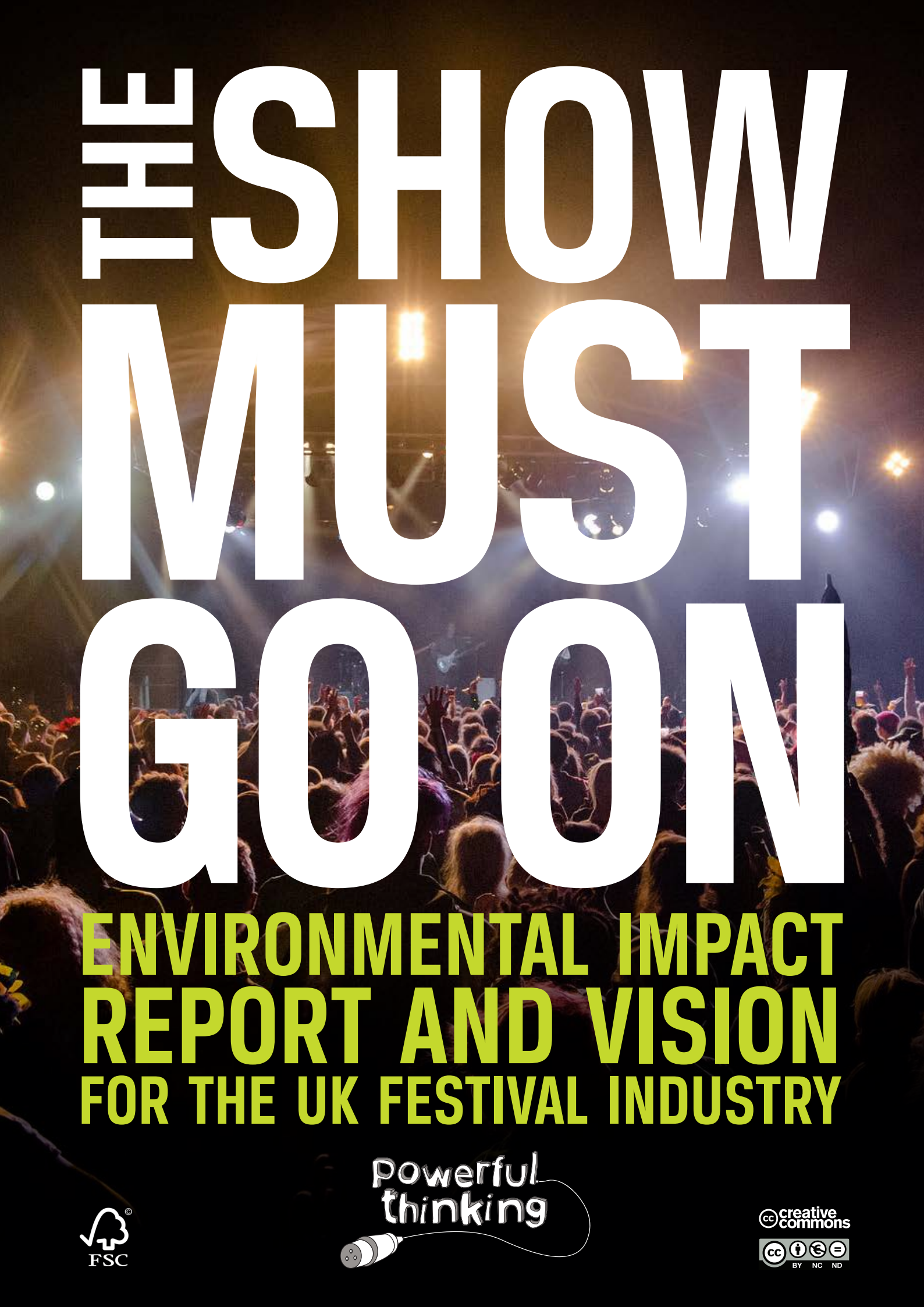


THE SHOW MUST GO ON

ENVIRONMENTAL IMPACT REPORT AND VISION FOR THE UK FESTIVAL INDUSTRY

Powerful thinking

FESTIVAL INDUSTRY IMPACTS BY NUMBERS

2014 HAS BEEN DECLARED THE HOTTEST YEAR ON RECORD (globally)

THE UK'S SUMMER OF 2012 TURNED OUT TO BE THE WETTEST ON RECORD IN A CENTURY

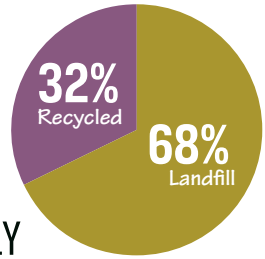
3.17 MILLION

UK MUSIC FESTIVAL GOERS ANNUALLY

WASTE

23,500 TONNES

OF WASTE ANNUALLY



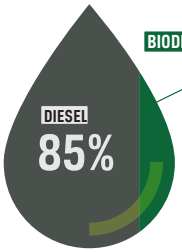
FUEL

5 MILLION LITRES

The total litres of fuel used by the UK festival industry annually.

Average litres of diesel at UK music festivals

0.6 LITRES PER PERSON PER DAY

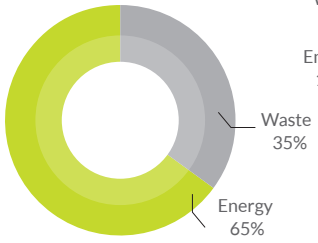


BIODIESEL USE

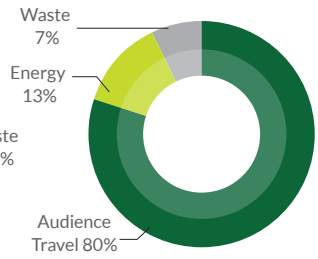
Of the 13 medium to large events with a combined audience of 1.3m that used the Julie's Bicycle Creative IG Tool, over 50% of the events were using some waste vegetable oil (WVO) biodiesel with an average total consumption of 15% WVO biodiesel and 85% diesel.

FESTIVAL CARBON FOOTPRINT

AVERAGE CARBON FOOTPRINT (ONSITE) (CO_2e)



AVERAGE CARBON FOOTPRINT WITH AUDIENCE TRAVEL (CO_2e)



Energy ■ Waste ■ Water ■ Audience Travel

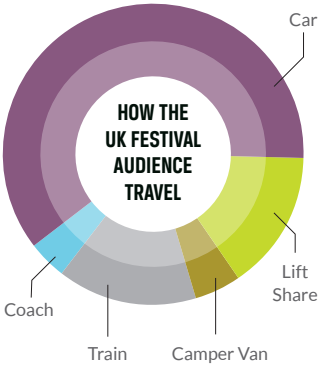
CARBON EMISSIONS

Total UK festival industry emissions (excluding travel)

19,778 TONNES

CO_2 per year

TRAVEL *



TRAVEL TYPICALLY CONSTITUTES AROUND

80%

OF A FESTIVAL'S TOTAL KNOWN CO_2e EMISSIONS*

*not counting artist/crew/ service travel and transport

*Please see www.powerful-thinking.org.uk/vision2025/references for an explanation of the travel types breakdown and a full list of references from the report.

CONTENTS

ACKNOWLEDGEMENTS

This report has been funded and written by the industry think-do tank, Powerful Thinking, with significant support from Julie's Bicycle, Festival Republic, Kambe Events, and Plaster PR.

Many organisations have been involved in the journey that led to this report being written. Five years ago in Bristol a group of committed festivals and interested parties met to discuss energy management in the festival industry. They formed a group that became Powerful Thinking, which funds work to tackle shared issues in creating a sustainable festival industry and provides resources and advice to the industry in the spirit of Creative Commons.

Founding members include Julie's Bicycle, Kambe Events (Shambala Festival), Festival Republic, Bestival, Firefly Clean Energy, and the Association of Independent Festivals (AIF). More recently, A Greener Festival, the Production Services Association (PSA), the Association of Festival Organisers (AFO) and the National Outdoor Events Association (NOEA) have joined the group. De Montfort University and the Nationwide Catering Association (NCASS) have also contributed significantly along the way.

Special thanks go to Katie Maddison (formerly Bestival) and Laura Pando (Festival Republic) for their useful comments on this report, to Alison Tickell (CEO, Julie's Bicycle) for her mentorship and feedback, to other members of the Julie's Bicycle team; Chiara Badiali and Luke Ramsay, for their research, fact checking, data crunching and insights, to Livvy Drake, and Jenna Ansell (Kambe Events) and Ed Cook for their research support and contribution to content. Also to the industry consultation group set up for this report, who have already begun to get behind the vision: Tom Lawson at UK Festival Awards, Michelle Tayton at the Event Production Show, Tom Hall at Access All Areas magazine, Caroline Clift at Standout magazine, Johnny Lance at the Showman's Show and Greg Palmer at the ILMC; and finally to Bethan Riach for her copy-editing.

The lead author is Chris Johnson, co-founder and Chair of Powerful Thinking, co-founder and Operations Director at Shambala Festival, and the Associate for Festivals and Events at Julie's Bicycle.

FUNDERS

ARTS COUNCIL ENGLAND

Julie's Bicycle SUSTAINING CREATIVITY

kambe SUSTAINABLE EVENTS

Festival REPUBLIC.

Firefly CLEAN ENERGY

NCASS NATIONWIDE CATERERS ASSOCIATION

AFO THE ASSOCIATION OF FESTIVAL ORGANISERS

SUPPORTING ORGANISATIONS

THE SHOWMAN'S SHOW

PSA PRODUCTION SERVICES ASSOCIATION

12TH EDITION UK FESTIVAL AWARDS & CONFERENCE 2015

PLASTER creativecommunications

AIF

ACCESS ALL AREAS

A GREENER FESTIVAL

Sunday Best

ilmc

EXECUTIVE SUMMARY

Powerful Thinking was established in 2010 as a not-for-profit industry group focused on tackling energy-related issues at festivals. It has provided a forum to support research, explore issues and develop solutions, and has developed free-to-use resources which support festivals to reduce environmental impacts. The release of this report recognises a broader aspiration in the group to tackle other sustainability-related issues the industry shares. The group has representation from 273 festivals through membership organisations.

***The Show Must Go On* report was conceived as an industry response to the Paris climate change talks in 2015.**

The report aims to:

- **Outline the environmental impacts of the festival industry in an accessible format.**
- **Provide a robust basis for an industry-wide approach to reducing environmental impacts.**
- **Promote action.**

With a view to meeting the UK national target of a 50% reduction in green house gas emissions by 2025, the report brings together all known UK research and analyses the most comprehensive datasets available on the environmental impact of festivals. It explores individual precedents and considers industry-wide scenarios for reductions.

The report, based on 273 UK summer music festivals, finds that the industry is responsible for approximately:

- **20 kilotonnes of $C0_2e$ annually (onsite emissions)**
- **100 kilotonnes $C0_2e$ annually, including audience travel**
- **23,500 tonnes waste**
- **5 million litres of diesel consumption**

Also that:

- **Environmental responsibility is important to festivalgoers (according to audience survey data).**
- **5% of UK festivals are formally engaged with an environmental certification scheme.**
- **Typical recycling rates are likely to be lower than 32%.**
- **Energy is typically 65% of a festival's onsite $C0_2e$ footprint.**
- **Waste is typically 35% of a festival's onsite $C0_2e$ footprint.**
- **When including audience travel, onsite emissions are typically 20% of total festival-related emissions and audience travel up to 80%.**
- **There are significant blind-spots for data on contractor and artists travel.**

80% of festival organisers participating in the Industry Green Manifesto Survey (May 2015) stated that, 'they are committed to improving performance,' and that, 'the industry should work together towards shared standards.'

The top five priorities put forward by UK festival organisers, in order of priority are:

1. **Sustainable approaches to energy.**
2. **Standard approach to serve-ware and packaging.**
3. **Use of reusable cups.**
4. **A standard approach to waste management systems.**
5. **Sustainable travel policies.**

Through modelling carbon impact scenarios for different reduction measures, and exploring precedents, the report finds that the industry can realistically reduce its annual global greenhouse gas (GHG) emissions by 50% within 10 years through incremental changes to:

- **Reduce diesel consumption by 50%, through efficiency and alternatives.**
- **Achieve 55% recycling rates.**
- **Increase car occupancy and shared transport options.**

Fear of increased costs, lack of internal resources and the time to make changes, along with lack of expertise in sustainable approaches are the three most common reasons for festivals not adopting sustainable practices. When asked what support would help festivals organisers to make changes, the three areas of focus put forward were:

- **Training for the management team.**
- **Opportunities to share and exchange knowledge with other organisers.**
- **Case studies showing how practices have improved sustainability.**

Festival Vision:2025 aims to galvanise the existing commitment in the festival industry to act together on climate change by setting out clear aims and the beginnings of a roadmap for action.

[1] Carbon dioxide equivalent (CO2e) is a measure used to compare the global warming potential of different types of greenhouse gases (e.g. methane and nitrous oxide), using carbon dioxide (CO2) as a reference.

Festivals can reduce their environmental impacts and play a valuable and inspiring role in shaping a positive future. This will be made much easier, more cost-effective, and successful if we work together as an industry, and begin to resource an industry body which can support and guide this process through:

- **Research, development and coordination of free-to-use resources — including support and partnerships with existing industry initiatives.**
- **The provision of objective and qualified advice and training to the industry on a not-for-profit basis**
- **Annual industry reports to track progress**
- **Nurturing the collective aspiration.**

The Festival Vision:2025 Pledge aims to bring together those festivals who wish to take action. Please consider joining the growing number of committed festival organisers by signing the Festival Vision 2025 pledge at: www.powerful-thinking.org.uk/vision2025.

This report and vision initiative will be included in a briefing on international creative responses to climate change, submitted along with a letter signed by cultural leaders and artists, to Christiana Figeuras, Executive Secretary, United Nations Framework Convention on Climate Change (UNFCCC), at COP 21 in Paris 2015.

Summary of recommendations from the report:

The report sets out a number of key recommendations which will enable festivals to meet the challenge of achieving 50% reduction in emissions compared to 2014 by 2025, these are summarised as follows:

OVERALL

- **Measure impacts and progress through robust reporting.**
- **Achieve an 8% reduction in GHG emissions per year until 2020, and 5% per year until 2025.**
- **Engage audiences and stakeholders in positive action on climate change.**

WASTE

- **Reduce amount and number of types of waste**
- **Segregate materials onsite.**
- **Achieve a 50% recycling rate (of total materials present onsite).**
- **Accurate reporting on waste, supported by an industry-wide approach.**

TRAVEL

- **Measure contractor and artist travel.**
- **Increase car occupancy and use of public transport.**
- **Consider carbon balancing initiatives to recognise unavoidable emissions.**

ENERGY

- **Monitor energy as standard in contractual agreements.**
- **50% reduction in diesel consumption.**
- **Diversification toward renewable sources.**

FOOD

- **Source as locally as possible.**
- **Establish minimum standards based on credible certifications.**
- **Reduce food waste.**
- **Reduce meat and dairy consumption.**

OTHER

- **Balance unavoidable emissions through credible carbon reduction initiatives.**
- **Work with the supply chain to share the journey toward reducing impacts.**
- **Reduce impacts from offices**

FOREWORD

“AS FESTIVAL ORGANISERS WE KNOW HOW TO CREATE UNFORGETTABLE EXPERIENCES AND HOW TO INSPIRE PEOPLE. WE KNOW HOW TO GET THINGS DONE IN CHALLENGING CIRCUMSTANCES, AND WE ARE ACCOMPLISHED AT COMMUNICATING WITH AUDIENCES. THE EARTH IS LITERALLY ON THE VERGE OF ECOLOGICAL COLLAPSE, AND IT IS WELL WITHIN OUR REACH TO TURN OUR INDUSTRY INTO AN EXEMPLAR OF ENVIRONMENTAL RESPONSIBILITY. IF WE CAN CREATE SPACE IN OUR BUSY LIVES, AND PULL TOGETHER AS AN INDUSTRY, WE CAN MAKE A VITAL AND SIGNIFICANT CONTRIBUTION TO A FUTURE WE WANT OUR CHILDREN TO INHERIT. FESTIVAL ORGANISERS, WORKING WITH THEIR MANY AND DIVERSE PARTNERS, FROM CONCESSIONS TO THE SUPPLY CHAIN, CONTRACTORS, CHARITIES AND BRANDS, CAN PROVIDE LEADERSHIP FOR WHAT IS PERHAPS THE MOST IMPORTANT CONVERSATION OF OUR TIME. THE SHOW MUST GO ON...”

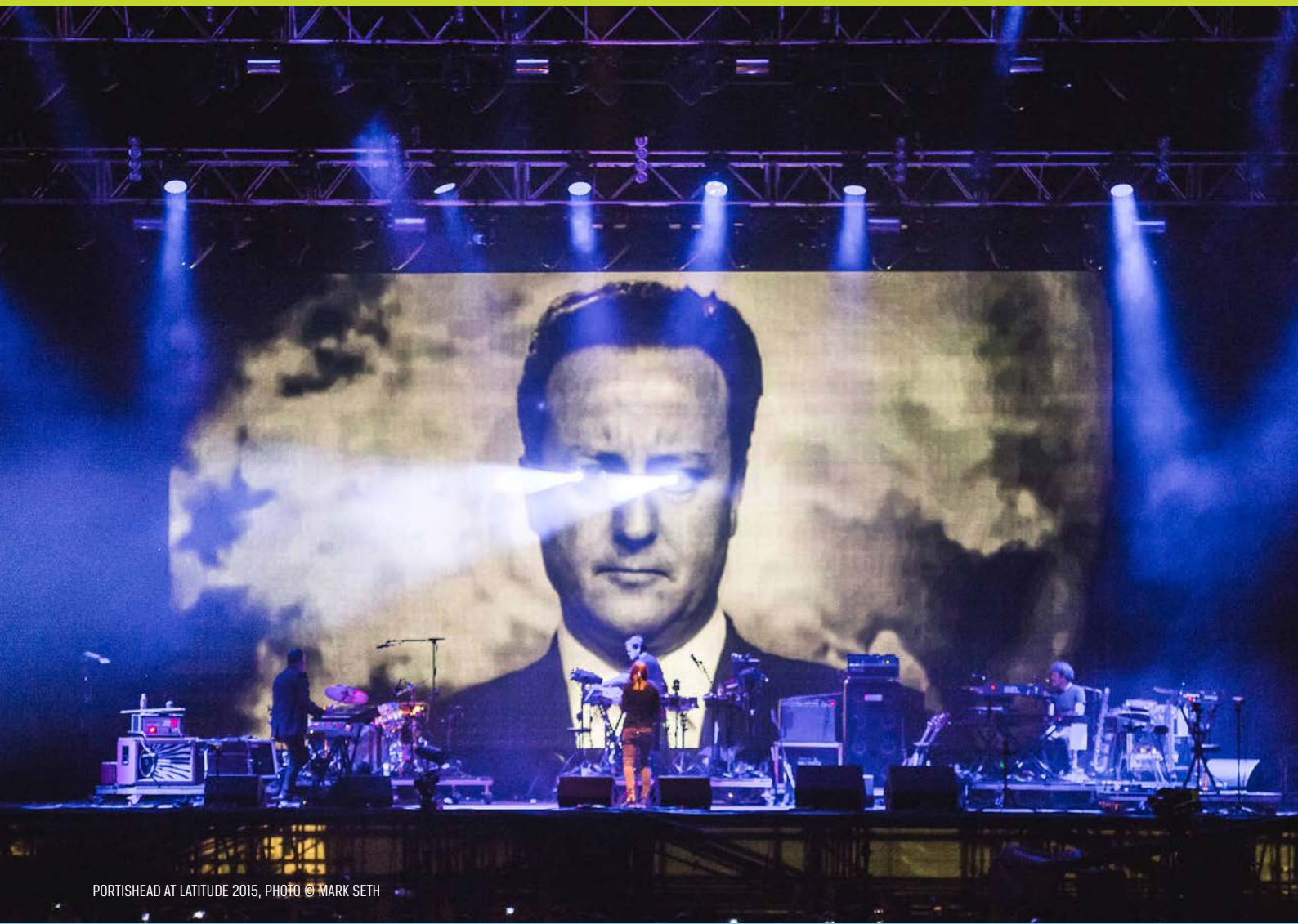
Chris Johnson, Chair, Powerful Thinking

INTRODUCTION

There are now hundreds of camping-based summer music festivals in the UK, with an audience of more than 3 million people annually.[2]

Festivals are places of celebration, community, inspiration and innovation. They play an increasingly prominent role in the cultural landscape of the UK. The modern British music festival emerged in the late 1960s, with firm roots in the countercultures of the time. Brecon Jazz, Reading, Glastonbury and the Isle of Wight Festival (along with Woodstock in the USA) all began in the late 1960s and early 1970s and brought with them a very visible expression of narratives which challenged mainstream politics and ways of life. The last fifty years of British festivals, despite significant commercialisation, have continued to provide a valuable space in society for new genres of music and art forms, and for contemporary political and environmental issues to be expressed, explored and shared.

These festivals are offering increasingly diverse creative experiences to their audiences. The power of the arts in general to connect with people is profound, reflecting fears and hopes, exploring difficult societal narratives and providing new insights and understanding. Many festivals already explore environmental issues through their programmed content, initiatives and partnerships, but there is a significant opportunity for festivals to contribute more decisively to the climate change conversation and the movement toward a sustainable future.



PORTISHEAD AT LATITUDE 2015, PHOTO © MARK SETH

[2] Music Tourism: Wish You Were Here (UK Music: 2013), identifies 279 annual music festivals taking place in the UK, and reports an attendance of 2.79 million in 2012 — lower than usual due to the Olympics. Email correspondence with UK Music updated the attendance figure for 2013 to 3.17 million. Some reports suggest there are as many as 500 or even 800 festivals, but we have decided to adopt official figures for this report.

FESTIVALS ARE UNIQUELY PLACED TO TAKE PART IN THE CLIMATE CHANGE CONVERSATION

Festivals intrinsically support, create and exhibit cutting edge ideas and creativity; they have captive and 'switched-on' audiences who are willing to immerse themselves in the festival experience and buy into the brands and ethos of the events they attend. Many events attract younger demographics and so can reach the decision makers of tomorrow; and festivals have the power to harness media exposure.

The festival sector is yet to develop a collective commitment or adopt a multi-lateral framework to approach sustainability. It is this that The Show Must Go On report seeks to address by articulating a collective vision from the industry based on common aspirations, identifying the practical and realistic mechanisms available to us to reduce our impacts, exploring how we share this journey and how we measure our success.

It is important to acknowledge that we are in the business of creating enjoyable, inspiring and often escapist or hedonistic experiences, and it is not the intention of this report to suggest that all festivals primarily focus on environmental issues in their relationship with audiences. However, we can choose to manage our businesses more responsibly and take an active role in one of the most important conversations of our time, whatever our starting point.

DEFINITION OF 'FESTIVAL INDUSTRY' AND 'FESTIVAL' IN THE SHOW MUST GO ON REPORT

This report considers the environmental impact of the festival industry based on a study of UK summer music festivals; it refers to 'festivals' and the 'festival industry' in the specific context of UK summer music festivals. For the purpose of this report the definition of 'UK summer music festival' is a multi-day ticketed event that is primarily music based and held in an outdoor green space. It does not include events that are free to access, urban arts events that are not primarily music based, sporting events, events which can be considered a 'concert' (i.e. a one-off event, which has sold tickets specifically on the basis of a single headline act) or any other type of event outside of the definition provided.

"Its not too late for the festival industry to change our ways and help slow climate change. The Show Must Go On report has the potential to bring the industry together around a clear vision to tackle climate change in a practical way. As a founding member of Powerful Thinking, we are excited to see that a real shift is taking root in the industry."

ROB DA BANK, BESTIVAL

"Making better use of what we already have by cutting out waste, whether it's fuel, food, packaging or consumption, ought to be a no-brainer as it will not only save money but it could save our planet. Let's get that estimated festival audience of 3 million onside and on message."

BOB WILSON, HEAD OF EVENTS, GREENPEACE UK

WHAT THE SCIENCE IS SAYING

"In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans." [3]

Intergovernmental Panel on Climate Change (IPCC)

Climate change is unequivocally occurring and evidence for human influence on the climate system is clear.[4] Due to human activities GHG emissions have increased by 70% between 1970 and 2004. GHGs trap heat in the atmosphere, resulting in a warming of the atmosphere and a destabilisation of our climate systems, rising sea levels, ocean acidification, heatwaves, droughts and more extreme weather.

We have quite literally changed the chemical composition of our atmosphere and dramatically changed the nature of the land and the oceans.

Record Breaking Weather

After starting the year facing a severe drought, the UK's summer of 2012 turned out to be the wettest on record in a century.[5] 2014 has been declared the hottest year on record (globally).[6] 2014 was also the UK's warmest year since records began in 1910, and the fourth wettest, causing flooding in many parts of the country.[7]

These weather conditions directly affect the outdoor events industry in a variety of ways; they impact upon the audience experience, incur extra costs associated with more weather-proof infrastructure and contingencies, and they increase insurance costs and travel disruptions.

3 IPCC, Climate Change 2014: Impacts, Adaptation and Vulnerability – Working Group II Contribution to Assessment Report 5 (IPCC: 2014). Online at http://www.ipcc-wg2.gov/AR5/
4 IPCC, Climate Change 2013: The Physical Science Basis – Working Group I Contribution to Assessment Report 5, (IPCC: 2013). Online at http://www.ipcc.ch/report/ar5/wg1/
5 Met Office, Online at http://www.metoffice.gov.uk/climate/uk/2012/summer.html and http://www.metoffice.gov.uk/news/releases/archive/2012/second-wettest-summer
6 NASA, 'NASA, NOAA Find 2014 Warmest Year in Modern Record' (NASA: 16 Jan 2015). Online at http://www.nasa.gov/press/2015/january/nasa-determines-2014-warmest-year-in-modern-record/
7 UK Met Office, '2014 confirmed as UK's warmest year on record' (UK Met Office: 15 Jan 2015). Online at http://www.metoffice.gov.uk/news/releases/archive/2015/Record-UK-temps-2014

The Intergovernmental Panel on Climate Change (IPCC) was set up to provide a comprehensive summary of the scientific data on climate change and what we know about our world's climate systems to help inform policy decisions. Its Assessment Reports have hundreds of authors, compile the work of thousands of scientists, and are perhaps the most audited scientific documents in history.

The recent Fifth Assessment Report, published in 2014, makes it clear that if we are going to keep global warming below the internationally agreed threshold of 2°C, thought to be the upper limit for minimizing the most catastrophic consequences of irreversible climate change, we will need to reach virtually zero emissions of CO_2 and other GHGs by the end of this century.[8]

The Fifth Assessment Report for the first time also included a carbon budget for the 2°C target for governments, of which over two-thirds has already been used up. At current rates of use the world would burn through the rest in less than 30 years. For the best chance of avoiding severe levels of warming, we will need to peak emissions very soon, rapidly phase down fossil fuels, and improve energy efficiency.

The UK Climate Change Act (2008) commits the UK government to reduce UK GHG emissions by 50% by 2025 and 80% by 2050 compared to a 1990 baseline. Achieving this will require ambitious collaboration between the Government, business, and the public.

We have chosen to concentrate the narrative of this report on GHG emissions, due to their central role in climate change, and because we can consistently use GHGs as a universal unit of measurement for most types of impact. However, we recognise that the environmental impacts of our industry are varied in their type, manifestation and implications.

Safe levels of atmospheric carbon dioxide

The generally accepted 'safe' level of CO_2 in the atmosphere that we should be aiming towards is 350 ppm (parts per million). Pre-industrial levels of CO_2 in the atmosphere were 280 ppm. In 2013, they briefly breached 400 ppm in some parts of the world for the first time in millions of years. As a point of comparison *Homo sapiens* i.e. modern humans, have only been around for roughly 200,000 years. We are currently increasing the concentration by about 2 ppm annually, and in March 2015 levels were over 400 ppm for a month globally for the first time since records began.[9] We are the first human beings to breathe air containing this much CO_2. Even if we cut emissions drastically, the concentration of CO_2 in the atmosphere won't drop immediately: it will take a century or more for natural processes to reduce it.

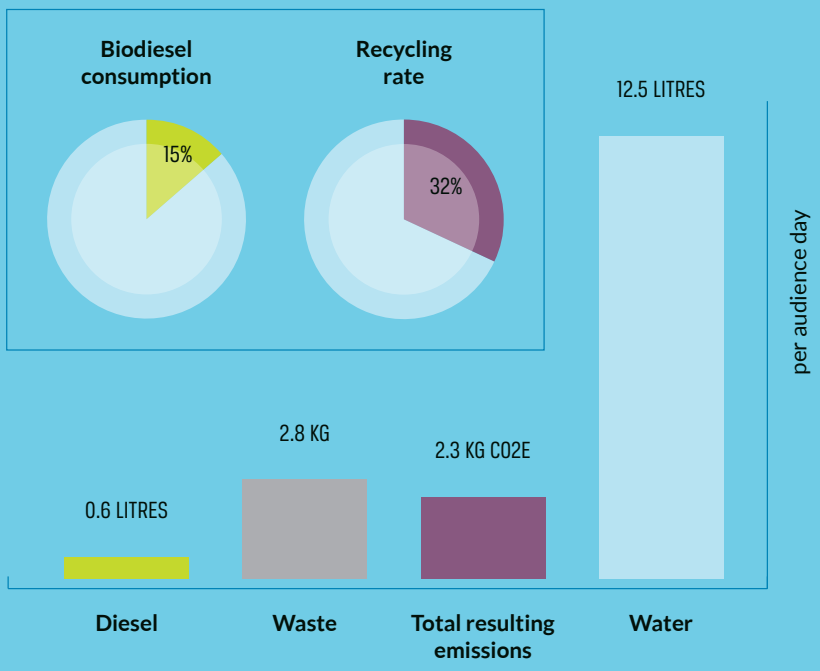
[8] IPCC, Climate Change 2014: Synthesis Report – Contribution of Working Groups I, II and III to Assessment Report 5 (IPCC: 2014). Online at http://www.ipcc.ch/report/ar5/syr/
[9] Adam Vaughan, 'Global carbon dioxide levels break 400 ppm milestone' (The Guardian: 6 May 2015). Online at http://www.theguardian.com/environment/2015/may/06/global-carbon-dioxide-levels-break-400ppm-milestone

AN OVERVIEW OF THE ENVIRONMENTAL IMPACTS OF UK FESTIVALS

All festivals have ecological footprints; they consume energy, water, food and materials, and they produce waste and carbon emissions. Julie's Bicycle have recently published emissions benchmarks for UK greenfield camping festivals and have provided the industry with a first glimpse of quantitative information about its impacts. These provide a great starting point to build on our understanding of individual festival and collective industry impacts.

THE UK FESTIVAL INDUSTRY IS RESPONSIBLE FOR 20,000 TONNES OF ONSITE EMISSIONS (CO_2e) PER YEAR

THE JULIE'S BICYCLE BENCHMARKS, NOVEMBER 2014

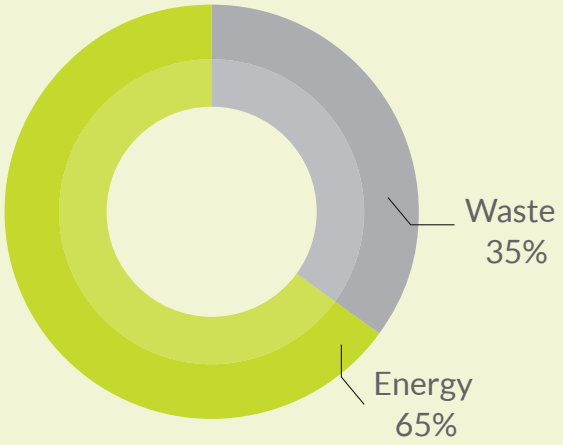


These benchmarks have been derived from the data of 13 large (>20,000) UK greenfield camping festivals spanning 2011, 2012 and 2013 (one festival was included with <20,000 attendees as its data aligned well with the benchmark median). In each case the most recent available year of verified data was selected.

It is the first industry dataset on recycling rates and biodiesel consumption. Diesel consumption includes both red diesel and biodiesel. Biodiesel is zero-rated for carbon emissions in the analysis under the assumption that it is reprocessed waste vegetable oil.

PLEASE NOTE that these benchmarks are likely to indicate a performance that is better than the average festival, as the data is currently drawn from events that are already actively addressing environmental sustainability.

AVERAGE ONSITE CARBON FOOTPRINT BREAKDOWN (CO_2e)



Energy Waste Water

The current benchmark for CO_2e per audience day (per person per day on site) at large UK festivals with camping (events with over 20,000 attendees) is 2.3 kg.[10] This includes direct impacts from diesel use, water use, and waste – but does not include indirect impacts such as transport or crew, artist, and audience travel. CO_2e is an intangible concept for many, but nonetheless it is the accepted global unit of measurement and comparison for climate change related impacts. Our challenge is to measure the impacts of our industry robustly and find ways to communicate this and make it meaningful.

With a total annual estimated audience of 3.17 million festivalgoers, we can extrapolate the emissions of the UK festival industry, excluding travel, at an approximate 19,778 tonnes or 19.78 kilotonnes annually.[11] If audience travel is included, this figure rises to 97.93 kilotonnes.[12]

We must recognise that the breakdown of onsite emissions can vary considerably between events. For some festival producers, measuring the carbon footprint of their event is a way to prioritise new measures in an effort to reduce impacts and to measure year-on-year progress.

It is important to note that the above breakdown does not consider supply chain impacts, such as off-site contractor travel, food and drink production, or embodied energy in the materials used and consumed onsite. How to accurately measure these impacts, and where the responsibility for these emissions lies is complex and beyond the scope of this report. It's also worth noting that while water does not have a high carbon impact, overconsumption of limited freshwater resources poses other environmental challenges.

Who is responsible for the carbon emissions from festivals?

In virtually all carbon accounting methodologies and approaches, businesses are considered responsible for the emissions directly attributable to their operations. This includes energy, waste, water and transport for staff and infrastructure deliveries. In addition there are impacts that are outside an organisation's direct control but which can be influenced e.g. supply chain impacts and audience travel.

The limited research that exists suggests that festival-goers believe that festival organiser's are responsible for the environmental impacts of their event. In the A Greener Festival audience survey conducted by Buck-inghamshire New University, 90% of the festivalgoers in 2012 who responded believed that festival organisers should be responsible for minimising the environmental impact of festivals, 80% believed festivalgoers should also be responsible, and only 30% thought local authori-ties carried any responsibility.[13]

[10] *Creative Industry Green Tool Benchmarks: Festivals 3rd edition* (Julie's Bicycle: 2014). Online at http://www.juliesbicycle.com/services/ig-tools/julies-bicycle-benchmarks

[11] This figure was derived using the Julie's Bicycle Benchmark of 2.3 kg CO_2e per audience day, annual festival attendance of 3.17 million, and an average festival length of 2.7 days also from *Music Tourism: Wish You Were Here* (UK Music: 2013). For the purposes of this report, we have chosen to use the attendance figure for 2013 as supplied by UK Music in email correspondence and used in their report, *Measuring Music* (UK Music: 2014). Their methodology, based on ticket sale figures, is explained in more detail in *Music Tourism: Wish You Were Here* (UK Music, 2013), which reported an attendance of 2.79 million in 2012 – lower than usual due to the Olympics. It should be noted that their event definition slightly differs from what we would consider the key focus for this report (multi-day music festivals featuring camping) in that they have included some non-camping events such as the Proms, but excluded some camping outdoor events such as WOMAD. However, 3.17 million is the best available and most reliable figure and is also endorsed by the industry, and any attendance estimates will always contain some margin of error, so we feel confident in using it for the basis of this report.

[12] This figure was derived using Julie's Bicycle audience travel default averages for greenfield festivals (average return distances in parentheses) of 70% car (225 miles), 15% coach (300 miles), 13% train (225 miles), and 1% domestic flights (1800 miles). We also consulted surveys undertaken by Virtual Festival and A Greener Festival, which suggested a similar split of transport modes.

[13] A Greener Festival, *What Fans Want: Green Events – And Their Fave Band!* (A Greener Festival/Buckinghamshire New University: 2013). Online at *http://www.agreenerfestival.com/2013/01/what-fans-want-green-events-and-their-fave-band/*

THE CURRENT STATE OF PLAY IN THE UK FESTIVAL INDUSTRY

FESTIVALS

Only around 5% of UK summer festivals hold formal environmental accreditation or green awards.[14] However, many more events and promoters are engaging with environmental sustainability in their operations through less formal channels.

According to an International Live Music Conference (ILMC) 2013 survey of eighty-two festival organisers, it is now 'commonplace for festival organisers to factor in measures to combat environmental consequences when planning their events'.[15]

Overall information on specific actions is patchy due to the absence of an industry-wide reporting mechanism.

In May 2015 the AIF, AFO and Kambe Events conducted a survey asking UK festival organisers about their environmental practices, priorities and aspirations.[16] Forty-seven festivals participated, representing almost 17% of UK summer music festivals and including a wide variety of event types, sizes and locations.[17] Four out of five organisers said that they had an environmental policy in place. The survey also asked what other practices events had in place, with the results shown in the box below.

Whilst it should be recognised that event organisers already engaged with environmental practices are more likely to respond to a survey of this nature, and as a result this isn't likely to reflect practice across the entire industry, it does provide an indication of the areas that festival organisers are focusing on.

The most common practices, perhaps unsurprisingly, are tackling waste, audience travel and energy use. Less than half of the festivals surveyed have focused on food sourcing or trader engagement, gaining certification of any kind, or measuring their carbon impacts.

78%
SAY THEY HAVE AN ENVIRONMENTAL POLICY

THE GREEN ACTIONS FESTIVALS ARE TAKING

Percentage of participants by type of measure

[14] This percentage assumes a total of 279 known UK summer music festivals. In 2015, there are 13 UK festivals currently certified through Julie's Bicycle Industry Green Certification, 12 UK festivals accredited with an A Greener Festival Award, and 10 festivals engaged with the Festival Energy Revolution initiative.
[15] ILMC, *European Festival Report 2013* (IQ Magazine, Issue 50: Nov 2013). Online at http://issuu.com/gregiq/docs/iq50
[16] *The Industry Green Manifesto Survey* (Kambe Events in association with the AIF and AFO: May 2015).
[17] Based on 279 UK summer music festivals.

CERTIFICATION SCHEMES, AWARDS AND INITIATIVES

It is notable that many of the events and festivals participating in certification schemes, awards, and other public initiatives do so across multiple initiatives — this implys that there is a core group of promoters who are committed to addressing their environmental impacts and to integrating sustainability into their operations.

In 2014, nine UK festivals undertook the A Greener Festival assessment and five of them were awarded Julie's Bicycle Creative Industry Green (IG) Certification. [18]

The Powerful Thinking initiative (the UK festival industry's think-do tank for sustainable energy) includes among its steering group members three major festival promoters representing six UK festivals, and the membership organisations; AIF and AFO, who collectively represent 257 events. [19]

Twenty-one festival-related organisations and suppliers, including six UK festivals, have contributed to the A Greener Festival 'Festival Wood' project — a wild forest regeneration initiative.[20]

There are no official figures for the number of events that have worked with the 'Love Your Tent' initiative, which aims to reduce the amount of tents left at festivals, although at least ten festivals have been involved.[21]

Most recently, ten festivals launched the Energy Revolution initiative, a project tackling the impact of audience, artist and supplier travel by engaging festivalgoers, artists and companies in the issue and offering a point of sale donation to balance emissions.[22]

The London 2012 Games significantly raised the profile of event sustainability nationally and internationally, leaving a legacy of information online, and inspiring many event management companies to engage with the environmental management system ISO20121. Whilst we cannot determine the impact of these wider developments on festival industry engagement with any accuracy — there are no reliable figures for the number of festivals formally ISO20121 certified, although it is likely to be negligible — it is anecdotally recognised to have helped to make sustainability a more mainstream concept for the events industry, in particular by engaging the supply chain.

THE SUPPLY CHAIN

The wider supply chain has begun to embrace sustainability, with increasing numbers of event industry companies in the UK developing sustainable products and services. This is noticeable at trade shows, with both the Showman's Show and the Event Production Show reporting increases in exhibitors showcasing green products or services.

The move towards certified supplier sustainability is also driven by the demands of the corporate events industry. As increasing numbers of corporate event organisers commit to formally reducing their environmental footprint, more suppliers are acquiring the ISO 14001 environmental management certification to ensure they can meet their client's needs. Just over 50% of festival organisers who responded to the Green Manifesto Survey said that they had an ethical procurement policy in place, which may be influencing the supply chain in the same way.

[18] The nine A Greener Festival awarded festivals were: Cambridge Folk Festival, Shambala Festival, Glastonbury Festival, Wood Festival, End of the Road, Greenbelt, Nozstock: the Hidden Valley, T in the Park and also BBC Radio 2 and Proms in Hyde Park. The five Creative Industry Green certified were: Latitude Festival, Reading Festival, Leeds Festival, Shambala Festival and BBC Radio 2 in Hyde Park.
[19] The six UK festivals directly represented on the steering group are Bestival, Camp Bestival, Latitude, Reading, Leeds, Shambala. Details online at http://www.powerful-thinking.org.uk.
[20] The full list is available online at http://treesforlife.org.uk/plant-trees/grove/6419/
[21] Isle of Wight Festival, Kendal Calling, Rewind Festival, Nozstock: the Hidden Valley, Reading Festival, Leeds Festival, Latitude Festival, V Festival, Truck Festival, YNot Festival.
[22] Bestival, Boomtown, Kendal Calling, Starry Skies, Love Saves the Day, The Secret Garden Party, Standon Calling, Wilderness, Shambala, and Camp Bestival.

IMPACTS AND SOLUTIONS

Impacts and Solutions: Energy

4.96 MILLION LITRES

TOTAL ANNUAL FUEL CONSUMPTION FOR UK MUSIC FESTIVALS [23]

0.6 LITRES OF DIESEL PER PERSON PER DAY

AVERAGE FOR UK MUSIC FESTIVALS

The most recent IPCC report states that in order to keep below 2°C of warming we will need to drastically decarbonize our energy supply, moving away from fossil fuels in favour of alternatives, reducing energy demand, and adopting efficiency measures.[24]

A 2011 study estimated that only 3% of UK festival energy demand was being met through waste vegetable oil biodiesel, and less than 1% of overall energy supply was being met through other temporary renewable energy technologies (solar and wind).[25] Since then, demand for more sustainable solutions has been steadily growing, with companies that offer renewable energy solutions reporting significant growth in the past 3 years.[26]

We have experienced a tangible shift in the nature of the industry conversation around approaches to power in the festival industry: in 2015 65% of festival organisers said that they are tackling energy use as one of their top three environmental priorities. [27]

The benchmark for fuel consumption at festivals, recently published by Julie's Bicycle, is 0.6 litres per person per day, or per 'audience day'. Among the 13 medium to large events (with a combined audience of 1.3 million) included in the analysis for this benchmark, over 50% of the events were using some waste vegetable oil (WVO) biodiesel with a total consumption of 15% WVO biodiesel and 85% diesel. Five events were using 'some' renewable energy. This increase from an estimated figure of 3% WVO biodiesel in 2011 is likely to represent a wider but perhaps slower trend in the industry, as the benchmark data is derived from festivals actively engaged with measuring and reducing their environmental impact so it is probable that they use a larger percentage of WVO biodiesel than average.

AT BESTIVAL ALL OF THE CAMPSITES ARE RUN ON WASTE VEGETABLE OIL BIOFUEL. FOOD, TENTS AND CAMPING EQUIPMENT AND EVEN LEFT OVER FANCY DRESS ARE COLLECTED AND DIRECTED TO THOSE IN NEED. COOKING OIL BECOMES BIO FUEL, ALL SCENERY IS REUSED AND RE-PURPOSED AND THEY ARE WORKING TO INCREASE RENEWABLE ENERGY, MEASURE AND ANALYSE RESULTS.

[23] This figure has been extrapolated using the Julie's Bicycle Benchmark of 0.58 L per audience day, annual festival attendance of 3.17 million, and an average festival length of 2.7 days from Music Tourism: Wish You Were Here (UK Music, 2013).
[24] IPCC, Climate Change 2014: Synthesis Report – Contribution of Working Groups I, II and III to Assessment Report 5 (IPCC:, 2014). Online at http://www.ipcc.ch/report/ar5/syr/
[25] Joel Baker (MSc Climate Change and Policy), What are the barriers to operationalizing and expanding temporary renewable energy capacity at UK music festivals? (Sussex University: 2011). Please note that this study used a more generous definition of music events, counting 500 UK festivals (rather than the 279 counted b UK Music in Music Tourism: Wish You Were Here (2013). This discrepancy is likely due to differing definitions of 'festival' e.g. including local authority events and fairs.
[26] Source: Reported growth by Midas UK Ltd and Firefly Clean Energy, Jan 2015.
[27] 65% of respondents in the Industry Green Manifesto Survey (Kambe Events et al: May 2015) stated that they were tackling energy use as one of their top three priorities.

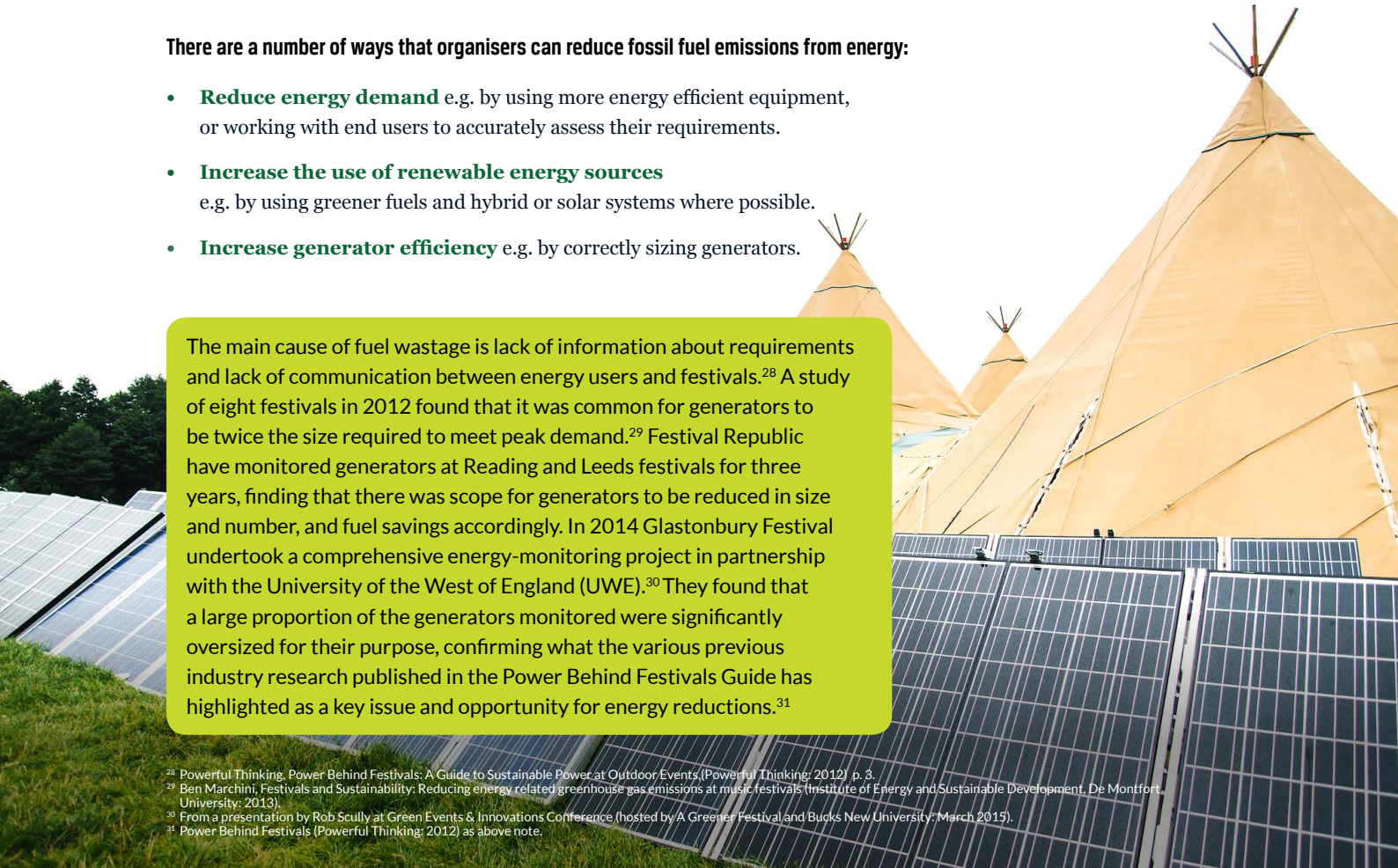
OVERVIEW OF POTENTIAL FOR REDUCTIONS

OVERVIEW OF THE IMPACT OF FOSSIL FUEL USE ON UK FESTIVAL CARBON FOOTPRINTS AND THE FEASIBILITY OF REDUCTION MEASURES	
Typical percentage that energy use contributes to the onsite carbon footprint of a festival	65%
Total amount CO_2e produced by festivals annually due to fossil fuel use	12,919 tonnes
Total estimated fuel used by festivals annually	4,964,220 litres
Key opportunities to reduce energy use and associated impacts	• Reduce energy demand. • More efficient system design. • Use of alternatives to fossil fuels e.g. solar, wind and kinetic power, and sustainable biofuels. • Use of new energy technology e.g. hybrid generators, batteries, hydrogen fuel cells and real-time monitoring.
Summary of the feasibility of opportunities to reduce energy use	• High potential for reductions proven in various event contexts. • Strong and growing market in new solutions both in the UK and in other countries. • Possibility of stronger incentives both financial and through policy as in the future governments will focus on energy to meet Climate Change Act, EU, and UN targets on carbon reductions.

There are a number of ways that organisers can reduce fossil fuel emissions from energy:

- **Reduce energy demand** e.g. by using more energy efficient equipment, or working with end users to accurately assess their requirements.
- **Increase the use of renewable energy sources** e.g. by using greener fuels and hybrid or solar systems where possible.
- **Increase generator efficiency** e.g. by correctly sizing generators.

The main cause of fuel wastage is lack of information about requirements and lack of communication between energy users and festivals.[28] A study of eight festivals in 2012 found that it was common for generators to be twice the size required to meet peak demand.[29] Festival Republic have monitored generators at Reading and Leeds festivals for three years, finding that there was scope for generators to be reduced in size and number, and fuel savings accordingly. In 2014 Glastonbury Festival undertook a comprehensive energy-monitoring project in partnership with the University of the West of England (UWE).[30] They found that a large proportion of the generators monitored were significantly oversized for their purpose, confirming what the various previous industry research published in the Power Behind Festivals Guide has highlighted as a key issue and opportunity for energy reductions.[31]



[28] Powerful Thinking, Power Behind Festivals: A Guide to Sustainable Power at Outdoor Events (Powerful Thinking: 2012) p. 3.
[29] Ben Marchini, Festivals and Sustainability: Reducing energy related greenhouse gas emissions at music festivals (Institute of Energy and Sustainable Development, De Montfort University: 2013).
[30] From a presentation by Rob Scully at Green Events & Innovations Conference (hosted by A Greener Festival and Bucks New University: March 2015).
[31] Power Behind Festivals (Powerful Thinking: 2012) as above note.

PRECEDENTS

Between 2010 and 2014 Shambala Festival (a UK based event, capacity 15,000) made the transition from 100% red diesel generators to 100% renewable power onsite, with no increases in relative costs.[32] This was achieved by reducing energy demand, introducing hybrid waste vegetable oil (WVO), solar power systems and generator efficiency measures. These steps have contributed to Shambala reducing its carbon footprint by 81% in five years.[33] Extrema Outdoors (Netherlands, capacity 30,000), achieved a reduction in energy demand of 62% over 4 years between 2012 and 2015. They also reduced the number of generators by 32% and the total running hours by 59%.

Croissant Neuf Summer party (UK, capacity 5,000) was powered by 100% solar power, with the main stage PA requiring less power than an average domestic kettle. The Showmans Show, whilst not a 'summer festival', has reduced their diesel consumption by 50% in one year by gaining accurate energy requirements and considering the system design in detail. Boomtown Fair (UK, capacity 50,000), has made a contractual agreement with their energy supplier to reduce diesel consumption by 10% annually for three years, monitor all generators and provide detailed reports.

SCENARIOS FOR REDUCING IMPACTS

SCENARIOS FOR THE REDUCTION OF DIESEL USE ON TOTAL UK FESTIVAL CO_2e EMISSIONS

	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	10% reduction in diesel		30% reduction in diesel		50% reduction in diesel		100% renewable	
	Unit	CO_2e (t)	Unit	CO_2e (t)	Unit	CO_2e(t)	Unit	CO_2e (t)
Diesel (L)	4,467,798	11,627	3,474,954	9,043	2,482,110	6,459	0	0
Waste (t)	23,537	6,822	23,537	6,822	23,537	6,822	23,537	6,822
Water (m3)	107,330	37	107,330	37	107,330	37	107,330	37
Total CO_2e (t)	18,486		15,902		13,318		6,859	
Reduction in industry emissions	7%		20%		33%		65%	

SUMMARY

For the entire industry to transition to 100% renewable power (scenario 4) within the next decade may be unrealistic, although it has to be noted that there are precedents for this for small to medium-sized festivals (in the UK Shambala Festival and Croissant Nuef Summer Party and in Portugal Boom Festival have achieved this scenario).

A more pragmatic stance would be to align a strategy with industry research, which strongly suggests most events can achieve a 30% reduction in fuel use through better planning, system design and reduction of energy demand.[34] Combined with the rapid advancement of hybrid technology and the growth in more sustainable fuels, a 50% reduction in red diesel use (scenario 3) seems achievable.

This would deliver a 33% reduction in overall festival industry emissions; two thirds of the total that needs to be realised to meet the national government target of halving overall emissions by 2025.

RECOMMENDATIONS

- 50% REDUCTION IN DIESEL CONSUMPTION
- MONITOR ENERGY AS STANDARD IN CONTRACTUAL AGREEMENTS
- DIVERSIFICATION TOWARD RENEWABLE SOURCES

[32] Source: Presentation by Shambala Festival at ADE Green Conference: 2014.
[33] Details online at http://www.shambalafestival.org/essential-info/sustainability/.
[34] Ben Marchini, Paul Fleming and Christopher Maughan, Reducing Electricity related Greenhouse Gas Emissions at Music Festivals (De Montfort University, Leicester: 2012)

Impacts and Solutions: Waste

The subject of waste is a strong symbol of environmentally impactful human behaviour and it highlights intrinsic weaknesses in our ability to develop efficient and productive systems to deal with 'stuff'.

In the UK, household recycling saves about 18 million tonnes of carbon emissions a year, which is the equivalent of taking approximately 5 million cars off the road.[35]

Extracting new materials requires more energy, water and other resources than recycling existing materials (although the best thing to do is still to avoid using materials and creating waste altogether where possible).

Sending waste materials to landfill has multiple impacts. When materials are buried, we miss an opportunity to recover the valuable energy that was used to extract them from the earth, transport and refine them. In the case of combustible and biodegradable materials we also miss the opportunity to recover the (embodied) energy that is locked inside the materials themselves.

23,500
TONNES OF WASTE
IS CREATED AT UK MUSIC FESTIVALS ANNUALLY

2.8KG
WASTE
PER PERSON PER DAY

PUBLIC RECYCLING EXCHANGE AT SHAMBALA FESTIVAL 2014

[35] Waste and Resources Action Programme (WRAP), Recycle Now. Online at http://www.recyclenow.com/recycle/why-recycle.
[36] A.A. Siesse, Hazardous and Industrial Waste Proceedings, 27th Mid-Atlantic Conference, ed. A.K. Sengupta, (Technomic, Pennsylvania, USA: 1995) p.100-08.
[37] In 2013, only 16% of the UK's 47 municipal waste incinerators had the capability to directly recover heat for use in hot water or for heating buildings. Incinerators are often located away from properties that may benefit from surplus heat, due to their reputation for polluting the air.
[38] There are only two municipal waste incinerators in the UK which meet the efficiency threshold required to classify them as 'recovery' operations meaning that the remaining 45 facilities are classified as having the same environmental impact as landfill. Source online at http://www.ipcc-nggip.iges.or.jp/public/gp/bgp/5_3_Waste_Incineration.pdf.
[39] This figure is calculated using the Julie's Bicycle Benchmark of 2.8 kg of waste per audience day, and annual festival attendance of 3.17 million / average festival length of 2.7 days from UK Music's Music Tourism: Wish You Were Here (2013)
[40] WasteDataFlow statistics. Online at http://www.wastedataflow.org.
[41] Based on outdoor music festivals serviced by Greenbox Events and previously Network Recycling UK from 2005-2015.

Impacts and Solutions: Waste

Biodegradable ('organic') materials cause the biggest problem in landfill sites because when they break down they produce methane, a potent greenhouse gas (20 times more harmful than C02). All modern landfill sites are required to have methane capture systems that often divert the gas to engines for generating electricity. However, approximately 25% of the gas escapes (fugitive emissions) into the atmosphere, meaning landfills account for over 40% of the UK's methane emissions. Leachate from these organic wastes, together with various toxic chemicals, also escapes from landfill sites into the land and watercourses.[36]

One alternative to landfill is to send waste to an incinerator and generate a small amount of electricity from the heat.[37] This solution helps to promote the 'zero waste to landfill' message but in reality offers only a marginally reduced environmental impact because much of the embodied energy in raw materials is still lost, and approximately 50–67% of the combusted material is comprised of plastic which is made from fossil fuel chemicals.[38] Considering the above facts it's clear that reusing or recycling materials is immeasurably better than incineration or landfill.

At the end of 2014 Julie's Bicycle was, for the first time, able to present data on waste and recycling rates at festivals. They estimated that the amount of waste produced per person per day onsite was around 2.8 kg, which scales up to around 23,500 tonnes of waste generated by the UK festival industry each year.[39] The events that reported data achieved average recycling rates of 32%. To put this in context, national household recycling rates in the UK are currently around 47% and the UK has a statutory obligation under the Waste Framework Directive (2008) to recycle or reuse 55% of household waste by 2020.[40]

Greenbox Events, one of the UK's most diligent sustainable event waste management contractors, report average recycling rates for festivals of 24%. Many large festivals provide little or no recycling facilities at all.[41] Furthermore, misreporting waste figures is common in the industry — due to lack of understanding about how to report figures, the absence of an industry standard and a willingness to please clients with good figures — making it difficult to establish how much waste is actually being recycled at UK events.

RECYCLING WAITING FOR COLLECTION AT LATITUDE 2015

Reporting accurate waste figures

Reporting on waste is problematic due to the complexity of the UK's waste treatment systems and confusion over how to describe what has happened to waste after it leaves the site.

The European Waste Hierarchy provides a framework that sets out very specific criteria for how to describe the way that waste has been treated. It also describes the most environmentally beneficial way of treating waste so that the least damaging options can be chosen.

Under the Waste Regulations (2011) all businesses are required to apply the Waste Hierarchy when disposing of their waste. Waste 'collectors' must also provide separate bins for segregating cans, plastics, paper and glass; providing a single bin is no longer an option at events.

Waste is a persistent and visible issue for festivals. A particular challenge is the culture of leaving tents and other campsite waste at the end of events, which costs organisers money and creates negative media exposure. The issue has become a key focus for festivals, with initiatives such as 'Leave No Trace' or 'Love Your Tent' seeking to engage audiences but showing limited success to date.

In an AIF audience survey nearly 7% of respondents who camped at an event in 2013 admitted to leaving their tent behind, either because it was broken (the most popular excuse), because they couldn't bear to carry it, because it was cheap and they could get another one, or because they lost it.[42] Multiplied by the total number of AIF festivalgoers in 2013, that means an estimated 18,000 tents left behind by AIF member festivalgoers, or nearly 54 metric tonnes of tent-related rubbish potentially sent to landfill. In addition, recent research by Festival Republic as part of an Innovate UK project, found that approximately 45,000 tents are brought to Reading Festival annually. It was discovered that 30% of Reading Festival attendees leave their tents and camping equipment, with 79% saying they were 'too tired' post Festival, and 59% viewing tents and camping equipment as 'cheap and easily replaceable'. This means potentially 13,500 tents are abandoned every year — if the average cost of a tent is £40, then the approximate cost to audiences of equipment left behind is over £500,000.

Another challenge for sustainable waste management at festivals is the difficulty of implementing recycling-on-the-go systems in a fast-moving environment where audiences aren't necessarily focused on selecting the right bin. The lack of available specialist waste containers in the UK that are clearly signed, will continue to present a barrier to organisers whose efforts are often thwarted by recycling loads being rejected at waste management facilities - due to contamination.

Some festivals have begun to address the waste issue by controlling how much waste is created in the first place through the use of reusable cup systems (which are already far more widespread on the continent). A natural extension to this concept is for organisers to consider the reusability of all disposable items used on their events sites including food service disposables, infrastructure and decor.

[42] AIF Audience Survey (AIF: 2014)

The Festival Industry Green Manifesto Survey asked festivals organisers what waste management practices they had in place with the following results: [43]

This survey is likely to have attracted festial organisers who already have a commitment to recycling, and thus is not representative of industry-wide practice. However it offers an indication of what festivals who are engaged are focusing on, and it's interesting to note that only a third have recycling targets in place. We also know that the most common approach to waste management at events is either the two-bin front of house approach or mass clearance post event. These systems both rely on off-site recycling which can make it harder to achieve accurate reporting.

OVERVIEW OF POTENTIAL FOR REDUCTIONS

OVERVIEW OF THE IMPACT OF WASTE ON UK FESTIVAL CARBON FOOTPRINTS AND THE FEASIBILITY OF REDUCTION MEASURES	
Typical percentage that waste contributes to the onsite carbon footprint of a festival	35%
Total amount CO_2e produced by festivals annually due to waste	7,000 tonnes
Total amount of waste generated by festivals annually	23,500 tonnes
Key opportunities to reduce waste and associated impacts	• Reduce the amount of materials consumed. • Increase re-use rates for materials and adopt solutions like reusable cups. • Increase recycling and compost rates. • Use more sustainable products and materials.
Summary of the feasibility of opportunities to reduce waste	• Opportunity for financial savings through avoided disposal charges. • Increasing numbers of event cleansing contractors now provide an environmentally responsible service.

[43] Festival Industry Green Manifesto Survey (Kambe Events et al: May 2015)

Approaches that can help to reduce waste and increase recycling

- Change the behaviour of festivalgoers and crews; encourage them to reduce waste and to assist with responsible waste management.
- Focus on campsite waste.
- Contractually oblige concessionaires and contractors to segregate material within their offices, kitchens, bars and compounds.
- Manage waste responsibly by providing clearly signed containers for segregating material at source in both front and back of house areas. Demand that cleaning contractors instruct their operatives to segregate recyclables as they pick litter.
- Encourage contractors and concessions not to introduce items into the waste stream in the first place.

PRECEDENTS

Love Saves the Day (LSTD) festival (capacity 20,000) takes place in Bristol over two days during May each year. Recycling bins are provided in groups of four throughout the site, which allows visitors to separate cans, plastic bottles and glass. Tent shaped bin-tops are labelled in bold writing and provide different shaped holes through which items can be 'posted'.[44] Bars and traders are provided with facilities to collect cardboard, cans, plastic bottles, glass, paper and tetra packs. In 2015, LSTD trialled a reusable cup system, which reduced the number of disposable cups used onsite by over 150,000.

Glastonbury Festival (capacity 180,000) provides a well established example of controlling the waste inputs to an event on a large scale. Since 2004, Glastonbury has required food and drink vendors to adhere to a strict packaging policy of wood and paper only. These packaging materials are collected together with food from both public and back of house areas and then sent to an in-vessel composting facility for processing.

The Durable Tent Project

In an attempt to better understand the camping waste issue, Festival Republic in partnership with Julie's Bicycle and supported by Innovate UK have conducted a research study focused on festival goers' attitudes as well as some service trials. The results are being analysed and will be used to design a circular business model around the durability of tents.

[44] The tent shape also means that bins can't be used as tables, meaning that waste doesn't build up on the top, obscure the signage or look unsightly.

TOILETS

A recent report undertaken for Bristol Festival Forum* highlighted that the main environmental impact associated with temporary toilets comes from the transportation of human waste by road i.e. CO_2 emissions from diesel engines in waste tankers and the movement of the toilet cubicles themselves. Three other main impacts are:

- **The way that the waste is treated.**
- **The chemicals (usually blue stuff) which are used in the flush.**
- **The use of large quantities of drinking quality water in some flush toilet options, which has been both transported and purified.**

The two areas of potential for reducing impacts are minimising transport and making the right choice (where possible) about how the waste is processed. Glastonbury festival's long-drops and the 'poo reservoir' onsite are a good example of minimizing transport

Both portaloos and compost toilets use less water than flushing toilets, and compost toilets reduce the use of blue flush chemicals. Portaloos can be a good option if transport is minimised, and the waste is sent to anaerobic digestion facilities which capture and use methane for waste to energy. Compost toilets or long-drops represent the best environmental option provided the waste can be stored, composted and used on the land locally.

* Source: Environmentally Friendly Toilets: An analysis of options for Bristol Event Organisers (2015), Resource Futures and Kambe Events on behalf Bristol Festivals Forum

FESTIVALOO COMPOST TOILETS (© BURST PHOTOGRAPHY)

SCENARIOS FOR REDUCTIONS

The current Julie's Bicycle benchmark estimates recycling rates at festivals at approximately 32%, however as mentioned previously, festivals providing the data for this benchmark are likely to be those who are actively working towards reducing their environmental impacts. Since many festivals still recycle almost nothing at all, we have assumed 100% landfill as our baseline scenario. The Julie's Bicycle benchmark of 32% is our first scenario that, if applied across the whole industry, would reduce the overall carbon impact by 11%. Scenario 2 is in line with the government's current statutory target for households to recycle 55% of waste by 2020.[45] Scenario 3 is in line with a current legislative proposal by the European Parliament, to increase recycling targets to 70% by 2030.

The scenarios above are based on the percentage of total waste that is recycled or landfilled, not the percentage of 'recyclable' materials that are recycled, an important distinction. The festival industry will need to standardise on reporting methodology to compare performance and track progress.

SCENARIOS FOR THE REDUCTION OF WASTE ON TOTAL UK FESTIVAL CO_2e EMISSIONS

	Baseline		Scenario 1		Scenario 2		Scenario 3	
	100% landfill		32% recycling		50% recycling		70% recycling	
	Unit	CO_2e (t)	Unit	CO_2e (t)	Unit	CO_2e (t)	Unit	CO_2e (t)
Diesel (L)	5,000,000	13,000	5,000,000	13,000	5,000,000	13,000	5,000,000	13,000
Waste (t)	23,500	6,600	16,000	4,500	11,800	3,300	7,050	2,000
Water (m^3)	107,000	37	107,000	37	107,000	37	107,000	37
Total CO_2e (t)	19,600		17,500		16,300		15,000	
Reduction in overall emissions	0%		11%		17%		24%	

SUMMARY

Anecdotal evidence from contractors suggests that typically up to 65% of festival waste may be recyclable.[46] The types of materials used onsite can of course be streamlined and controlled to increase the amount of recyclable content. Assuming that all of the recyclable content can be recovered, a 65% recycling rate currently means recycling 100% of the potential recyclable materials. With the best will in the world, this is not always going to be possible in the dynamic and temporary nature of the business. But we should aim high by setting targets that help to meet the 50% overall reduction in CO_2e as suggested in scenario 2.

RECOMMENDATIONS

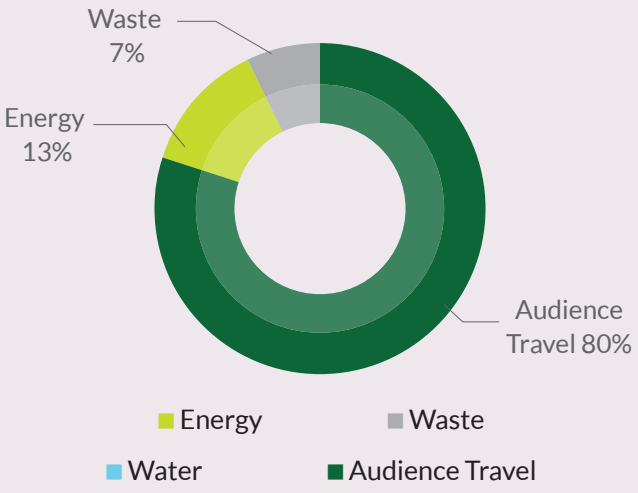
- **REDUCE WASTE**
- **SEGREGATE ALL MATERIALS ONSITE**
- **AIM FOR AT LEAST A 50% RECYCLING RATE (OF TOTAL MATERIALS PRESENT ONSITE)**
- **ENSURE ACCURATE REPORTING**

[45] Although event waste is classified as commercial, municipal targets offer us a useful benchmark for what is considered feasible.
[46] Greenbox states that they estimate an average of 65% of waste is recyclable at the events that they service.

Domestic transport accounts for one third of total UK carbon emissions, with passenger miles from leisure activities accounting for 39% of this. [47]

A study of music industry environmental impacts in 2007 found that audience travel to music events (of all types) equalled 231,000 tonnes CO_2e annually, and that audience travel accounted for up to two thirds of festival sector emissions.[48] However, these studies did not include artist and crew travel, as data proved difficult to obtain. More recent analysis of industry data suggests that audience travel typically constitutes around 80% of a festival's carbon footprint (again, not counting artist, crew or contractor travel and transport).[49]

AVERAGE CARBON FOOTPRINT OF UK FESTIVALS INCLUDING AUDIENCE TRAVEL (CO_2e)



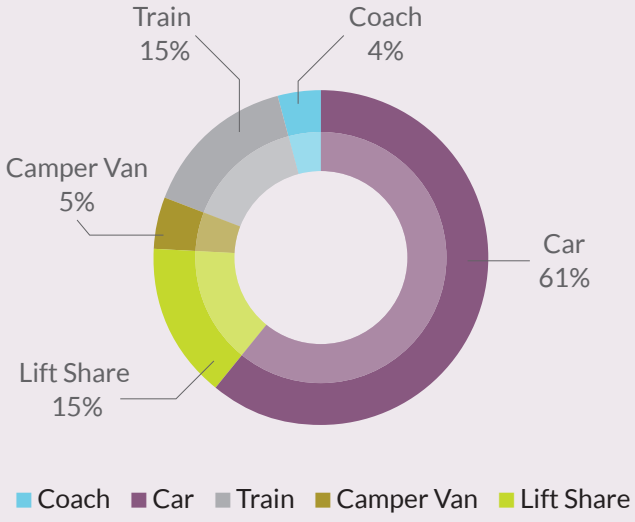
The contribution of audience travel to the carbon footprint does of course vary considerably between events, due to demographic and location. For example, city-based events such as Reading Festival tend to receive a much higher percentage of their audience by public transport, so the impact of audience travel on their carbon footprint is comparatively less. The percentage of audience travel also varies depending on the operational carbon footprint of an event. For example, audience, crew, and contractor travel represented over 90% of Shambala Festival's 2014 carbon emissions because it has worked to significantly reduce its core operational emissions.

It is also important to recognise that non-audience transport, i.e. crew, staff, contractors and service traffic, is somewhat of a blind spot in terms of industry data. Few events have either measured or made public comprehensive data, but information from the few that have suggests that it can be substantial, and we recommend that more events start gathering information so that we can further develop our understanding of this area. At Shambala Festival 2014, crew and contractor travel made up 30% of the event's total carbon footprint, with audience travel contributing 63%, meaning that travel was responsible for 93% of the event's overall carbon emissions.

There is also little information available on the impact of artist travel on a festival carbon footprint. This is a challenging area to unravel, as impacts may need to be apportioned to different events because many artists fly into the UK for multiple dates.[50]

Audience travel is not strictly an element of 'operational' or 'onsite' emissions, and is not under the event organiser's direct control, however it remains the most significant single source of carbon emissions attributable to the events industry and, as promoters do have an influence over attendee travel choices we should continue to work with our audiences on the most effective ways to encourage and enable more sustainable travel choices.

UK FESTIVAL AUDIENCE TRAVEL BY TYPE



Note: The travel breakdown is derived from averages of audience survey data as seen in Appendix 1. Where datasets do not match, the best available data e.g. coach and train percentage breakdown provided by UK Festival Consensus 2012, has been applied. For all travel projections in the 'potential for reductions' section we have used Julie's Bicycle IG Tools 'default' travel breakdowns, which are based on broader research but do not take into account camper vans as a separate category - we'd recommend the industry begin standardising audience travel surveys to allow better pooling of data

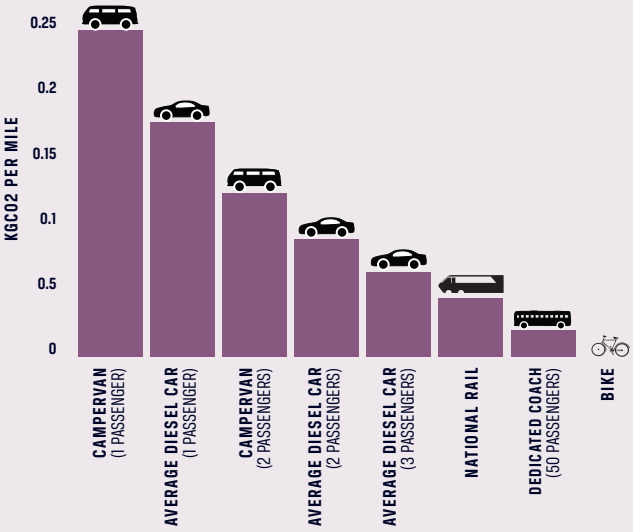
[47] Department of Energy and Climate Change (DECC), 2013 UK Greenhouse Gas Emissions, Provisional Figures and 2012 UK Greenhouse Gas Emissions, Final Figures by Fuel Type and End-User (DECC: March 2014).
[48] First Step: UK Music Industry Greenhouse Gas Emissions 2007 (Julie's Bicycle: 2008). Online at http://www.juliesbicycle.com/resources/first-step-uk-music-industry-report
[49] Source: Creative IG Tool benchmarks, 2014 (Julies Bicycle).
[50] Julie's Bicycle have researched the carbon impact of UK bands touring in Moving Arts: Managing the Impacts of Our Touring. Volume 1: Bands (2010). Because of the difficulty in apportioning the impacts of a whole tour to single shows, it makes more sense to examine artist touring as a separate collective area of impact - however data remains patchy. We recommend more artists, agents and managers use Julie's Bicycles Creative IG Tool for Touring to begin quantifying the impacts of their tours to contribute to a more complete understanding of where the environmental impacts across the live music industry lie. Online at http://www.juliesbicycle.com/resources/moving-arts-managing-the-carbon-impacts-of-our-touring-volume-1-bands

Lift sharing through websites has increased dramatically based on figures from one of the providers to summer festivals, GoCarShare. In 2014, 8,812 shares were recorded across 104 festivals compared to 450 shares in 2010. This is both an indication of their growth as a specific provider, but also of a trend toward formalised car sharing that is made possible through new digital methods of connecting people.

Despite this, Amongst AIF member festivals, there has been an increase in the number of people travelling by car with two people or fewer, with a 13.1% rise on average over the six years of the annual AIF audience survey.[52]

The AIF Survey also explored incentives to encourage the use of public transport. When asked which incentives would encourage survey respondents to travel by public transport instead of car, the most popular choice was a discount on a public transport ticket (48.4%). The second most popular incentive was fast track entry to the event (30.7%), and the third most popular was preferential treatment for camping sites (23.3%). However, 19.8% of festivalgoers said that they cannot be persuaded to part from their cars (or didn't like any of the above options).

COMPARISON OF CARBON EMISSIONS BY TRAVEL TYPE [51]



POTENTIAL FOR REDUCTIONS

OVERVIEW OF THE IMPACT OF AUDIENCE TRAVEL ON UK FESTIVAL CARBON FOOTPRINTS AND THE FEASIBILITY OF REDUCTION MEASURES	
Total amount CO_2e produced annually by audience travel to UK festivals	78,155 tonnes
Key opportunities to reduce audience travel and associated impacts	• Reduce car travel in favour of public transport and dedicated coaches. • Increase car occupancy.
Summary of the feasibility of opportunities to reduce audience travel	Varies significantly depending on demographic and location of the event, however there is usually a medium to high degree of control over how people arrive at events.

PRECEDENTS

The 'Glastonbury Festival Green Traveller' initiative was launched in 2011 to give incentives to people for travelling by public transport e.g. getting sole access to solar showers, discounts on meals, free yogurt and festival t-shirts. Cyclists are also provided with a reserved camping field. Car tickets have increased in cost by 50% in 4 years, and in 2014, an early release of tickets bundled with coach travel further strengthened the initiative. Over 50% of the Glastonbury Festival audience now travels by means other than car..

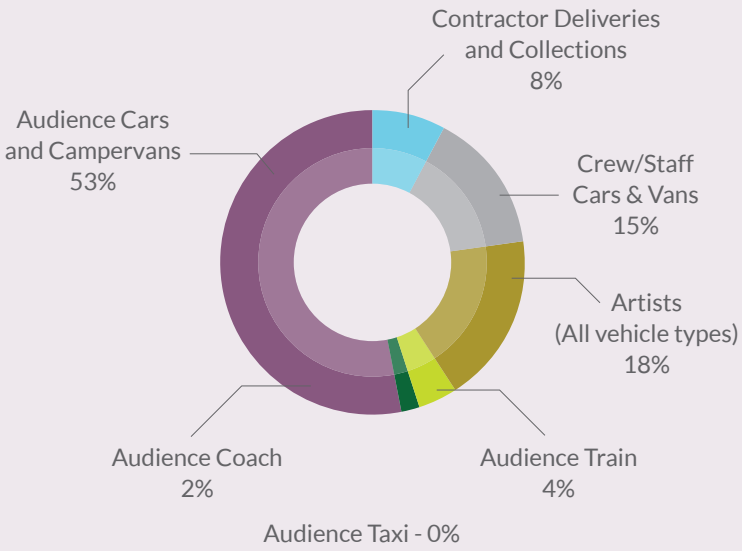
In 2012 Festival Republic introduced a Priority Car Park for those who shared their rides to and from their festivals. These car parks are in a prime location, very close to the campsites. In the last four years car sharing numbers have increased from

[51] As there are no official conversion factors for campervans we have used the conversion factor for diesel vans up to 3.5 t. All conversion factors have been issued by DEFRA, except the conversion factor for coaches, which is from the UK National Atmospheric Emissions Inventory.
[52] Dr. Emma Webster, Live Music Exchange, AIF Six Year Report (2014)

57 rides in 2012 to 2,267 rides offered in 2015. Car sharing not only substantially reduces the audience travel footprint, but also traffic congestion, and their audience feedback has suggested it also improves the festival experience.

Shambala Festival carried out a detailed analysis of their 2015 travel-related carbon footprint. They required all contactors to log their journeys using the Energy Revolution online calculator, and invited artists and staff/crew to log their journeys to provide sample data used to establish average journey lengths and vehicle types. They found that audience travel accounted for roughly half of total transport related emissions at the festival, suggesting that non-audience travel is a significant blind-spot in industry data.

CO_2e EMISSIONS BY TRANSPORT TYPE AT SHAMBALA 2015



THE IMPACT OF SPECIFIC MEASURE ON TRAVEL EMISSIONS

SCENARIOS FOR THE REDUCTION OF AUDIENCE TRAVEL EMISSIONS ON TOTAL UK FESTIVAL CO_2e EMISSIONS		
Action	**Reduction in CO_2e emissions (tonnes / %)**	
Increasing average car occupancy from 2.6 to 3.5 passengers*	15,407 t	20%
Increasing audience arriving in dedicated coaches to 30%	8,887 t	11%
Increasing audience arriving by train to 30%	4,450 t	6%
Increasing audience arriving by train and coach to 60%	14,192 t	18%
Increasing average car occupancy to 3.5, coach to 35% and train to 25%	24,464 t	31%

* Based on figure taken from the Julies Bicycle Creative IG Tool for average car occupancy at greenfield festivals 2010-2014.
All reductions based on compariso with industry averages.

SUMMARY

If 60% of audiences travelled by coach and train and the remaining car occupancy was increased from the industry average of 2.6 to 3.5 passengers, the carbon savings would be greater than the total operational emissions of the industry itself. This can be seen as a valuable focus alongside reducing operational impacts.

RECOMMENDATIONS

- **MEASURE CONTRACTOR AND ARTIST TRAVEL**
- **INCREASE CAR OCCUPANCY AND USE OF PUBLIC TRANSPORT**
- **CONSIDER CARBON BALANCING INITIATIVES TO RECOGNISE UNAVOIDABLE EMISSIONS**

WATER SCARCITY IS A BIG GLOBAL ISSUE THAT AFFECTS MILLIONS OF PEOPLE EVERY YEAR

There has been a rise in droughts in the UK in recent years and increasingly water for events has to be sourced from further afield. This has an impact on the cost of events and on the environment, with additional transportation required to bring it to the site.

Whilst the carbon emissions attributable to direct water use at events is negligible in comparison to energy or waste, it is something that perhaps should still be considered in a wider context. The prevalence of water consumption via disposable plastic bottles affects the footprint of the event in many areas, including the supply chain, resource and waste management, and transportation.

The current Julie's Bicycle benchmark for mains water consumption at festivals is 12.5 litres per audience day, so UK summer festivals are consuming an estimated 107,300 m3 (or 107,300,000 litres) annually.[55] There are no reliable figures currently available for the amount or number of bottle of water sold and consumed at events.

Consumer campaigners Which? estimate that the number of plastic bottles sent to landfill each year in the UK would fill Wembley Stadium twice over; they describe bottled water as 'an unnecessary drink' that costs us £1.68bn a year.[53] It takes approximately 7 litres of water to produce a 1-litre bottle, so it's actually a very water intensive product!

Plastic pollution has become a more prominent public issue in recent years, partly due to the scale and graphic images of ocean pollution, but also due to health concerns about toxicity. Vast quantities of floating plastic debris in the ocean have formed into gyres in the South Pacific and other areas, and a recent study found that one in six fish in UK waters contained plastics in their bodies.[54]

After a flurry of interest regarding the tightening of regulations and enforcement of water safety after the 2012 Olympic games, water has not featured as a prominent issue in the industry, although both the AIF and Julie's Bicycle have published guides and advice about managing water at events.[56] Whilst we recognise that water is a precious resource and water conservation should be practiced wherever possible, as it is not a significant source of emissions, and there is little data or information available, this report will not focus its efforts here, with the exception of recognising current water-related initiatives.

PHOTO: WATERAID KIOSK AT GLASTONBURY FESTIVAL

[53] Julie's Bicycle Practical Guide: Water Management at Outdoor Events (Julie's Bicycle: 2014)
[54] A. L. Lusher, M. McHugh and R. C. Thompson, Occurrence of micro-plastics in the gastrointestinal tract of pelagic and demersal fish from the English Channel (Marine Pollution Bulletin: 2013), Volume 67, Issues 1-2, p 94-99
[55] This figure is calculated using the Julie's Bicycle Benchmark of 12.5 L per audience day and assumes 270 festivals with an average festival length of 2.7 days, with a total audience of 3.17 million. Data from UK Music's Music Tourism: Wish You Were Here (2013).
[56] Julie's Bicycle Practical Guide: Managing water at outdoor events (2015) and AIF Water Guide for Festivals (2014) (members only).

POTENTIAL FOR REDUCTIONS

OVERVIEW OF THE IMPACT OF WATER USE ON UK FESTIVAL CARBON FOOTPRINTS AND THE FEASIBILITY OF REDUCTION MEASURES	
Typical percentage that water contributes to the onsite carbon footprint of a UK festival	<1%
Total amount CO_2e produced by UK festivals annually due to water	37 tonnes
Total estimated water used by UK festivals annually	107,330 m^3
Key opportunities to reduce water use and associated impacts	Use of water conserving technology such as waterless or compost toilets, push-taps, etc. Minimising leaks.
Summary of the feasibility of opportunities to reduce water use	Not a huge potential for carbon reductions (Measures are straight forward to implement) and not currently a focus for organisers, but water scarcity has other significant environmental impacts.

Methods to reduce water consumption at events are relatively straightforward and include using water-saving taps (push taps, sprinkler taps), using capacity limiters where appropriate, preventing leaks, and communication (generally signage at water points) about water conservation onsite.

FESTIVALGOER USING A FESTIVAL WATER BOTTLE AT SHAMBALA 2014. 1 IN 10 AUDIENCE PURCHASED A WATER BOTTLE AS PART OF THE BRING A BOTTLE INITIATIVE , RAISING FUNDS FOR CHARITY FRANK WATER.

PRECEDENTS

The 'Bring a Bottle' initiative at Shambala Festival in 2014 encouraged the audience to bring their own bottles, banned the sale of drinks in disposable bottles and introduced reusable cups, preventing 120,000 disposable cups from being used once and then discarded.[57] Reusable bottles are also being encouraged at Glastonbury Festival and the RAW Foundation has subsequently released two plastic-free festival guides, for festival organiser and festivalgoers.[58]

In 2015 Glastonbury Festival made 10,000 stainless steel water bottles available for purchase to festivalgoers and provided refill points throughout the site in association with RAW Foundation and WaterAid.

Water Initiatives

FRANK Water, a charity currently working with seven UK festivals, works with local partners to deliver sustainable solutions to water and sanitation issues in the poorest and most vulnerable communities in India. Their 'FreeFill' service provides access to chilled filtered water at festivals, raising funds for their projects, and helping to reduce disposable plastic through use of their reusable bottles.

The Reduce Action Waste (RAW) Foundation is dedicated to reducing the use of disposable plastics in the world and is working with the festival sector though their Making Waves campaign. In partnership with Shambala, Glastonbury and other festivals, they have promoted the use of reusable stainless steel bottles and advocated reduction of plastic use.

SUMMARY

WATER CONSERVATION AND REDUCING WATER RELATED IMPACTS, PRINCIPALLY BOTTLED WATER AND DRINKS, REDUCES ENVIRONMENTAL IMPACTS.

Whilst water consumption is an important issue, it does not offer the opportunity to meaningfully reduce the overall carbon impact of the industry. Nonetheless water conservation and reducing water-related impacts, principally bottled water and drinks, and avoiding the pollution of local waterways, is a valuable endeavour.

[57] Bring a Bottle campaign by Kambe Events & Dion Star.
[58] Making Waves: Guide to Plastic Free Festivals (RAW Foundation & Kambe Events: 2014). Making Waves: Festivalgoers Plastic Free Guide RAW Foundation & Glastonbury Festival: 2014).

Impacts and Solutions: Food

There is an increasing focus on sustainable food, both in the festival industry and in wider society. National scandals such as horse-meat mislabelled as beef and other kinds of meat, and recent cases of fraudulently labelled food making its way into the festival food chain, have sensitised consumers and buyers.

Food has become a part of the marketable offer for many summer festivals and there is an increasing expectation from audiences about the variety and quality of food on offer.

THE IMPACTS OF THE FOOD SUPPLY CHAIN ARE SIGNIFICANT, WITH SOME RESEARCH SUGGESTING LIVESTOCK AND THEIR BY-PRODUCTS ALONE CONTRIBUTE BETWEEN 18% AND 50% OF ALL GLOBAL GREEN HOUSE GASSES.[59]

The whole lifecycle of food production, often referred to as 'field to fork', affects carbon emissions; including methods of farming, processing, packaging, transportation, storage and waste (before consumption and waste left by the end user). Beyond the carbon emissions, there are various other issues to consider such as pollution from production and waste, animal welfare, consumer health and many land use implications such as land degradation, desertification and deforestation, biodiversity loss, displacement of peoples, social justice issues around access to land as a resource and the depletion of fish stocks.

It is estimated that half of our edible food goes to waste and that UK households annually throw away 4.2 million tonnes of avoidable food and drink waste, worth £12.5 billion.[60] Fareshare Southwest, a charity dedicated to capturing edible food waste and distributing it to those in need, has launched a pilot festival initiative, Eighth Plate, with A Greener Festival and Nationwide Caterers Association (NCASS) to collect and redistribute up to 60 tonnes of edible food waste from six festivals in 2015.

NCASS introduced a City & Guilds accredited sustainability training course and certificate for mobile traders in 2013, and they are currently working with the Sustainable Restaurants Association (SRA) to explore ways in which to support their 800-strong membership to embrace sustainable practices.

In 2012, Sustain published the Good Food for Festivals Guide, which explores certification, and provides examples of how festivals can embrace delicious, sustainable food practices.

What Festivalgoers think about food

Sustain asked festivalsgoers about their attitudes toward food as part of their research when writing the Good Food for Festivals Guide:

- 83% would choose free-range eggs to eat if given a choice.
- Nearly 80% would prefer to eat meat raised to higher animal welfare standards.
- 72% think that festival organisers should ban the sale of fish and seafood from overfished stocks or caught in environmentally damaging ways.

[59] Goodland, R & Anhang, J., Livestock and Climate Change: What if the Key Actors in Climate Change Were Pigs, Chickens and Cows?, Worldwatch, Nov/Dec 2009. (Worldwatch Institute: Washington DC, USA) pp. 10-19.
[60] Data online at http://eighthplate.org.uk and http://www.wrap.org.uk/content/household-food-and-drink-waste-uk-2012.

PRECEDENTS

Fusion Festival in Germany (60,000 capacity) is an alternative dance and arts festival that has served only vegetarian food since 1997. Tollwood Festival, also in Germany, attracts over a million day visitors over its 10 days as a multi-arts city centre event. Since 2004 the festival's food stalls have served close to 100% organically grown certified food — with only a very few exceptions permitted because some special ingredients (such as spice blends) are not available in organic quality. In addition, ingredients cultivated in developing countries such as wine, rice, bananas, chocolate, coffee, tea and sugar, must be purchased from Fairtrade sources.

Shambala festival stipulates that all meat onsite is free-range and from certifiable sources, and fish is only permitted from the MSC 'Fish to eat' list. In addition, all milk is organic and all tea, coffee, sugar, bananas and chocolate must be Fairtrade. Many other events, such as Glastonbury, encourage Fairtrade and local produce and run Green Traders Awards to encourage sustainability amongst caterers.

SUMMARY

Food production is a huge and sometimes emotive topic for events, and it is one that we cannot explore fully within the scope of this report. However, it is an area that deserves to be embraced by the festival industry from an ethical and climate change perspective.

We have not attempted to quantify emissions impacts attributable to food in this report. A person eats wherever they may be, so it can be considered that there is no additional impact attributable to the festival they are attending; although festivalgoers may consume more food and drink than in everyday life. However, as festival organisers we can seek to reduce the environmental impacts of food consumption where we have direct or indirect control over our supply chain, and we can present positive choices about sourcing and ethics, alongside quality, to our audiences.

Reducing meat and dairy consumption offers the greatest opportunity to reduce climate impacts associated with food. At the very least, responsible and local sourcing can help to ensure the provenance of what our audiences are consuming, minimise animal welfare issues and environmental impacts such as food miles and maintain confidence in the quality of the food on offer. Using trusted certifications such as Soil Association Organic and sourcing from trusted local producers and suppliers is a good start.

RECOMMENDATIONS

- **SOURCE AS LOCALLY AS POSSIBLE.**
- **ESTABLISH MINIMUM STANDARDS BASED ON CREDIBLE CERTIFICATIONS.**
- **REDUCE FOOD WASTE.**
- **REDUCE MEAT CONSUMPTION.**

Impacts and Solutions: Carbon Balancing and Positive Investments

Carbon balancing, often referred to as 'offsetting', can be a divisive subject and is a complex area of research and policy. The concept has also been tainted by some unsound or unscrupulous providers, despite attempts at regulation. However, many prominent organisations agree that making positive investments in carbon reduction initiatives, in order to balance unavoidable emissions, is a good thing. WWF, Greenpeace and Friends of the Earth jointly released the position that, 'we should be aware of, reduce and account for the carbon emissions in that order of priority' — i.e. reductions always come first. In reality we are unlikely to be able to make the transition to a zero carbon industry in the very short term and investments in technologies such as renewable energy infrastructure, which help communities move towards a low carbon society, are undeniably positive. If reductions are kept firmly in focus, then it may be valid to embrace the concept of 'carbon net neutral' or 'carbon net positive' in the short term i.e. balancing unavoidable emissions with investments that reduce carbon emissions, such as forest planting or renewable energy.

PICTURE: A CONVERGING WORLD RENEWEBLE ENERGY (CWRE) WIND TURBINE LOCATED IN THE TIRUNELVELI DISTRICT OF TAMIL NADU, INDIA. CONVERGING WORLD IS THE PARTNER PROJECT FOR FESTIVAL INITIATIVE ENERGY REVOLUTION, WHICH WORKS WITH AUDEINCES, ARTISTS AND THE SUPPLY CHAIN TO BALANCE UNAVOIDABLE TRAVEL EMISSIONS THROUGH INVESTMENT IN RENEWABLE ENERGY.

CREATING A VISION FOR A SUSTAINABLE UK MUSIC FESTIVAL INDUSTRY

REDUCTION OF
50%
OF GREEN HOUSE GASSES REQUIRED BY 2025

TARGETS

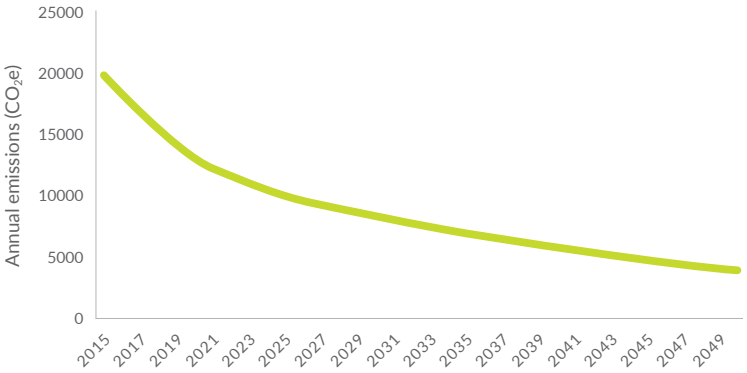
The UK Climate Change Act (2008) commits to a 50% reduction in UK carbon emissions from 1990 levels by 2025 and 80% by 2050.

We do not have a 1990 baseline of carbon emissions for the festival industry. The best data we have available is for 2014. Considering that the festival landscape has changed so dramatically over the past 25 years, and that no concerted, unified effort to reduce emissions has been made to date, we have chosen to take 2014 as our baseline.

Applying the carbon budget to the current estimate of 19,778 t CO_2e per year from the core impacts of energy, waste, and water (see p.12 An overview of the environmental impacts of UK festivals) gives us a target figure or 'carbon allowance' of 9,889 tonnes of annual emissions by 2025 and 3,956 tonnes by 2050.

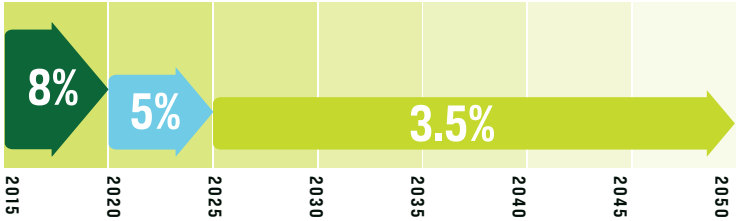
To achieve this, we would require (roughly) an annual reduction in impacts of 8% per year to 2020, a further 5% per year to 2025 and a 3.5% reduction every year after that to 2050.

TARGET CARBON EMISSIONS TRAJECTORY FOR THE UK FESTIVAL INDUSTRY TO 2050



THE NATIONAL CARBON TARGET IN RELATION TO THE UK FESTIVAL INDUSTRY

To achieve 80% reductions by 2050 (the legally binding national target), the festival industry would need to achieve an annual reduction in impacts of 8% per year to 2020, a further 5% per year to 2025 and a 3.5% reduction every year after that to 2050.



CHANGING BEHAVIOUR

Perhaps our greatest opportunity to take a meaningful role in mitigating climate change is to use our individual and collective voices to communicate with our audiences; highlighting issues, leading by example and inspiring new ideas and behaviour. We can contribute to introducing, making attractive, and normalising ideas about sustainability, and can use our creativity to find innovative and fun ways to engage festivalgoers. This need not take centre stage in the experiences we offer, in our brands or communications, instead it can be seen as an expression of our ethics in the way we manage our events and promote the benefits that sustainable thinking at events can bring to festivalgoers' experiences. We know from research that while the sustainability of an event is seldom the primary motivation for ticket purchase, festivalgoers want the events they attend to be environmentally responsible and are open to embracing changes if they are delivered in a positive way. Indeed, well considered initiatives often enhance festivalgoers experiences through cleaner sites, quality food, interactive experiences such as pedal phone charging, thought provoking artworks, and the feeling of well-being that comes from being part of something that matches their ethics and aspirations.

ASPIRATIONS IN THE INDUSTRY

81% of the forty-seven festival organisers who responded to the recent Festival Industry Green Manifesto Survey, 'felt that festivals should work together to agree shared industry standards.' By working collectively we can be far more effective in making changes, providing confidence in demand for sustainable solutions in the supply chain, helping to promote positive behaviour changes in audience culture and sharing experience and expertise.

The top five priorities put forward by organisers for an industry green manifesto are:

1. **Sustainable approaches to energy (78% of participants).**
2. **Standard approach to serve-ware and packaging (76%).**
3. **Use of reusable cups (71%).**
4. **A standard approach to waste management systems (69%).**
5. **Sustainable travel policies (69%).**

CAN WE REALISTICALLY ACHIEVE A 50% REDUCTION IN ANNUAL UK FESTIVAL EMISSIONS WITHIN 10 YEARS?

Yes. The scenario below demonstrates an overall reduction in emissions of 52%, achieved by reducing fossil fuel (diesel) use by 50% and reaching 50% recycling rates. This is a target that can be met through gradual improvements over the next ten years, however there are already precedents in the industry of achieving 100% renewable energy and improved recycling rates. The technology and expertise exists in the current marketplace and the advice to make changes is freely available online.

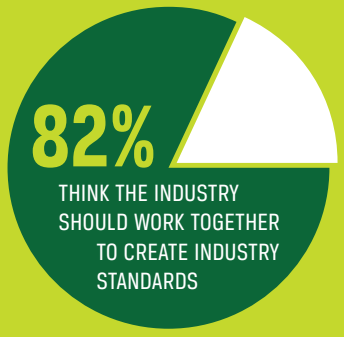
REALISTIC SCENARIO FOR REDUCING ONSITE INDUSTRY EMISSIONS BY 50% (EXCLUDING AUDIENCE TRAVEL)

	Percentage change	Actual Overall Reduction	CO_2e (tonnes) reduction	Contribution to overall reduction
Diesel (litres)	- 50%	2,482,110 (litres)	6,459	33%
Waste (tonnes)	+ 50% recycling	10,592 (tonnes)	3,070	17%
Water (m3)	N/A	N/A	N/A	N/A
		Total	**9,566**	**52%**

WHAT IS HOLDING US BACK?

ACCORDING TO THE FESTIVAL INDUSTRY GREEN MANIFESTO SURVEY OF 2015, THE THREE MOST COMMON RESERVATIONS ABOUT IMPLEMENTING ENVIRONMENTAL PRACTICES AMONGST FESTIVAL ORGANISERS ARE:[61]

1. **FEAR OF INCREASED COSTS.**
2. **LACK OF INTERNAL RESOURCES AND TIME TO MAKE CHANGES.**
3. **LACK OF EXPERTISE IN SUSTAINABLE APPROACHES.**



When asked what support would most help festivals organisers to make changes, the three areas of focus put forward were: training for the management team, opportunities to share and exchange knowledge with other organisers, and case studies about successful practice. Much good quality information about greening operations already exists and there are good opportunities to exchange knowledge, such as at the Green Events and Innovations events at the International Live Music Conference (ILMC). However much more can be done, clarifying shared issues such as waste management, working toward clear industry standards and better resourced advice will all help to provide guidence on best practice and approaches.

Cost is undoubtedly a key issue. Certain sustainable approaches can cost more than business as usual, but recent studies prove that this is not always the case. New services and solutions usually attract a premium when they enter the market, but economies of scale may sometimes work in our favour if we can collectively commit to new ways of doing things — suppliers need confidence to invest in innovation and new equipment, and to bring these new products and services to scale.

[61] Festival Industry Green Manifesto Survey (Kambe Events et al: May 2015)

AN OVERVIEW OF THE DRIVERS OF CHANGE

Change in any industry is primarily driven by one, or a combination of: legislation, consumer opinion, opportunity, and cost. Other drivers include company ethos, which often depends on the conviction of owners or middle management.

Legislation

In festival sector legislation, directly regulating environmental performance is absent beyond long-established pollution and contamination controls. Wider environmental policies and legislation can have an impact on the cost of resources such as fuel or waste management (landfill tax). These types of legislation can affect sourcing decisions and long-term planning for both events and the supply chain, however overall regulation remains a relatively weak driver for our sector.

However, we are all still subject to the UK Climate Change Act 2008, which sets a statutory target of reducing UK carbon emissions for the year 2050 to at least 80% below the level of net UK emissions in 1990.

Consumer opinion audience attitudes

Recent surveys suggest festival audiences consider environmental performance important. The Virtual Festivals Census 2012 concluded that 67% of participants considered the environmental friendliness of festivals 'important' or 'very important'.[62]

In an audience survey, conducted in 2012 by A Greener Festival/Buckinghamshire New University 90% of respondents considered that it is the responsibility of the organiser to minimise environmental impacts, but 80% also believe it to be a festivalgoer's responsibility.[63]

We know that for most festival attendees green issues are not the primary driver for ticket sales, with several surveys showing that either music or the general atmosphere and character of the event are a higher priority.[64] However, indications are that the environmental awareness of an event is increasingly important to audiences, with higher percentages of people considering it, "an important factor when buying a ticket," when comparing 2013 and 2009 research.[65]

Reputation, community relationships and license

The festival industry has received particularly negative press exposure for the quantities of waste and tents left at the end of events. This has become a culture that affects many events and finding a solution could be seen as the 'space race' of the festival industry, with many events actively working toward scalable solutions. Local communities have also been effected by waste, for example, wellies being left in Leeds city centre after a particularly wet festival.[66] This highlights the impacts that go beyond the direct control of festivals. In some cases such issues can affect the relationship with local communities and in turn the licensing process.

Company ethos and staff commitment

Personal conviction and company ethos seems to be by far the most compelling driver for tackling green issues in the festival sector to date. There is a tangible commitment amongst some festival organisers to managing operations in an environmentally sensitive way, with over 80% of events that responded to the Industry Green Manifesto survey stating that they have an environmental policy and a range of green practices in place.[67]

In early 2014, Julie's Bicycle published a national survey of attitudes and actions on environmental sustainability across the UK arts industry, which attracted almost 350 responses.[68] The findings suggested that leadership is currently coming from the middle of organisations rather than at executive level: it was the people tasked with monitoring and making decisions on the ground who were most often driving forward environmental sustainability within their organisations. However, for real and lasting change to occur we will also need leadership at senior level.

[62] 67% of 11,000 respondents stated that they thought environmental friendliness was "important" in the survey published in the 2012 UK Festival Market Report, produced by UK Festival Awards in association with CGA strategy.
[63] T. Moore, Audience attitudes on the environmental Impact of Events (CM&SS/A Greener Festival: 2013). The survey had 2300 respondents from European Festivals 40 of which were UK festivals.
[64] Dr. Emma Baxter, AIF Six Year Report: 'The general atmosphere and overall vibe, character and quality of the event', was the most important motivation for attending a festival (53.2% average). In the UK Festival Awards Market Research Report (CGA Consulting: 2013), a survey of 3,380 British festivalgoers, 53% said music was their greatest motivation to attend.
[65] T. Moore, Audience Attitudes on the Environmental Impact of Events (CM&SS/AGF: 2013).
[66] e.g. Rob Parsons, 'Leeds city centre awash with Festival mud and wellies', (The Yorkshire Evening Post: 26 Aug 2013). Online at http://www.yorkshireeveningpost.co.uk/news/latest-news/top-stories/leeds-city-centre-awash-with-festival-mud-and-wellies-updated-1-5986831
[67] Industry Green Manifesto Survey (Kambe Events et al: 2015)
[68] Sustaining Creativity: National survey of attitudes and actions on environmental sustainability in the creative industries (Burns Owens Partnership & Julie's Bicycle: December 2014). Online at http://www.juliesbicycle.com/resources/sustaining-creativity-survey-results.

THE ACTIONS WE CAN TAKE NOW

It should be recognised and commended that the AIF and AFO are developing Green Manifestos with their membership, that many events have well-established green practices, and that organisations such as A Greener Festival, Powerful Thinking and Julie's Bicycle are already providing valuable advice to support the move toward more sustainable approaches, but still more effort, coordination and commitment is needed from the industry itself to accelerate the shift.

ACTIONS

Make a commitment to be actively involved in positive change by signing up to the Vision 2025: Festival Pledge.

Reduce emissions and impacts associated with our operations using the wealth of free online resources currently available.

Measure and monitor impacts to increase understanding and track progress using tools such as the Creative IG Tool carbon calculator.

Work with the supply chain to find and establish new solutions.

Engage with and support existing industry environmental projects such as A Greener Festival, Festival Wood, Energy Revolution, Making Waves and Love Your Tent.

Take part in collectively gathering the information and resources that will help all festivals make effective changes to improve their environmental performance.

To achieve effective change with minimum risk, cost and effort, festival organisers need to come together around a clear vision that genuinely represents industry aspirations for reducing our environmental impact — and we should create a clear a mechanism, or roadmap to deliver the necessary changes. The industry group Powerful Thinking is well placed to facilitate this vision on behalf the industry: over 250 festivals are currently represented directly or indirectly in its steering group and it has strong working relationships to other industry bodies and environmental projects.

There is an important and crucial role for everyone in the industry in meeting our part of the global challenge of climate change. Festival organisers, suppliers, industry bodies and industry media can work together more effectively toward a clear goal. This will need to be resourced, through commitment, time and funds, but together we can achieve a transformation of our industry's environmental performance within the next decade, helping to lead society toward a future we are proud to leave for the next generations.

Vision 2025 is built from the data and research available about our industry's impact on the environment, the aspirations identified from the Industry Green Manifesto Survey (2015) and from realistic reductions derived from the scenarios set out in this report. It is an evidence-based approach that provides a clear set of aims, which the industry can commit to and share in the journey moving forward. Once a critical mass of festivals commit to a shared vision for making the industry more sustainable, we can collectively develop the necessary resources and advice to creating a clear roadmap. This roadmap will make it easier for all of us to make changes which benefit the environment, our businesses and the audience experiences we create.

SPECIFIC ACTIONS FESTIVAL'S CAN TAKE IN 2016 AND 2017

Festivals vary considerably in terms of their current engagement with environmental performance and initiatives. A roadmap can help to provide clarity and direction about how we can take the first steps to move forward as individual festivals and together as an industry. It is recognized that some festivals have already taken the steps suggested below.

YEAR	FESTIVAL ACTION	KEY RESOURCES / TOOLS
2016	• Sign up to the Vision:2025 Festival Pledge • Create or update Environmental Policy to reflect overall aims and targets • Create a Green Action Plan or checklist for your event(s) to guide actions • Learn from existing information available freely online and attend key industry events	Creative IG Tool — a free online carbon calculator for events. Examples can be found at www.kambe-events.co.uk Green checklist and event guides available as part of the Bristol2015 Green Event Guides. Also see Links to Key Resources in this report Recommended event: Green Events & Innovations at the ILMC
2017	• Reflect on carbon impacts from measuring and contribute figures anonymously for first annual industry Progress Update Report". • Review progress and action plans • Share case studies • Engage supply chain through contractual agreements • Participate in industry conversations about direction, resources required and supply chain	Various Guides and advice available – see Links to Key Resources in this report

The Show Must Go On report offers clear evidence and direction for meaningful action on climate change. This issue is bigger than any one of us can tackle alone, and we look forward to sharing this journey to become a pioneering industry through our environmental practices."

MELVIN BENN, FESTIVAL REPUBLIC

THE BEGINNING OF A ROADMAP

A detailed and accessible roadmap will require industry engagement and support, and could provide a structure and approach for effective change. Powerful Thinking, as a not-for-profit body of festivals and stakeholders, could provide to following leadership:

- **Work across the industry and with existing environmental projects/initiatives/campaigns to bring focus, clarity and and direction to aspirations.**
- **Support the development of easy-to-use and up-to-date guides, for example working to bring together existing research sources and guides into a coherent body of advice.**
- **Commission research where there are gaps in knowledge and issues identified by festival organisers**
- **Work with the supply chain on the industry's behalf, for example convening a working group of experts on a specific issue such as festival waste**
- **Provide annual industry reports on progress, share case studies and communications**
- **Reduce the risks of sudden and potentially costly adaptions to legislation**
- **Provide impartial and up-to-date advice to festivals**

As festival organisers we know how to create inspiring experiences. We know how to get things done. And we know how to communicate. Together we can build on this success, and make our events and the industry a pioneering example of responsibility. We can provide leadership for the most important conversation of our time, rather than being left behind. We can make a significant contribution to a future we want our children to live in. Let's do it...

"As political leaders gather in Paris this December for the most important climate change policy negotiations in two decades, this report is a call for the festival industry to take the initiative to craft its own response that builds on existing experience and expertise from within the sector, fostering collective, solutions-driven action on climate change that can be amplified beyond the industry itself."

ALISON TICKELL, JULIE'S BICYCLE

“IN ORDER TO CARRY A POSITIVE ACTION WE MUST DEVELOP HERE A POSITIVE VISION”

Dalai Lama

VISION 2025: FESTIVAL PLEDGE

We aim to achieve a 50% reduction in festival-related GHG emissions by 2025

We, the UK festival industry, are deeply concerned about the potentially irreversible impacts of climate change. We recognise that the increased Green House Gas emissions caused by human activities is affecting the quality of life of millions of people today and has potentially devastating consequences for future generations. Therefore we pledge that we will play an active role in creating a positive future by:

- **Taking action to make our businesses and our industry more environmentally sustainable and actively managing our carbon-related impacts.**
- **Speaking out to our audiences and stake-holders and using our creative voices to contribute to the public narrative about positive change.**

As a participating festival we will put in place measures to achieve this by:

- **Reducing waste where possible and aim for 50% recycling rates.**
- **Reducing reliance on fossil fuels and aiming to reduce diesel consumption by 50% by 2025 compared with 2014 figures.**
- **Working with audiences, suppliers and artists to positively influence travel choices and reduce travel-related emissions.**
- **Working with the supply chain to improve accountability and the sustainability of food sourcing.**
- **Working together as an industry to share experiences (positive and negative) about the changes we make, sharing best practice and working toward industry standards where appropriate.**

We understand that without measuring our impacts, we cannot measure progress. We will endeavour to measure and record our key impacts.

SIGN UP TO THE PLEDGE AT

WWW.POWERFUL-THINKING.ORG.UK/VISION2025

KEY RESOURCES

GENERAL

- Sustainable Event Management: A Practical Guide, Meegan Jones (2014)
- A Greener Festival: www.agreenerfestival.com
- Bristol2015 Green Event Guides: www.bristol2015.co.uk/about/sustainable-event-guides/
- Julies Bicycle: www.juliesbicycle.com

ENERGY

- The Power Behind Festivals Guide, Powerful Thinking: www.powerful-thinking.org.uk
- European Music Energy Efficiency Initiative: www.ee-music.eu
- Festival Fuel Tool, Powerful Thinking: www.powerful-thinking.org/fuel-tool

WATER

- Guide to Water Management at Outdoor Events, Julie's Bicycle (2014): www.juliesbicycle.com/resources/water-management-at-outdoor-events
- Guide to Plastic Free Festivals, RAW Foundation/ Kambe Events (2014): www.rawfoundation.org/making-waves/
- WRAP Guide to saving money through water efficiency: www.wrap.org.uk/content/saving-money-through-resource-efficiency-reducing-water-use

OFFICE MANAGEMENT

- Julies Bicycle Practical Guide: Greening the Office www.juliesbicycle.com

FOOD

- Good Food for Festivals Guide (2013), Sustain: www.sustainweb.org/publications/?id=243
- Love Food Hate Waste awareness campaign: www.lovefoodhatewaste.co.uk
- Eighth Plate festival food salvage, research and awareness project: www.eighthplate.org.uk

WASTE MANAGEMENT

- WRAP Advice for event management sector, including an online waste management tool and guide to recycling: www.wrap.org.uk/category/sector/event-management
- WRAP Cymru Events Recycling Guide: www.wrapcymru.org.uk/sites/files/wrap/Wales%20Event%20Recycling%20Guide.pdf
- Making Waves Plastic-free festival guide, Raw Foundation/Kambe Events: www.festivalinsights.com/wp-content/uploads/Making-Waves-Festival-Guide-Online-FINAL.pdf

REVIEWING AND COMMUNICATING PROGRESS

- Julie's Bicycle Creative Industry Green Tool for measuring impacts: www.juliesbicycle.com/industry-green/ig-tools
- Information about the ISO20121 standard: www.iso20121.org
- A Greener Festival Awards assessment: www.agreenerfestival.com

“...CLIMATE CHANGE CHANGES EVERYTHING. FOR A VERY BRIEF TIME, THE NATURE OF THAT CHANGE IS STILL UP TO US.”

Naomi Klein, 2015