

**Circular
Festivals**



A Model for Circular & Climate neutral Festivals

Green Deal Circular Festivals

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Part 1 | Introduction

What does it mean to be a circular and climate neutral event? To answer this question, the participants of the international Green Deal Circular Festivals (GDCF) and experts, together defined what circularity and climate neutrality mean for the sector. As a result, this model provides common definitions, ultimate goals and feasible targets which can be achieved already on a shorter term. By doing so, the model provides inspiration to festivals and other event organisers, and to other sectors, cities and regions, to shape their own step-by-step approach to become circular and climate neutral. Based on the experiences of festivals and based on new insights, the model may evolve along the way.

The International Green Deal Circular Festivals

The Green Deal Circular Festivals (GDCF) is a cooperation of the Dutch government and a growing community of European frontrunner festivals, who have pulled together to speed up the transition towards circular and climate neutral festivals. The GDCF is facilitated by the Dutch Ministry of Infrastructure and the Environment. So far, 48 festival organisations from 17 countries have signed this international Green Deal, and the community of front runners is growing.

The GDCF stands for a future-proof and circular festival industry. By signing the GDCF, participating festival organisers committed to strive for circularity and climate neutrality, to inspire visitors and set an example for other festivals. The parties of the GDCF together shaped this model for circular and climate neutral festivals, to clearly define and demarcate what a circular and climate neutral festival is. Inspired by this model, the festivals of the GDCF set their own priorities and plan how to become circular and climate neutral. Therefore, participating festivals develop their own roadmaps towards circularity and climate neutrality and use the GDCF Monitor to measure their progress. Together, they also develop concrete solutions to encounter challenges, through pilots and by sharing knowledge and tools which are vital in the sustainable transition of the sector. More information: www.circularfestivals.com.

1.1 Why Festivals take Action

Vital role of festivals for society

The cultural and creative sector - where festivals and music are part of - is vital for our society. Throughout history, this sector contributed to the continuous development of societies. Music, arts and activism inspires dialogues in society, help shaping and reshaping values and aesthetics, and stimulates imagination to provide hope and guidance for a better and sustainable future. Moreover, the sector contributes to creating a shared sense of identity, community and culture, from a local level to European level. Also, the sector is at the heart of the creative economy, and shows above-average growth and create jobs - particularly for young people - while strengthening social cohesion.

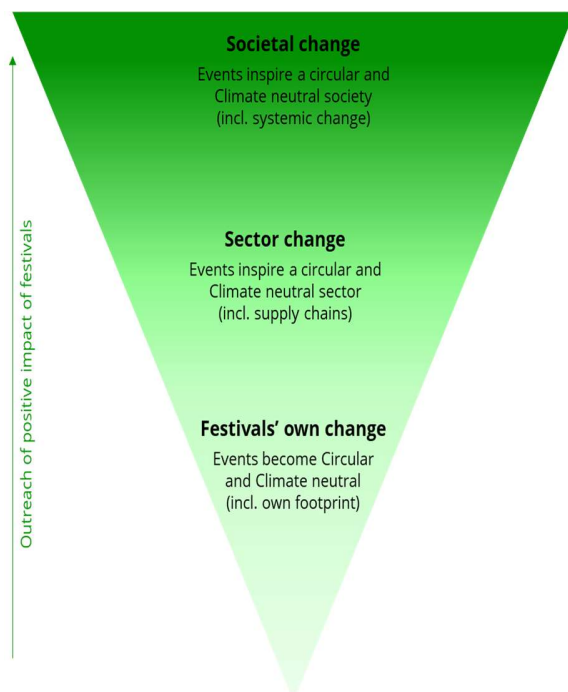
Great potential for the circular and a just climate transition

Festivals hold great potential for Europe's circular and climate transition. As festivals have become increasingly popular, they can help inspire a green movement and accelerate society's transition. Festivals inspire their audience, by telling stories, by letting them experience the new green world in our festival-city, and by engaging them in actions during their visit. Not only applying sustainable practices, but also by applying new cultural codes, values, and behaviours; this can resonate long after visitors return home. Currently, the role of music, art, activism, and imagination is underexposed in these transitions. The IPCC report of 2022 underlines the important role of a societal approach for mitigating the climate and biodiversity crisis. By contributing to structural change (technology, infrastructure), individual behavioural change (habits, choices), and societal change (norms, collective action, culture, trust), festivals can help to accelerate the sustainable transition of society – also by giving a platform for voices and communities that are not usually heard, but who are often hit the hardest by the negative effects of climate change.

"Some years ago, I came across a study on music and sustainability, and it said: "Its (music's) ability to draw upon deep levels of both verbal and non-verbal imagery, symbols, emotions and social- knowledge structures make it a vitalizing element for our current journey towards sustainability"
[Sanne Stephansen, Roskilde Festival Denmark]

As festival organisers we will do our part

There is only one planet Earth, yet by 2050, the world will be consuming as if there were three. It is clear that the depletion of natural resources, the pressure on biodiversity and climate change requires a joint effort from all of us. Governments, society and private sector will all need to make a radical shift in how we do things. The livability of the world and our lives are at stake, and an ecological crisis is unfolding with a vast number of species facing extinction. As international frontrunners in sustainable event organisation, the participants of the GDCF take their responsibility to lead the way for a future-proof and circular festival sector. This starts with limiting our own negative impact (our own change), and extends to inspiring our sector and supply chains (sector change), and ultimately create a fast moving green movement of our society (societal change).



And also to ensure our own future licence to operate

It is clear that festivals need to take action, also just to comply to new and upcoming regulations. In December 2019, the European Commission launched a European Green Deal, aiming to turn the EU into the first fully climate neutral continent by 2050. All 27 EU Member States committed to this [European Green Deal](#). With the Fit for 55 package, the EU introduced legislative measures for various sectors and concrete targets to cut carbon emissions levels by at least 55% by 2030 (compared to 1990), and to ultimately reach climate neutrality by 2050.

Furthermore, in March 2020, the European Commission adopted the new Circular Economy Action Plan (CEAP), as one of the building blocks of the European Green Deal. The CEAP aims for doubling the share of recycled waste in the use of materials by 2030 and a fully circular European economy by 2050. The action plan targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented, and resources used are kept in the EU economy for as long as possible.

Just like any other sector, festivals need to anticipate on the European targets, which are translated by all EU member states into national policies. It is not only a matter of complying with legislation and regulation, it is also important to ensure festival organisations' own future 'licence to operate'. When not taking action on time, it might be too late or costly for a festival organiser, to adjust the production as soon as new regulations go into effect. With their flexibility, festivals can change quick and have a chance to lead, but it will require the help of their partners and authorities to stay ahead.

1.2 Model as sustainable future perspective for the sector

A definition for circular and climate neutral events

Circularity at this moment still is a 'moving target', and definitions, key figures and solutions are under continuous development. A 'blueprint' for circular and climate neutral festivals does not exist, leaving a big gap for the sector to implement the very general targets set by the government. To help festivals in their sustainable transformation, the model helps by providing a common perspective for what a circular and climate neutral event ultimately looks like, including definitions and possible intermediate targets.

Spot on the horizon for a sustainable sector

The model provides a clearly marked spot on the horizon for the sector, while keeping room for flexibility on how to get there. This flexibility is needed, considering the diversity in types of festivals, their specific local setting and legal conditions, their audience and supply chains, and to allow to anticipate on innovations. Also, festivals vary in the stage of circularity which they already may have achieved. By defining a joint end-goal which is clear for everyone, festivals are enabled in their step-by-step approach, to move towards circularity and climate neutrality. Therefore, this model provides a basis for festivals' to set targets and priorities for their own sustainability plans and roadmaps. The model also helps as a conversation starter within festivals' own organisations, and with suppliers, other stakeholders, and their audience.

A basis for coherent standards and conditions for the sector

Local governments are increasingly trying to fill in the gap between the general long-term circular and climate ambitions, and the requirements for organising sustainable events. This leads to fragmentation of conditions being put in place for the sector. Therefore, this model provides also a basis for the sector and for governments to create more coherent standards and conditions, aiming for a fair and equal playing field for the sector. As a next step, we aim for aligned standards and codes for the sector on a European, national, and local level.

Inspiring other events, sectors, cities and regions

The model also aims to inspire festivals and other events, and other sectors, cities and regions. Festivals provide a unique opportunity as models for the kind of world we want to live in. Festivals, for instance, can be seen as a model for circular and climate neutral neighbourhoods. How to inspire an inclusive sustainable mini society, which deals with energy, the use of resources, food, mobility, water and nature in a circular, or even regenerative way? Innovations at festivals move quickly since every edition is an opportunity to improve. Next to the technical side, a festival can provide insights into the effects of measures on people living in this mini society, on their values, emotions and behaviours. Cities can learn from the creative approach of festivals to shape inclusive, circular societies. And the power of storytelling and creative innovation helps to communicate ideas, inspire action and connect people. Festivals, with their music and art, know how to emotionally touch visitors, and how to create a new kind of culture and community.

Relation with other Event Sustainability Tools

Recently various tools and toolboxes have been released, providing festivals with concrete measures which they can implement. Also, the GDCF has an [online toolbox](#) with examples of scalable innovations. And 'Future Festivals Tools' provide case studies as inspiration and an eLearning course. The European Festival Association (YOUROPE) has released the '[European Green Festival Roadmap 2030](#)', as part of its 'Future-Fit Festivals' project. All these tools target the broad European festival community and provide concrete measures and actions, aiming to keep up and comply with the European climate and circularity goals.

The model provides a robust perspective for festival organisations, as a basis to set their own sustainability targets ('what'). The various tools - including the GDCF Toolbox, the Future Festivals Tools and the European Green Festival Roadmap 2030 - provide inspiration with concrete measures and actions to realise these targets ('how'). The solutions provided by these tools may evolve overtime based on new insights and ongoing innovations, while the ultimate goals laid out by the model intend to be robust.

1.3 The Model is work in progress

The model of the GDCF will further develop over time, while definitions, key figures, benchmarks and targets for specific sectors are under continuous development. It requires an iterative process which allows the model to be optimised by trial and error, by making use of the experiences of festivals and the outcomes of monitoring. This first version of the model is based on information available at this time and based on discussions with participating festivals,

knowledge institutes and experts. While parties are committed to collaborate in the GDCF until 2025, the model may further evolve, based on new insights and experiences.

Aligning various models and measuring tools

There are a growing number of models, monitors and other tools being offered to festivals, each with their specific goals, focus and methodology. There is no standard or consensus (yet) on definitions, methodology for impact measurement or targets for our sector. Therefore, the GDCF takes an important practical step toward providing clarity. It is the intention of the GDCF, together with other providers of models, monitors and other tools, to align the way circularity and climate neutrality are defined and monitored. The efforts may lead to optimizations in next versions of the GDCF Model and Monitor.

The GDCF Model is available for everyone

This model - just like the GDCF monitoring framework - is available for all festivals, other events, other sectors, suppliers and governments. Our only condition is, that we ask you to share your feedback and experiences with the application; this will be valuable for further developing the model and monitor. Please share your comments, requests and experiences via: circularfestivals@outlook.com.

1.4 How to use the Model

Festival organisers are responsible themselves, to prepare their own sustainability plans. Based on these strategic plans - which look ahead multiple years - festival organisers will be able to make choices, set priorities and identify measures and other actions for upcoming festival editions. After every edition, the planning for the next edition will start; this is a yearly cycle. By providing a definition for what a circular and climate neutral event ultimately looks like, the model provides a basis for festivals to plan their own sustainable transformation. Therefore, it is important to identify specific priorities and in line with those priorities identify Key Performance Indicators (KPIs) to focus the activities on and to monitor progress.

Various event sustainability tools, including the 'European Green Festival Roadmap 2030' and 'Future Festivals Tools', provide concrete measures and actions to be considered for the festivals' organisations sustainability plan and in the plans for upcoming editions.

By monitoring, festivals can see where interventions have the highest impact, assess whether targets are achieved, and how strategy and projects need to be revised or refined. Monitoring gives a clear (and developing) image of the climate and material footprint. Monitoring gives organisers insight in their progress for the thematic elements which are included in the model.

During the busy festival season, circular solutions are tested and implemented, and festivals learn by doing. After the festival, it is time to reflect on the effectivity of the approach and if needed adjust the plans. New insights and opportunities may also result in an update of the plans for the following year or even of the sustainability plan for the longer term. Festivals continuously improve their performance, aiming to become circular and climate neutral. To have success, it is vital that sustainability remains on the agenda of all management meetings, that it is embedded into all daily operations, and that the ownership to contribute is embedded in the entire team. The yearly recurring cycle is summarised in the figure below.



Part 2 | The Model

2.1 Our spot on the horizon: Circular and Climate Neutral Festivals

We believe in the potential of festivals to contribute to the transition of society to become circular and climate neutral, which is vital for a healthy planet, to protect nature and to safeguard prosperity for future generations. Festivals can play a guiding role to inspire a green movement and accelerate society's transition. Therefore, we strive for fully circular and climate neutral festivals, ultimately meaning:

- We fundamentally change the way we use materials at our festivals, by adopting **Smart Resource Management**. In line with the Ellen MacArthur Foundation's widely used model for a circular economy, we rethink our productions in such a way, that we limit the need for unrenovable resources and materials, keep in circulation materials, and 'design out' waste. While aiming for the highest level of circularity, recycling and re-use are intermediate steps.
- We organize our festivals **Net Zero**, to reduce to 'zero' all carbon emissions related to our festivals, and across our supply chains and compensate unavoidable emissions.
- We positively contribute to the local **Communities and Biodiversity**, by designing-out any negative environmental impact and even enhancing the quality of the local environment of communities, habitats and ecosystems.

A next step after Circular, is to become Regenerative Festivals !

At this time, most efforts focus on optimizing current systems and on the 'way we do things'. This is a logic first step, to limit waste, reduce negative impacts and achieve 'neutrality'. However, a fully circular festival goes beyond aiming for 'neutrality' and - in line with the key principles of a circular economy - strive to regenerate nature and its resources. Ultimately, we aim to 'build' natural capital, by allowing nature to rebuild, biodiversity to increase and the natural environment to improve. We leave more room for nature to thrive, and actively improve the quality of the environment for local communities. Moving towards regenerative festivals, require to drastically rethink the norm for our business models and how we organize our festivals.



2.2 Five themes of a Circular and Climate Neutral Festival

The overall ambition to become circular and climate neutral provides an appealing perspective. Of course. But what does it practically mean for the production of our festivals? Therefore, five themes have been specified which account for festivals' potentially biggest impact. The themes are shown below.



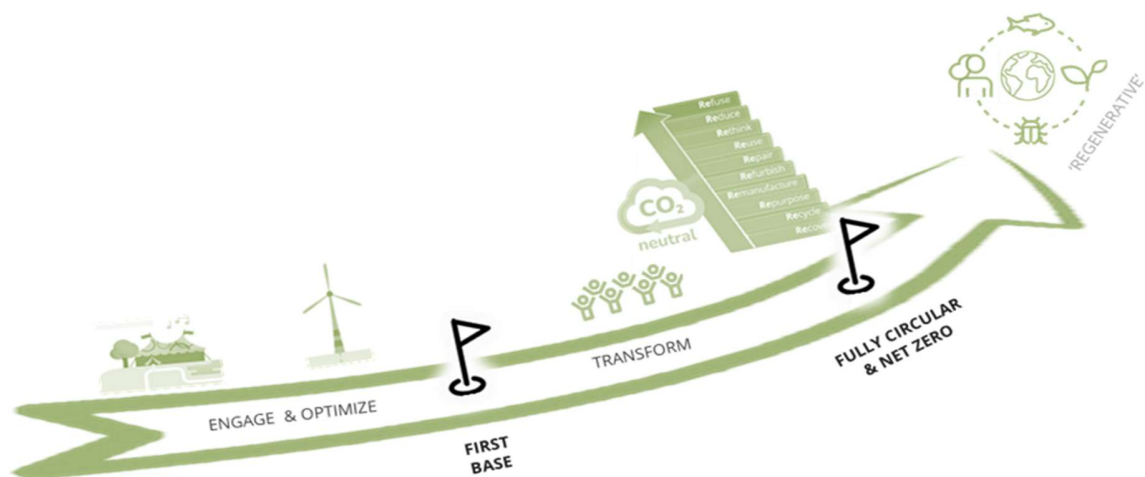
In the next Chapter, for each theme, the definitions, ultimate goals to become fully circular and climate neutral, and feasible intermediate targets (first base), are specified. Therefore, the themes are broken down into specific elements. Also, for each theme vital first steps are indicated, aligned with the European Green Festival Roadmap 2030, which provides further inspiration with concrete measures which may be considered to realize the targets.

Implications of the ambition to positively contribute to local communities and biodiversity

At this time, both the GDCF Monitor and the thematic specification of the model, focus on the overall ambition for smart resource management (incl. waste management) and the ambition to become Net Zero. The ambition to positively contribute to the local environment of local communities and biodiversity, has not yet been specified. The intention is to add these elements in a future update of the model and the GDCF Monitor, to also provide perspective for festivals to become regenerative.

2.3 Guidance for a step-by-step approach

Each festival has a different size and local possibilities and is at a different stage in its journey towards circularity and climate neutrality. For every new edition, festival organizers should aim for measures with the highest positive impact. This requires making choices in how to make a next step, given the specific local circumstances, regulatory conditions, arrangements with suppliers, receptiveness of the audience, and the available solutions at that time. Also, choices will depend on the capacity of the team, available time and financial capability to implement solutions. Especially in a time the sector is dealing with increasing costs, capacity constraints and regulatory challenges! Therefore, the participants of the GDCF developed a model which is ambitious and at the same time realistic, by providing flexibility in the way the ultimate goals can be implemented step-by-step. Ultimately reaching for the highest level of circularity and climate neutrality for all our scopes of influence. This is visualised below.



Frontrunners of the Green Deal Circular Festivals guiding the way

By signing the GDCF, participating festivals committed to strive for the highest level of circularity and climate neutrality possible by 2025, considering the circumstances and possibilities at that time. With the GDCF Model, the European frontrunners of the GDCF put the bar high; they intend to accelerate their sustainable transformation and realise the European targets of 2030 and 2050 even quicker. Therefore, participating festivals defined the ideal circular and climate neutral festival, meeting with the European targets for 2050. Also a 'first base' has been defined, with targets which can be achieved ahead of the European targets for 2030. This first base is an ambitious but feasible first step, which will help festivals moving in the right direction. Considering their current level of circularity and considering the specific local circumstances, each festival set their own priorities. Festival organisers select themes for inclusion in their sustainability plans, based on their assessment of which elements will contribute most towards a higher level of circularity for their festival at that time. Where festivals in some countries already make a huge step by reaching the 'first base', for other festivals reaching the ultimate goals for circularity and climate neutrality might be already in sight. By early and pro-actively anticipating on the climate and circularity targets of the government, the frontrunners of the GDCF step-up the efforts in the journey towards circularity to inspire others and guide the way for a future-proof sector.

Level:

Important milestones:

First Base

- The festival organization has a sustainability plan / circular roadmap in place.
- The festival monitors its impact on circularity and GHG performance (see text box).
- The festival realized the First Base targets for the 5 themes as laid out in this model.
- Most efforts focus on activities on which the festival organization has direct control.
- Most efforts focus on optimization of processes to bring back to zero residual waste (through reduce, re-use and recycling) and to become Net Zero. Therefore, various event sustainability tools – such as the online ‘GDCF Toolbox’, ‘Future Festivals Tools’ and the ‘European Green Festival Roadmap 2030’ provide inspiration with concrete solutions and cases.
- Related to the GHG Protocol (see text box): Emissions in Scope 1 (from assets owned or operated by the festival organization) and Scope 2 (purchased energy from renewable sources) are zero emission. In Scope 3, steps have been made to involve and positively influence suppliers and travel of visitors and artists. All unavoidable emissions are compensated (see guidelines further on in this document).
- The festival organization engaged in a dialogue with suppliers on how to realize the sustainable transformation of the supply chain (up- and downstream).
- The festival organization engaged in a dialogue with local authorities on how to realize the sustainable transformation in a joint efforts.

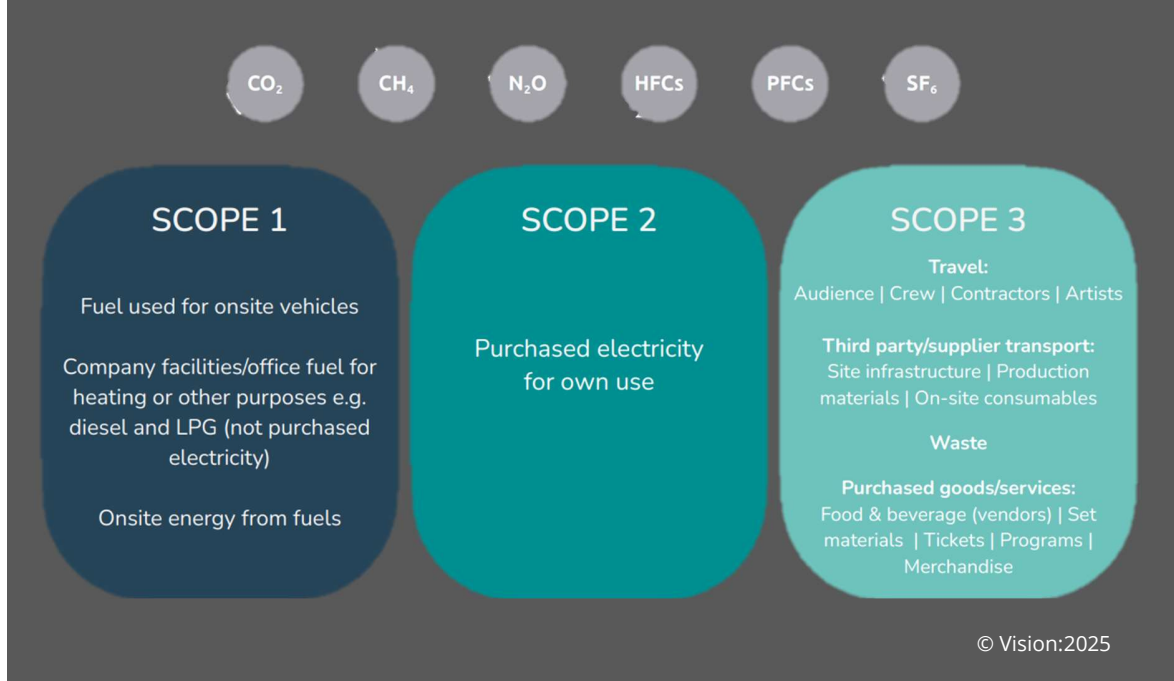
Fully Circular & Climate neutral

- The festival organization realized all ultimate goals for the 5 themes and has become fully circular and climate neutral. The festival complied with the EU-targets for 2050 of the Green Deal (Net Zero) and the Circular Economy Action Plan (fully circular).
- Therefore, efforts focussed on rethinking of processes and supply chains, to design out waste and the need for unrenovable resources and materials.
- The festival minimized its negative impact on the local environment and on nature, and any negative impacts are compensated.
- The circularity and climate neutrality of activities attracted by the festival in the surroundings (vendors, taxi’s, etc) is also ensured.
- Related to the GHG Protocol, on top of the level 2 targets, in Scope 3, now also the travel of visitors and activities attracted by the festival (vendors, taxi’s etc) are Net Zero; unavoidable emissions are reduced to a minimum and are compensated.
- In the festivals’ dialogue with local communities and local authorities, a path has been identified how to make a next step to become a regenerative festival, aiming to (re)build nature, increase biodiversity and improve the local environment.

Step-by-step covering all Green House Gas Emission Scopes

The widely used Greenhouse Gas Protocol ([GHG Protocol](#)) provides guidance for how organizations should account for their greenhouse gas emissions, based on the level of influence and control an organization has. The GHG Protocol introduces three 'scopes' to calculate organizations greenhouse gas emissions for three levels of control. Inspired by, and in line with the commonly used scopes of the GHG Protocol, we incorporated the scopes in the step-by-step approach to become circular and climate neutral at the same time. Festival organizations logically start with reducing the impact of the materials, equipment, and vehicles that they own, rent and use to organize, build-up, execute and break-down the festival. Gradually the focus extends to reducing the impact of goods and services from external suppliers, the impact of visitors and ultimately the impact of activities attracted by the festival in its surroundings. Therefore, festivals will need the support and help from suppliers, service providers and local governments to gradually maximize impact.

The figure below, includes an overview of what of a festivals' production is to be included in the scopes for GHG calculations.



Energy

For the production of festivals, large amounts of energy are needed to operate all systems. Traditionally, festivals heavily rely on the use of fossil fuels, to ensure reliable electricity provision. This is vital for festivals, since festivals are often organized at temporary sites where grid connections with sufficient capacity are not abundant. To define a circular and climate neutral festival, the concept of the Trias Energetica (Delft University, 1979) has been optimized to the 'Renewable Trias Energetica', as a basis for festivals to design an energy efficient model. This concept includes three elements to be considered in the festivals' energy planning:

- **Reduce the energy consumption at your event**
First priority should be to rethink the current festival production, to increase energy efficiency and to rethink and optimize the use of systems which consume energy in the form of electricity and fuel.
- **Use onsite renewable energy sources**
When energy is needed, move away from systems which require fossil fuels, to phase out the use of scarce natural resources and to phase out the emission of greenhouse gases (GHGs). In a circular economy, locally produced energy is ultimately preferred. While the use of reliable onsite generated renewable energy remains a challenge for most festivals, there are more and more examples of integrated solar and even wind power solutions at festivals. As solar and wind power depend on the weather conditions, combination with battery storage or hydrogen storage is essential. When the onsite generated renewable energy exceeds the consumption of the event, this can be termed an 'energy regenerative' event.

Renewable energy sources

The parties of the GDCF consider the following energy sources as renewable: solar energy, wind energy, hydropower, geothermal power and kinetic energy. These sources have few or no greenhouse gas emissions and do not jeopardise the energy needs and climate of future generations. While these renewable energy sources reduce the need for fossil fuels, the production of electricity generation installations still require scarce natural resources. The parties of the GDCF consider nuclear energy, fuel and energy based on biomass (only as temporary solution) and hydropower above 10 MW as non-renewable.

- **Use remote (off site) generated renewable energy**
In many cases, renewable energy from the grid (renewable energy produced elsewhere and transported to the event) will be vital for festivals to ensure the use of renewable energy. This can be done through a cable (grid connection) or the renewable energy can be stored in batteries or in hydrogen and transported to the event site. However, the production and operation of such storage equipment often require (scarce) natural resources and therefore on site generated energy, and/or a grid connection to bring in renewable electricity, is preferred.

More info on the application of the 'Renewable Trias Energetica' concept for events, can be found here: <https://www.greenevents.nl/en/energy-en/renewable-trias-energetica-the-path-to-emission-free-renewable-energy-at-your-event/>

Ultimate goal

Ultimately, all energy used for powering of electric and fuel required equipment, heating and cooling during the build-up, execution and breakdown of the event is:

- Reduced to a minimum, by rethinking processes and systems to limit the use of energy and increasing their energy efficiency.
- Fully generated by renewable energy sources (solar, wind, hydropower, geothermal power and kinetic energy), which preferably is locally produced.
- All greenhouse gas emissions within Scope 1, 2 and 3 are Net Zero and all unavoidable emissions are compensated following the guidelines in this document.

In a circular event, renewable energy is preferably generated locally, also to deal with constraints in the capacity of grid connections. However, festivals who have the opportunity to (partly) connect to a local grid connection to bring in renewable energy which has been generated elsewhere, may consider this as a viable option to become fully renewable and Net Zero zero emission regarding energy.

First Base targets

Compared to the ultimate goal, the following targets may be realized already on a shorter term:

- The use of energy used for powering of electric and fuel required equipment, heating and cooling during the build-up, execution and breakdown of the event is reduced to a minimum, mainly through optimization.
- For on-site generated energy Hydrotreated Vegetable Oil (HVO)* and Biogas (CNG) may be considered as additional temporary sources, besides solar, wind, hydropower, geothermal power and kinetic energy. HVO second generation is renewable, almost fossil free but not zero emission. During (fossil) transport to move the HVO fuel and during processing, CO₂ is emitted. The use of renewable HVO, can be an intermediate step towards circularity, when not possible to connect to a local grid connection.
- If possible, transport renewable energy which has been produced elsewhere to the festival, through a grid-connection, hydrogen, formic acid, e-fuels or batteries.
- All greenhouse gas emissions within Scope 1 and 2 are Net Zero, and all unavoidable emissions are compensated following the guidelines in this document.

Important firsts steps

- ✓ Make an inventory of all energy consumers on your festival (Ideally before the build up of the festival starts).
- ✓ Consider if all energy consumers are really needed for the festival and if the energy consumers (equipment) are energy efficient.
- ✓ Determine the required size (capacity) based on the inventory and reduce as much as possible the running time of generators.
- ✓ Measure fuel and preferably also the power and energy consumption per generator.
- ✓ Make notes to have the information about possible savings for the next edition available when starting the plan the power (supply) for the next edition.
- ✓ See for more options: [GDCF Toolbox](#), [Future Festivals Tools](#) and the [European Green Festival Roadmap 2030](#).

Indicators GDCF Monitor

- Electricity consumption.
- Fuel consumption (bio and non-renewable).
- Renewable / non-renewable energy on-site.
- Renewable / non-renewable energy from grid
- CO₂ emissions..

Materials

For the production of festivals, a wide range of materials is being used, which are purchased before or recycled after the festival. It is critical for festival organizers to monitor their specific material and waste flows, to determine where the highest impact can be achieved. At this time, based on the initial insights from festivals, three main material groups have been identified:

1. Building & production materials (incl. decoration and stages, etc)
2. Catering serving materials (incl. cutlery, etc)
3. Materials brought in by the audience (incl. campsite materials, etc)

These materials currently often end up as residual waste, which traditionally ends up in landfills or in waste incineration plants, causing negative impacts on the environment. Furthermore, waste flows lead to GHG emissions generated by the transport of waste, by processing of waste, by recycling processes and by landfill disposal. The impact of the production and processing of these materials on GHG emissions, is calculated under Scope 3. The emissions from transporting these materials to and from the festival site are covered under the theme Travel & Transport.

At this time, the impact of rented and reused materials is not considered in the model and their GHG emissions are currently not being calculated in the GDCF Monitor, since such materials are reused many times and the production footprint therefore only accounts for a very limited part of the total footprint. Moreover, measuring the material flows including all rental and reused materials is very complex, which at this time is expected to be hardly measurable by festival organizations.

R-Ladder

The GDCF strives for the highest level of circularity on the R-ladder¹. The R-ladder shows that preventing raw-materials and the use of resources is a starting point that precedes thinking about reuse of materials and resources where possible. The following levels are defined, from highest priority, to lowest priority:

- Refuse: prevent raw-materials use
- Reduce: decrease raw-materials use
- Rethink: redesign processes to become circular
- Reuse: use product again (second-hand)
- Repair: maintain and repair product
- Refurbish: revive product
- Remanufacture: make new product from second-hand
- Repurpose: reuse product for a different function
- Recycle: salvage material streams with highest possible value
- Recover: incinerate waste with energy recovery

¹ Cramer, J. (2017), 'The Raw Materials Transition in the Amsterdam Metropolitan Area: Added Value for the Economy, Well-Being, and the Environment', *Environment: Science and Policy for Sustainable Development*, 59(3).

Ultimate goal

Ultimately, all materials acquired and disposed of by the festival organization and by suppliers, including (but not necessarily limited to): 1) building & production materials, 2) catering serving materials, and 3) other materials (incl. campsite materials), are:

- Reduced to a minimum, by rethinking the production and considering alternative design and materials, to prevent the need to acquire non-renewable and scarce materials.
- Result in zero residual waste, by keeping in circulation materials, aiming for the highest levels of circularity, preferably by refusing, reducing, and reusing materials, and else by recycling on the highest possible level. Zero waste is sent to landfills.
- The use of single-use plastics is eliminated, with any unavoidable plastic being recycled to a high standard.
- All new materials come from renewable resources, such as biobased materials or recycled materials. The use of fossil and scarce natural resources is eliminated.
- The impact of the use, recycling, reuse, and disposal of all materials (Scope 3) is Net Zero and all unavoidable emissions are compensated following the guidelines in this document.

First Base targets

Compared to the ultimate goal, the following targets may be realized already on a shorter term:

- Festivals start with limiting the need to purchase non-renewable and scarce materials, by optimizing the design and use of materials, starting with 1) building & production materials, 2) catering serving materials, and 3) other materials brought in by the visitors (incl. campsite materials). The use of virgin materials is minimized as far as possible.
- All materials purchased for the festival are preferably reused or minimally recycled or composted. Residual waste is minimized as far as possible.
- The use of single-use plastics is eliminated, with any unavoidable plastic being recycled to a high standard.
- All new materials purchased by the festival organization are produced by renewable resources, preventing the use of fossil and scarce materials. With suppliers, steps are being made to ultimately follow this example.
- All unavoidable emissions in Scope 3 are balanced following the guidelines in this document.

Important firsts steps

- ✓ Create resource- & waste management based on the R-ladder.
- ✓ Create a procurement policy based on the R-ladder.
- ✓ Eliminate single use products and materials and replace single use products and materials that can not be eliminated by reusable alternatives.
- ✓ Measure the amount of 'end of life' materials and balance the unavoidable emissions.
- ✓ See for more options: [GDCF Toolbox](#), [Future Festivals Tools](#) and the [European Green Festival Roadmap 2030](#).

Indicators GDCF Monitor

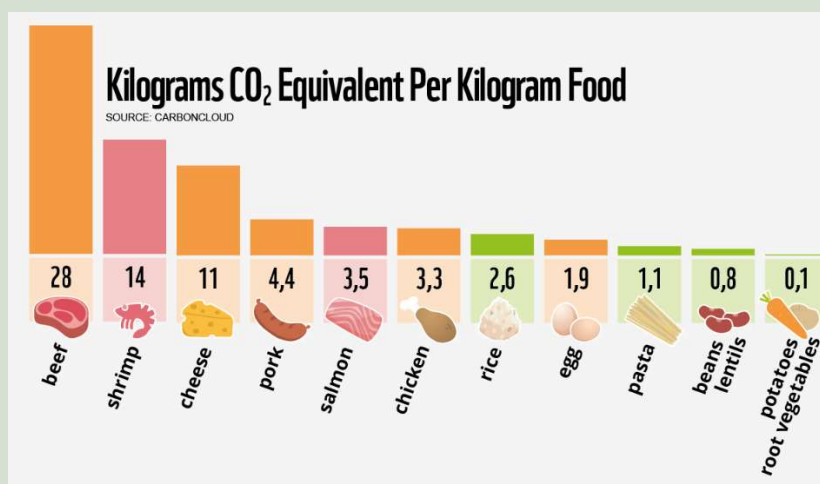
- Procured new materials (various types).
- Reusable / recyclable cups, tableware, cutlery.
- Separated materials for recycling.
- Residual waste incl. treatment pathways.
- CO₂ emissions.

Food & Drinks

Every festival sells and/or provides food and drinks, during the building, execution and break-down of the festival. Food and drinks - including their production and distribution - have a major impact on a festivals' footprint. This includes food and drinks for:

1. Crew
2. Audience
3. Artists

The impact of food and drinks on GHG emissions, material flows and environmental footprint, is determined by the way it is grown and processed, the location the food and drinks come from, and the amount of food that ends up as residual waste. All food and drinks sold and/or provided at the festival, are included in GHG Scope 3.



The emissions from the transportation of food & drinks to and from the festival site, are covered by the theme Travel & Transport. The emissions from packaging, serving materials and composting food-waste are covered by the theme Materials. The emissions from cooking, cooling and processing on site, are covered in the theme Energy. Therefore, the emissions counted in this theme only include the GHG emissions from the production and processing of food and drinks off-site.

Ultimate goal

Ultimately, all food & drinks sold and provided at the festival to 1) crew, 2) audience, and 3) artists, from building, execution to breaking down of the event:, are:

- Reduced to a minimum amount of foods and drinks prepared, by smart planning of catering to prevent spillage.
- All food and drinks are mainly plant based. The ingredients are organic certified (no pesticides, no fertilizers, enhance crop diversity, soil and biodiversity), or from biological or regenerative produce, to also sequester carbon and enrich soil, air and water quality.
- Ingredients are preferably seasonal and from diverse origins and short supply chains (Farm to Fork). Caterers, food and drinks are sourced from the local area, within 200 km distance.
- There is zero residual waste from food and drinks, by flowing back left-overs and spilled food and drinks into nutrient cycles in the highest possible way, such as food for humans, animal feed, or compost.
- The average carbon emission of all dishes served at the festival are within the limits of 0.5 kg CO₂e per serving. For drinks this figure still need to be determined. Ultimately, the impact of the production of all food and drinks (Scope 3) is Net Zero, which means that all unavoidable emissions need to be compensated.

First Base targets

Compared to the ultimate goal, the following targets may be realized already on a shorter term:

- Festivals start with reducing the amount of food and drinks spilled, by smart planning of catering.
- Minimal 75% of the total kilos of ingredients of dishes and of the total amount of drinks are plant based, organic certified or from regenerative practices.
- Minimal 50% of the edible food and ingredients after the festival is distributed for human consumption.
- 100% of the remaining food waste from caterers are used for animal feed or composted for land use.
- Minimal 50% of the total kilos of ingredients of dishes and of the total amount of drinks is locally produced, within 200 km distance).
- The average carbon emission of all dishes served at the festival are below 1 kg CO₂e per serving. For drinks this figure still need to be determined.

Important firsts steps

- ✓ Design out food-waste by optimized catering planning.
- ✓ Eliminate animal products from the menu.
- ✓ Partner with an organic certified beerbrand.
- ✓ Collaborate with caterers who work with local and organic certified ingredients.
- ✓ See for more options: [GDCF Toolbox](#), [Future Festivals Tools](#) and the [European Green Festival Roadmap 2030](#).

Indicators GDCF Monitor

- Sources of consumed food (organic, regenerative, distance).
- Ingredients of food or impact of meals.
- Sources of consumed drinks (organic, regenerative, distance)
- Impact of drinks.
- CO₂ emissions.

Travel & Transport

Festivals always involve a large number of movements of travelling people and the transportation of goods. The following general types of travel & transport are identified:

1. Travel of crew and volunteers
2. Travel of artists
3. Travel of audience
4. Transport of suppliers for transportation of personnel and goods (incl. transport of site infrastructure, production materials, food & drinks, and other service providers)

Travel & transport is responsible for a major part of the total greenhouse gas emissions of festivals. To calculate these emissions, the emissions from company owned and rented vehicles for transport of people and goods, on and outside the festival site (including from purchased fuel) - is included in GHG Scope 1. The emissions from the travel of crew and volunteers, artists and audience, and the transportation of suppliers, is included in GHG Scope 3.

To define a circular and climate neutral festival for travel & transport, the concept of the Trias Mobilica (inspired by Trias Energetica) provides a basis to design an efficient travel and transportation model. This concept includes three elements to be considered in the festivals' transport planning:

- **Reduce mobility**
Reducing the number of travel and transport movements, should be a first priority which can be achieved by smart selection of the festival location, for instance in the vicinity of public transport services, by encouraging concepts such as new working methods and smart logistics, by smart programming of artists (regional selection and combining trips) and by selecting suppliers and crew in the vicinity of the festival site.
- **Switch towards sustainable modes of transport**
Travel and transport cannot be avoided, but it is possible to stimulate a switch in modes of transport used, towards more sustainable options. For example, encouraging the use of public transport, trains for international travel, bicycles, shared cars, etc.
- **Sustainable travel & transport**
Travel and transport can be made more sustainable, by using vehicles powered by renewable fuels or electricity.

Renewable energy sources for travel and transport

The parties of the GDCF consider the following sources as renewable to power vehicles: electric from renewable energy (wind, solar, small hydro, geothermal), hydrogen, formic acid and human power (walking, bicycle, rowing, sailing, etc). The parties of the GDCF consider nuclear energy, fuel and energy based on biomass (only as temporary solution) and hydropower above 10 MW as non-renewable.

Ultimate goal

Ultimately, all travel of crew and volunteers, artists and audience, and the transportation of suppliers and supplies (on and off-site) is:

- Reduced to a minimum, by rethinking the selection of the festival site and the site design, by smart planning of transport and logistics, by smart programming of artists and by smart selection of suppliers and crew, to limit the distances travelled and transported and with that reduce the emission of greenhouse gasses.
- Optimized to accommodate crew, volunteers, artists and audience to switch towards using more sustainable modes of transport, by encouraging the use of public transport, trains for international travel, bicycles, shared cars, etc., resulting in a reduction of GHG emissions.
- All transportation with company owned and rented vehicles on and outside the festival site (GHG Scope 1) is powered with renewable sources and is Net Zero. Also all the travel of crew and volunteers, artists and audience, and the transportation of suppliers (Scope 3) are Net Zero, which means that all unavoidable GHG emissions are compensated.

First Base targets

Compared to the ultimate goal, the following targets may be realized already on a shorter term:

- Festivals start with reducing travel and transport to a minimum, by smart planning of the festival production, of transport and logistics, smart programming of artists and the selection of suppliers and crew.
- There are sustainable travel options available to travel to the festival and the festival organization pro-actively promotes and facilitates the use of sustainable modes of transport.
- All transportation with company owned and rented vehicles on and outside the festival site (GHG Scope 1) is powered with renewable sources and is Net Zero. The travel of crew and volunteers and the transportation of suppliers (Scope 3) is as far as possible powered with renewable sources. To promote sustainable travel of artists and audience, the festival – together with partners - pro-actively promotes and facilitates sustainable travel. All unavoidable GHG emissions are compensated following the guidelines in this document. (biofuels are possible temporary to support sustainable aviation of artists and audience).

Important firsts steps

- ✓ Monitor travel and transport 'flows' and their impact.
- ✓ Prepare sustainable travel and transport plan, optimizing logistics and prioritizing sustainable transport options.
- ✓ Engage in dialogue with local authorities and transport providers, to ensure the availability of sustainable transport options.
- ✓ Use sustainable transport options for on-site transportation and for own and rented vehicles.
- ✓ Stimulate crew, artists and audience to use sustainable travel options, through communication, incentives and smart programming.
- ✓ See for more options: [GDCF Toolbox](#), [Future Festivals Tools](#) and the [European Green Festival Roadmap 2030](#).

Indicators GDCF Monitor

- Traveller kilometres travelled per modality for crew/volunteers, artists and audience.
- Consumption of electricity and fuel (renewable / non-renewable) for transportation by suppliers.
- CO₂ emissions.

Water & Sanitation

For the production of a festival, the following aspects of water resources management need to be considered in the festivals' effort to become circular and climate neutral:

1. Essential water use, including safe water for drinking and cooking, water for food preparation and dish washing, and water for sanitation purposes (including hand washing, showers, some toilet systems).
2. Non-essential water use, including water as part of the scenography of the festival, dust control, water effects and hot tubs.
3. Wastewater management, including the disposal of pee and black water (human solid waste), from the perspective of the destination of the wastewater and the impact of the end-of-life solution and the energy use.
4. Water quality of the local environment, including the impact of the use, disposal and run-off of water on surface water, water courses and ground water, and the impact on (aquatic) ecology on and around the event sites.
5. Water scarcity is adding another dimension to how water needs to be managed at events, to avoid exacerbating local scarcity from human and ecology perspectives.

Also, the associated impacts of how water is provided, such as emissions from transport from tankered water, or the impact of packaging need to be considered; this is taken into account in the themes Travel & Transport and Materials.

Examples of how to apply the R-ladder on Water & Sanitation

In line with the R-ladder, the GDCF strives for the highest level of circularity for water use, meaning prevention and reduction of non-essential water use, above reuse and disposal of wastewater. For essential water use, reducing consumption cannot be the goal; people require safe levels of hydration and hygiene, and in hotter weather conditions, higher water consumption may be desirable and safer.

Solutions for water reuse onsite of some essential water usages (such as safe water for drinking and cooking etc.), are less common, due to the need to meet strict safety legislation. It is important to make sure that all taps onsite automatically switch off through the use of non-concussive taps and developing a culture of water saving.

The source of non-essential water usage onsite can safely be gained from a wider selection of sources. Options include rainwater collection systems, water purification systems, recycling water onsite, and boreholes (that may not be certified as safe drinking water). When looking at any water usage and provision onsite, it is important to remember that the situation at each event may be very different due to circumstances beyond control, but nonetheless, there are various ways to reduce environmental impacts, including for instance:

- technical measures to reduce water usage and to design out waste water;
- choose lower impact methods for providing water (use mains water over water in single use packaging or tankered water);
- choose a process for disposal of human waste for nutrient recovery and end of life use;
- strict working practices and monitoring to prevent pollution to the local environment.

Ultimate goal

Ultimately, all water used and disposed during the building, live show and break-down of the festival - by the festival organisation and suppliers - is:

- Limited to a (safe) minimum use of essential potable water sourced from mains supply, boreholes or other sources for filtered/purified water onsite.
- Reduced to a minimum water used for non-essential water usage. All non-essential water comes from renewable sources, such as rainwater harvesting, watercourses or boreholes.
- All water exiting the festival is treated on site, to ensure it is as clean or cleaner than it came in (*this requires use of only eco-friendly non-toxic cleaning products, separation of liquid waste from sewage, and wastewater being treated to the highest available standard and reused efficiently*).
- Zero pollution to the local environment and surface and ground water, through strict working practices, testing and monitoring.
- All transport, treatment, heating or cooling of/by water and wastewater (Scope 3) is Net Zero and all unavoidable emissions are compensated.

First Base targets

Compared to the ultimate goal, the following targets may be realised more easily and in a shorter term, and for more types of events:

- Festivals start with reducing to a minimum use of non-essential water, by rethinking water-using processes and systems. Non-essential water comes mainly from renewable sources, such as rainwater harvesting, watercourses or boreholes.
- Differentiation in the processing of types of wastewater: yellow (urine), black (poo) and grey (washing) water, to limit to a minimum the disposal of waste water. All human waste is processed in such a way to recover and (re)use nutrients.
- Zero pollution to the local environment and surface and ground water, through strict working practices, testing and monitoring.

Important firsts steps

- ✓ Create a Water Management Plan which includes all elements of; avoiding waste, reducing non-essential use and avoiding pollution, and associated impacts of supply.
- ✓ Avoid the use of water from non-mains supply and in packaging (where possible and safe to do so).
- ✓ Install water saving devices such as push button taps, tap and shower flow regulators, dual flush toilets, etc. Prioritise using waterless urinals, water free toilets or low flushing toilets.
- ✓ Work to install or connect to permanent water infrastructure on owned sites, or with the site owners; implement long-term measures such as rainwater harvesting, purification systems. (*urban events will be more able to reach the ultimate goal, due to permanent infrastructure. Greenfield events typically face more challenges, but can strive to put in place onsite measures*).
- ✓ Communicate to all people onsite the need to conserve and avoid pollution of water.
- ✓ See for more options: [GDCF Toolbox](#), [Future Festivals Tools](#) and the [European Green Festival Roadmap 2030](#).

Indicators GDCF Monitor

- Total fresh water consumption from utility.
- Total non-drinking water from aquifer, lake and sea, used on the festival site.
- Waste water treated on site.
- CO₂ emissions.

2.4 Next steps

The model of the GDCF will further develop over time. Next steps include:

1. Future updates of the model

Based on new insights from monitoring, experiences of festivals, and based on developing definitions, key figures, benchmarks and specific targets for specific sectors, the model will be updated when needed. Specific optimisations which will be further explored, include:

- more specific (quantitative) targets for the five themes, based on insights from monitoring;
- possible CO₂ emission reduction targets (for scope 1 and 2, see also no. 4);
- definition, ultimate goals and targets to reduce the negative impact of festivals on the local environment and biodiversity.

The model is open-source available. Our only condition is, that we ask you to share your feedback and experiences with the application; this will be valuable for further developing the model and monitor. Please share your comments, requests and experiences via: circularfestivals@outlook.com.

2. Aligning various models, measuring tools and events sustainability tools

Efforts will continue, to align the model with various models, measuring tools and event sustainability tools and certifications. The aim is that various tools are complementary and easy for the sector to use. This requires uniformity in the way circularity and climate neutrality are defined and measures.

3. Inspire a green movement throughout the festival sector

Together with partners of the 'green family' (including Green Deal Circular Festivals, Yourope, Green Events, Greener Events, Julies Bicycle, A Greener Future, Lab Vlieland, UK Vision2025, Ecolibrium, Music Declares Emergency, Earthpercent, ESNS, and others), options will be explored, how to inspire and enable the mainstream festival sector in their sustainable transformation. Therefore, the model provides an important starting point, with a 'spot on the horizon' as a joint future sustainable perspective for the sector. Elements to be explored, include for instance further dissemination of the model and other tools throughout the mainstream sector, enabling the mainstream sector to take action, introducing aligned green codes and standards for the sector on a European, national, and local level, and creating standard measuring protocol (in line with the GDCF Model and Monitor).

4. Guidelines for carbon accounting, reporting and compensation

Festivals commit to become overall climate neutral, which means Net Zero Green House Gas Emissions. The European Commission sees carbon pricing as a central instrument in the EU's fight against climate change, but also recognizes that introducing such a scheme, requires a careful approach due to its impact on businesses and the economy. Ultimately it is desirable to set clear and fair carbon pricing and/or fair standard emission reduction standards for the sector on a European level, to ensure a fair and level playing field for festival organizers throughout Europe. As part of further developing the model - to create clear guidelines - the following elements will be further developed:

- CO₂ emission reduction targets (%) for scope 1 and 2, based on best practice for a Net Zero approach;
- guidelines for compensation methods and verifications that are most effective;
- benchmarks for impacts in the five themes as guidance for events.

Guidelines for carbon accounting and reporting

Our work as festivals on Net Zero, is 'work in progress'; we are aware that global standards and certification for offsetting are imperfect and that an ISO standard for Net Zero is under development. Carbon accounting and reporting should be based on the internationally recognised system of scopes under the Global GreenHouse Gas (GHG) Protocol, and nationally published carbon conversion factors for materials and activities (where available). Any business is considered responsible for scope 1 and 2 emissions and should 'influence' scope 3 where possible.

Emission reduction targets

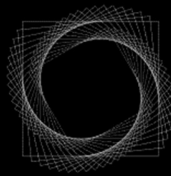
Specific emissions reduction target(s) have not been included in the model due the different stages all participants are in their journey i.e. some festivals have already made huge emissions reductions, while others are still to make their first steps. However, as a general guide, we encourage festivals to consider as a minimum the European target of 55% reduction of scopes 1 and 2 by 2030 (also adopted by the European Green Festival Roadmap 2030), using baseline data from the closest year to 1990 - realistically for most events, the first robust data set they have available.

Guidelines for carbon compensation

We propose best practice regarding emissions by using the net zero concept. Reducing emissions as much as possible as a primary focus, and only compensating for any unavoidable emissions. Such compensation should be done by financing projects that remove carbon from the atmosphere, and/or by investing responsibly in natural capital and climate. Importantly, for a net zero commitment to be meaningful, it cannot rely on offsetting as a main strategy.

Best practice for net zero strategy in events

1. Measure and report at least scopes 1 and 2 emissions (and aiming to include scope 3) annually or for each event.
2. Have a medium-long term plan in place to substantially reduce emissions with stated targets (guideline of at least 55% by 2030).
3. Create a budget line for offsetting, and responsibly Invest in climate and nature to compensate for unavoidable emissions. Setting a high internal emissions price creates a financial incentive to prioritise emission reductions, and encourages the purchase of offset that are high quality. Based on discussions with participants of the GDCF, a fair price between € 50 - € 100 per tonne CO₂e is proposed.



Circular Festivals

United for a Circular & Climate neutral world



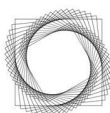
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