³⁰ https://aida.ineris.fr/reglementation/directive-ndeg-200898ce-191108-relative-dechets-abrogeant-certaines-directives

³¹ https://datatopics.worldbank.org/what-a-waste/

³² Table 1 : The top 10 European countries for waste production in 2018 - Eurostat, december 2020

³³ https://www.lefigaro.fr/conso/500-kilos-de-dechets-generes-par-an-et-par-personne-en-europe-20210219

³⁴ Proposed by Olivier Robin, as part of this service..

may vary. However, if it includes the main waste identified at sporting events regardless of their size or specific characteristics (location, practice, obligations of the specifications, etc.), it is more their volume that differs according to the event. This observation bears witness to the diversity and complexity of the issue facing the sports sector and the need to initiate a global reflection on the treatment of this waste to limit its production.

In terms of quantity, we know that:

- PAPER AND CARDBOARD Paper Cardboard packaging Large boxes Cardboard tubes
- COMPOSTABLE Domestic compost Industrial compost
- GLASS Glass bottles
- METAL AND ALUMINIUM Cans Signage Structures Spare parts
- WOOD ٠
 - Large panels Beams Assembly of parts Pallets Furniture
 - TEXTILE Uniform Signage Decoration (panels of renovation, tablecloths) Carpeting / underlay

- PLASTICS Plastic bottles Plastic films Visuals Polyester tarpaulins
- CONCRETE Studs Buildings

Stickers

- FOOD Food surplus Peelings / leftovers Edible oils
- GREENERY ٠ Plants and weeds Manure
- ELECTRIC WASTE / WEEE Batteries Bulbs Printer cartridges / Toner
- MEDICAL WASTE All medical waste contaminated by body fluids
- HAZARDOUS MATERIAL Paint Glue / Adhesives Chemincal products Compressed air / gaz

10% to 15% of the total waste generated by major events is generated during operations.

For example, the forecast at the Tokyo 2020 Games was 6,900 tonnes of waste during the whole event i.e., 13% of total waste (in this calculation the actual figures used are for the construction and dismantling phase).

The average recycling reuse rate is 60% during the actual event, while the rate of reuse and recycling of materials during the construction and dismantling phase was 95% partly thanks to the use of leasing and rental equipment (stands, pitches, baskets, etc.).

Between 0.25 and 0.5 kg of waste was generated per participant.

This volume varies depending on the type of place and whether it is permanent or temporary.

For example, 40 tons of waste is what the Super Bowl produces per annual game. 100 tons of annual waste is the production of one of the best football clubs in the French Premier League.

Key principles and methodology of a low-waste strategy Circularity and the « 5 R » principle : Refuse, Reduce, Reuse a. Recycle, Return to the earth

Consider the reduction of event waste first and foremost based on principle fundamentals that will guide and orient strategic choices and decisions taken by the organisers of sporting events.

For this, it is important to return to simple methodological provisions by integrating a circular thinking taking into account the entire life cycle of products and their environmental impact.

The circular thinking answers start in the purchasing process: identify ahead the precise use and provide an answer on the destination of the materials after the event.

The association of stakeholders is a determining factor in the success and implementation of this management system: they should be involved from the manufacturing phase of the product until the identification of what will become the future waste.

This approach is essential to stimulate a process of change of the prism and limit all forms of waste from the upstream stage to achieve an optimised and rational use of materials. The so-called 5R method is an essential basis for achieving ambitious goals of limiting volumes of waste.

HIERARCHY OF RESOURCE RECLAMATION

REFUSE

The top priority is to avoid waste. To do this, refuse before it's even produced

REDUCE

Select the least packaged products and reduce the quantity of materials

REUSE

Buy and use reusable products. Provide for reassignment

RECYCLE

Maximize resources diverted from Landfill through recycling.

> RETURN to earth

• TO REFUSE

The first of the five Rs is that of refusing to produce more than necessary in questioning the real need and use of all categories of potential products. In other words, this first exercise consists in specifying the definition of the need for questioning new demands or re-examining existing practices with a view to optimisation and continuous improvement. This provision requires time and pedagogy to better understand the issues of a possible lowering of existing standards (e.g., removal of goodies).

The organisation may indeed impose restrictions such as prohibiting :

- Disposable products,
- Materials with a strong environmental impact (e.g., PVC, Vinyl...)

At the same time, it still needs to prioritise in order to preserve the economic balance of the event :

- The enhancement of the image of an event remains a strong priority issue: :
 - media visibility and TV should therefore not be minimised but can be optimised;
 - The enhanced experience of an event is also a priority issue: the fan's experience around and off the field contributes to the renewal of spectator interest and thus ensures its sustainability.

More generally, the question of the real needs of each target population must be questioned with tendency towards more sobriety. There are indeed targets other than fans who benefit from specific operations (branding, food and beverage, signage, goodies, and other merchandising objects) during sports events such as VIPs, partners, and sponsors of events, as well as the media and the General public.

For example, during the Euro 2020 football tournament, a request to decorate the lockers of the journalists in the press room was formulated in order to make their working atmosphere close to those of the players in their locker room. This late request revealed the complexity of implementing a binding approach where the «nice to have" and the historicity of acquired standards sometimes takes precedence over the principles of sobriety initially taken by the organiser who is faced with the comparison with the standards of previous games.

The objective is to **find a balance between the real needs and what can be legitimately considered superfluous**. For example, directional signage making it possible to optimise the journey of people from public transport to their seat can be considered necessary, while the integral dressing of the hospitality areas, or welcome gifts could be questioned. We can for example decide to remove «welcome packs» and other material items offered to a large number of key audiences (volunteers, sponsors, VIPs, participants, etc.) for the benefit of the experience and memory.

For example, setting up sets to photograph oneself with celebrities, introduction to new sports or test a technological innovation can serve as a credible alternative.

The exercise of expressing needs with suppliers, service providers, partners, etc. must integrate an additional criterion which ensures that before a purchase, a second life for the product exists, or that a less polluting alternative to the materials usually used is possible. In the example of welcome packs, if the need remains necessary, Choosing the right one is a major challenge. First, it is recommended to source the service providers, ensuring priority is given to eco-design materials and the second life products and ensuring that the conditions under which the goods were produced in their country of origin respected the rights of workers.

THE BEST WASTE IS AND REMAINS THAT WHICH IS NOT PRODUCED.

• **REDUCE**

The principle of reduction is part of the continuity of the principle of refusal and the issue of only use if necessary.

It marks the desire **to limit any new extraction of raw materials** in order to **reduce the quantity of products** and thus limit the environmental impact of an event.

As part of the production of promotional material, **thought of the deployment of its graphic identity by favouring neutral and non-specific elements** (date, place...) in order to create generic sequences, limit wasted funds, and optimise reuse potential of graphical elements for future events.

An additional lever consists of **reducing the weight and size of materials**, for example decorative tarpaulins which exist in different weights (350g/m2, 200g/m2) in asking service providers to opt for the lightest possible solutions, in line with use, in order to limit the extraction of raw materials

EFinally, during the delivery of these products, use of minimal packaging in group deliveries and adapting the size of the containers making it possible to reduce the use of cardboard. It is also possible to opt for sustainable packaging (ex: biodegradable vegetable films as a substitute for plastics).

These reduction principles apply to all products or services provided to different target populations.

Another example is food waste: in the canteens food for members of staff, the question of the portions distributed, and the pedagogy put in place around the service achieves significant results.

For example, during the Danone Nations Cup, staff members were responsible for serving the portions to young players, thus inviting them to return for second helpings rather than leaving food served in standardised portions, which cannot be redistributed, once served, for hygiene reasons.

Once this reduction work has been identified and implemented, additional alternatives such as local food banks or charities are able to recover fresh unsold produce. This work must be initiated well in advance in order to anticipate the regulatory constraints especially in the cold chain.

REUSE

Reuse guarantees the second life of all products and materials consumed in holding an event. It is one of the key factors in reducing the volume of material that will be categorised as waste at the end of the event because what is reused is not waste.

This is to ensure, before purchase and the launch of any new production, that reuse solutions exist and allow products to be reused for other sport events or to replace new materials from other sectors of activity.

For example, during UEFA Euro 2016 which took place in France, more than 20 tons of material could be collected in order to be the subject of extremely varied reuses. Indeed, the elements produced for the draw 6 months before the competition, were stamped with the date and the nature of the event and therefore couldn't be re-used during the competition, so were used in the fan zone to allow fans to create unique goods or other souvenir items from these materials, and thus emphasise on circularity.

At the same time, in partnership with the UEFA Foundation, more than 1.5 km of high barriers tarpaulin were sent to one of the largest refugee camps in the world, in Zaatari Jordan, so that exiled

Syrian girls could play football in a favourable environment.

Finally, there were more than 20 tons of materials of all types, covering high and low barriers, pvc tarpaulin, kakemonos for press conferences or mixed zone media, roll up banners etc., which were recovered by charities. Indeed, these materials have technical properties similar to what could be found new in the trade and could therefore be reused on green construction sites as roof insulation (for materials with insulating properties) or under concrete slabs as a damp course, for protection during construction work (especially painting), or in agriculture for silage activities.

In summary, the main avenues for reuse are :

- Donate and/or resell materials, equipment, plants, etc.
- Call on food banks, or charities/companies in the social sector who have forged strong links with networks of local craftsmen
- Identify sectors of activity, such as construction, or agriculture, which may need materials similar to those used during the events.

RECYCLE .

Once all the above options have been exhausted, it is important to ensure that all remaining waste can potentially be recycled. The objective is to minimise the volume of waste produced that will end up in the landfill or burned, transformation that constitutes the largest part of the carbon footprint of the events waste even in the case of energy recovery.

It is possible to recycle materials in different degrees of transformation :

- To be used for the function for which it was originally produced (recycling)
- For derivative or different uses (down-cycling or up-cycling) _

Both on a European and global scale, very few materials can be recycled in the literal sense of its definition, i.e., any recovery operation by which waste, including organic waste, is reprocessed into substances, materials, or products at purposes of their initial function or for other purposes according to Ordinance No. 2020-920 of July 29, 2020 - art.3

Some products are de-cycled, i.e., current techniques do not allow to recreate a material as noble as that integrated into the recycling process. Other materials can only be partially recycled because all the additions of coating, dyeing, painting, etc. can compromise the quality of recycling.

To set up a fully-fledged sector for the treatment of event waste and create a factory dedicated to recycling its materials is still a challenge today : even the world's largest sporting events do not generate with enough regularity and quantity the supply of material to enter into an industrialised process.

RETURN TO THE EARTH (R.O.T) •

Finally, the last of the five Rs is to return to the earth and soil all that we can. This avoids complex transformations and promotes fertility that will allow the land to offer a clean natural environment. For this to be possible, it is necessary to integrate into the initial reflection on the purchase of materials the criteria and conditions necessary for this ROT (English meaning of rotting which is used like the 5th R for composting).

Composting is the best possible illustration of circularity, this ecological principle that nature does on a daily basis.

The important thing lies in the **change of mentalities** : to think circular is to integrate the way the events are imagined in their entirety. The change of model abandons the triptych treatment of waste: clean > empty > send and favours that of **collect > sort > value**. This virtual prism requires modifying behaviour, processes, and technology to implement it effectively

The key factors for the success of a « zero waste » sporting 3. event

The principle is simple : avoid upstreaming all the waste that can be avoided and recover downstream that which cannot be avoided. To achieve this, whatever the type or size of the sports event, a few key factors must be the basis of any approach because they contribute to the success of a 5R strategy :

Prepare and commit upstream a.

A preliminary diagnosis (from the previous event for example) will help to identify the main waste deposits and to establish clear objectives. The first step is therefore to identify the type and quantity of waste together with all the parties involved (technical service providers, caterers, etc.) in order to set up adapted treatment and collection systems. To do so, the organisation must, in particular, find out from the community about the typologies of existing sectors to determine the most suitable and check the proximity of the sites in order to optimise the carbon emissions linked to transport.

As the typology varies greatly from one event to another, depending on its size and the target audiences, it may be recommended to ensure at least a waste management system with three main streams is put in place: recyclable, non-recyclable, and organic waste, and when it is possible, to add an additional flow for the glass, and a cigarette butt collection system.

For example, during UEFA Euro 2016, containers were put in place on the forecourt of the stadiums during the assembly and dismantling phases in order to collect the wood, plastic, metal, and glass thus facilitating the treatment of evacuated waste.

Preparing also involves identifying providers capable of handling each category of waste generated by the organisation (household waste, organic waste, paper, etc.) or even to impose a certificate of treatment of the evacuated waste. For example, this will stipulate that the caterer will be responsible for all its waste (scraps, leftovers in the kitchen and food returns) and must leave with them at the end of each event. These elements must be stipulated in the tender and the conditions of purchase.

It is indeed easier to put in place a precise policy and an action plan (objectives, means, deadlines) even before entering the operational phase of the organisation of the event; and all of the choices made in the early stages (location, suppliers, service providers, etc.) have an impact on the production of waste from the event.

Similarly, the internal structuring of human resources responsible for steering the management of waste will have a significant impact on the results obtained.

At the same time, limiting the production of waste upstream makes it possible to considerably lighten the work and the cost of managing this waste at the end of the event.

Best practices once implemented for an event are then more easily assimilated and duplicated on subsequent or similar events.

Involve and engage all stakeholders b.

Producing and applying its responsible procurement charter as an organiser constitutes an essential prerequisite for any waste reduction strategy: indeed, the choice of committed players in sustainability and circularity approaches is the keystone of the methodology.

Put CSR criteria at the heart of decisions and processes, inviting stakeholders to commit themselves with a better knowledge of their production chain, from the extraction of the raw material to the end of the life of the products, it is to allow everyone to be a player in the strategy by integrating the issues at its level.

It is essential to wait for suppliers of food and beverage, clothing, signage, etc. to suggest reuse and end-of-life solutions for all products or services delivered.

It is a question of operating the changeover of the chain of responsibility from the organiser to all the stakeholders, in order to get all sectors moving. This is all the more crucial when we know that more than 3/4 of the waste and carbon footprint of an event takes place before the operational phases.

Eco-communicate and raise awareness among target C. populations, upstream and on site

Eco-communication consists of integrating the challenges of sustainable development (social, environment, governmental) content and in the form of a message, considering that the information must meet standards of transparency, honesty, or ethics.

For the approach to be relevant, all stakeholders must be clearly informed of the issues, including the promotor if different from the organiser, the suppliers, as well as the partner's sponsors and above all the participants.

During the event, communication must be clear, in particular the information associated with the sorting and prevention of waste must be identical everywhere, easily readable and understandable for all users.

Mesure, value et communicate

The account of the event must report on the approach undertaken and its achievements. The value of this work is essential and necessary: it is about communicating both successes and the progress remaining to be carried out for future events using dedicated monitoring indicators.

These indicators make it possible to set objectives and plan their achievement. It is both a **measuring** tool and also for planning and management.

By capitalising on the consolidation of this data over time and being able to associate parties and

stakeholders to achieve these objectives, creates additional extra-financial capital that contributes to the value of the event and of the partner, sponsor, or supplier.

It is this contribution to the generalisation of practices and the sharing of good initiatives with the entire sector, which will allow it to achieve its objectives in a coordinated manner coordonnée et efficiente.

Conclusion 4.

The aim of this report was to propose methodological elements and practical tools on one hand for low carbon events and on the other hand, for events with low carbon production waste for European sports organisers, and more broadly for the sports ecosystem.

It tried to provide precise keys to understanding the concepts, tools, and existing means so that, as of tomorrow, each organiser will be able to measure, or have measured, their activities, are aware of the issues and can identify concrete responses that already exist and are within reach.

It was also an opportunity to recall the proven contribution of waste to the carbon impact of an event if it was still necessary to do so.

However, sustainability is the key to the long-term success of all organisations and those who give priority to these issues are more likely to attract and retain customers, employees, sponsors, and investors. Sustainability also helps companies avoid risk factors and improve their reputation.

At the same time, sports organisations occupy one of the most privileged positions in society and have the chance to inspire and educate the next generation by providing a sustainable alternative role model. It has been estimated that more than two-thirds of sports fans between the ages of 16 and 24 support environmental actions and expect more from brands, teams, and athletes that they support, according to a new study from the Institute for the Study of Global Web Index (GWI) market³⁵.

That being said, it is time for sport to make more use of its ability to influence people and play an exemplary role by relaying the challenges facing humanity and carry positive messages that can significantly help change behaviour necessary for the ecological transition of our economies.

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APPENDICES

APPENDIX I : WASTE CATEGORIES³⁶

Q1 Production or consumption residues not specified below

Q2 Non-standard products

Q3 Expired products

Q4 Materials accidentally spilled, lost or otherwise incident, including any material, equipment, etc., contaminated as a result of the incident in question

Q5 Materials contaminated or soiled as a result of voluntary activities (for example residues cleaning operations, packaging materials, containers, etc.)

Q6 Unusable items (e.g., dead batteries, exhausted catalysts, etc.)

Q7 Substances that have become unfit for use (e.g., contaminated acids, solvents contaminated, exhausted quenching salts, etc.)

Q8 Residues from industrial processes (e.g., slag, distillation residues, etc.)

Q9 Residues from pollution control processes (e.g., gas scrubbing sludge, dust from filters air, used filters, etc.)

Q10 Machining/shaping residues (e.g., turning or milling shavings, etc.)

Q11 Residues from the extraction and preparation of raw materials (e.g., residues mining or petroleum, etc.)

Q12 Contaminated materials (e.g., oil contaminated with PCBs, etc.)

Q13 Any material, substance, or product the use of which is prohibited by law

Q14 Products that have no or no longer any use for the holder (e.g., discarded items by agriculture, households, offices, shops, workshops, etc.)

Q15 Contaminated materials, substances or products resulting from restoration activities land

Q16 Any material, substance or product that is not covered by the categories above.

APPENDIX 2: NEW EUROPEAN COMMISSION RULES ON THE CIRCULAR ECONOMY AND PRODUCT DURABILITY

Proposal for a Regulation establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC (revision), which extends the current directive on eco-design to practically all products (except foodstuffs, drugs, plants, and animals). This regulation will set new requirements to make products that are more durable, reliable, reusable, repairable, easy to maintain, refurbish and recycle, and consume less energy and resources. Green public procurement and incentives for sustainable products are also planned. / Sustainable_products_Factsheet

Ecodesign and Energy Labelling Working Plan 2022-2024 : to cover new products related to energy, update and increase ambition for already regulated products, as a transitional measure until the enforcement of the new mandatory regulation. It is addressed especially to consumer electronic companies (smartphones, tablets, solar panels) - the flow of fastest growing waste³⁷.

EU Strategy for Sustainable and Circular Textiles : to increase the recycling of textiles and the use of recycled materials in textiles, to improve social rights and standards environmental³⁸ aspects of production, supporting circular business models (including reuse and repair services). It defines the vision and concrete actions aimed to ensure that by 2030, textile products placed on the EU market are sustainable and recyclable, made as far as possible from recycled fibres and free of hazardous substances and products in respect of social rights and the environment.

Regulation of the european parliament and of the council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC (revision) will strengthen and modernise the rules in place since 2011. It will create a harmonised framework to assess and communicate the environmental and climate performance of the products of construction. The new product requirements will ensure that the design and manufacture of construction products are based on state of the art to make them more durable, repairable, recyclable, and easier to

remanufacture³⁹.

Consumer Rights Directive (revision), aimed at better informing consumers on the environmental performance of products, to protect them against greenwashing and planned obsolescence, etc⁴⁰.

APPENDIX 3 : EUROPEAN COMMISSION WORK ON PACKAGING AND WASTE PACKAGING

Directive Revision: Packaging and Packaging Waste Directive: The European Commission is currently evaluating text editing options. A public consultation was launched last year

from Sept. 2020 to Jan. 2021 and concluded with nearly 500 responses from the general public and stakeholders. To go a little further on the subject, here is some information about the implementation of the Directive.

³⁷ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022XC0504%2801%29&qid=1651649049970

³⁸ https://ec.europa.eu/environment/publications/textiles-strategy_en

³⁹ https://ec.europa.eu/environment/system/files/2022-03/COM_2022_142_1_EN_ACT_part1_v6.pdf

⁴⁰ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0143&qid=1649327162410

³⁶ https://aida.ineris.fr/reglementation/directive-ndeg-200612ce-050406-relative-dechets-texte-abroge



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