AFTERPARTY
GLOBAL CIRCULAR FESTIVAL SERVICE

Amy *Smith*
Ben *Lovell*
Kiran *Scott de Martinville*

Works Cited

"All Our Eco-Friendly Actions in Detail - We Love Green." We Love Green, 2019, www.welovegreen.fr/all-our-eco-friendly-actions-in-detail/?lang=en. Accessed 13 Dec. 2021.

Alonso, Jesús. "The Rise of Eco-Friendly Music Festivals." Https://Www.vidasostenible.org, 11 July 2017, www.vidasostenible.org/the-rise-of-eco-friendly-music-festivals/. Accessed 13 Dec. 2021.

"FloWater." FloWater, 17 Mar. 2020, www.drinkflowater.com/blog/sustainable-concerts-music-festivals-take-steps-to-go-green/. Accessed 13 Dec. 2021.

"Green Shambala - Shambala." Shambala, 17 Feb. 2020, www.shambalafestival.org/essential-info/sustainability/. Accessed 13 Dec. 2021.

Jones, Nicola. "How to Stop Data Centres from Gobbling up the World's Electricity." Nature, vol. 561, no. 7722, Sept. 2018, pp. 163–166, www.nature.com/articles/d41586-018-06610-y, 10.1038/d41586-018-06610-y. Accessed 13 Dec. 2021.

"Juicy Stats 2019 - a Greener Festival." A Greener Festival, 21 Apr. 2020, www.agreenerfestival.com/consultancy-research/juicy-stats-2019/. Accessed 13 Dec. 2021.

Locker, Melissa. "Music Festivals Are Ushering in an Era of Environmentalism." Rolling Stone, Rolling Stone, 16 Sept. 2021, www.rollingstone.com/culture/culture-features/environmental-music-festivals-1227689/. Accessed 13 Dec. 2021.

"Plastic Festival Waste: Are YOU Doing Enough? | Contemporary Issues in Events, International Hospitality and Tourism Management." Contemporary Issues in Events, International Hospitality and Tourism Management, 13 Nov. 2019, uniofglos.blog/eventsglos/2019/11/13/plastic-festival-waste-are-you-doing-enough/#:~:text=Music%20Festivals%2C%20on%20average%2C%20generate,waste%2C%20abandoned%20tents%20and%20clothing.. Accessed 13 Dec. 2021.

Pretty Good Digital. "Glastonbury Festival - Our Green Policies." Glastonbury Festival - 21st-25th June, 2017, 2021, www.glastonburyfestivals.co.uk/information/green-glastonbury/our-green-policies/. Accessed 13 Dec. 2021.

"Sustainability & Architecture - Terraforma." Terraforma, 16 Feb. 2021, www.terraformafestival.com/sustainability-architecture/. Accessed 13 Dec. 2021.

"Sustainability - DGTL Amsterdam 2022 – 16-17 April." Dgtl.nl, DGTL, 2020, dgtl.nl/sustainability. Accessed 13 Dec. 2021.

"Sustainability - Øyafestivalen - Øya 2020." Øyafestivalen - Øya 2020, 2020, oyafestivalen.no/en/environment/sustainability/. Accessed 13 Dec. 2021.

TechTarget Contributor. "Blockchain Storage." SearchStorage, TechTarget, 2017, searchstorage.techtarget.com/definition/blockchain-storage#:~:text=Blockchain%20storage%20is%20a%20way,found%20in%20a%20centralized%20system.. Accessed 13 Dec. 2021.

Yirka, Bob. "Gecko Inspired Adhesive Can Attach and Detach Using UV Light." Phys.org, Phys.org, 19 Jan. 2017, phys.org/news/2017-01-gecko-adhesive-detach-uv.html. Accessed 13 Dec. 2021.
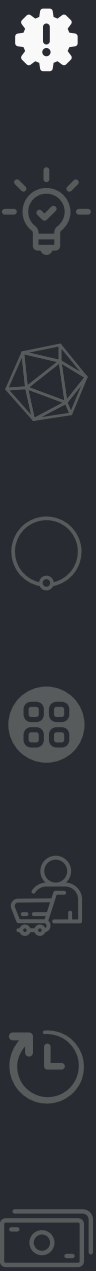
THE PROBLEM

In 2019, the UK festival industry was estimated to be worth over £2.6 billion. Over a third of the UK population has attended a festival since 2016. However, the rising popularity of festivals means the environmental impact of these live music events has hit exponential levels. Companies and brands across the events sector now risk being left behind in the midst of social change regarding climate impact and waste levels

GENERAL STATISTICS

3.17 MILLION
UK FESTIVAL GOERS ANNUALLY

ANNUAL WASTE
23,500 TONS 68%
SENT TO LANDFILL

5 MILLION LITRES
FUEL USED BY UK FESTIVAL INDUSTRY ANNUALLY

SYSTEM ISSUES

- Festivals often rely on a large proportion of volunteers to aid in clean-up
- Festival-goers are unaware of the lack of recyclability of current festival consumables
- Festival-goers are not utilising products for their intended lifespan
- Festival-goers are unaware of the environmental impacts leaving consumables behind (i.e clean-up and then to landfill)

RUNS FOR
5 DAYS

OVER
200,000
ATTENDEES

PRODUCING A CITY-SIZED
2000 TONS
OF POTENTIAL WASTE

CO2

AS WELL AS
27,397 TONS
OF CO2e

6500 SLEEPING BAGS

2200 CHAIRS

5500 TENTS

LEFT BEHIND AT THE CAMPSITE EVERY YEAR

£780,000
COST OF DISPOSAL

VOLUNTEER RECYCLING CREW OF **1300**

Glastonbury runs a Green Traveller scheme to encourage travel by public transport or bicycle, offering prizes and free food vouchers to those who participate. An estimated *40,000* people, *23%* of festival goers, will travel to Glastonbury by coach or train this year.

200,000
GLASTONBURY

CASE STUDY: GLASTONBURY

Set in 900 acres of countryside, Glastonbury calls itself "the largest green-field music and performing arts festival in the world".

The UK hosts the highest number of festivals in the world, with 27 major music events taking place in 2019

Due to its size and notoriety, Afterparty has chosen to analyse it and demonstrate how its product system service would function in collaboration with the festival.

540,000
POL'N'ROCK

2,400,000
DONAUINSELFEST

565,000
SZIGET

120,000
MAWAZINE

HMW: design a centralised system within the festival environment to distribute and recover products that need to be recycled

HMW: design a strategy to inform festival-goers on how their actions have an environmental impact and motivate them to act sustainably

HMW: Incentivise festovals financially or through legislation to adopt greener practices

TRANSPORT RAW MATERIALS TO MANUFACTURING LOCATION

PRE CONSUMPTION

SOURCING RAW MATERIALS
All consumables food at the festival is organic & vegetarian, its also based on local footplans seasonal and local

LOCAL PRODUCT MANUFACTURE
Afterparti works with local manufacturers to reduce its products overall carbon footprint

SMART ENERGY PLAN
Solar powered battery systems to achieve carbon neutrality. Renewable energy is used throughout product manufacture and transportation of raw materials

SUBSYSTEM: RFID WRISTBANDS

RESOURCE: Recycled PET and RFID chip

INFRASTRUCTURE: Recycled PET woven into wristband with RFID implanted in it

SUBSYSTEM: REUSABLE CARDBOARD TENTS

RESOURCE: Recycled wood pulp

INFRASTRUCTURE: Pulp made into cardboard and corrugated

INFRASTRUCTURE: Cardboard cut and layered together

INFRASTRUCTURE: Packed into lorries and delivered to festival location

DISTRIBUTION CENTRE

INFRASTRUCTURE: Sent to festival-goers pre-festival

RESOURCE: Tents provided to campers
VALUE: Festival goers fund sustainable tent prices, through ticket price. Incentivised to act sustainably by prospect of monetary

EQUIPMENT RETURNED AT FESTIVAL END
Festival goer hands back tent to distribution point. Wristband responsibly the consumer has been throughout the festival

ACTOR: Consumer must scan wristband to get a tent.
DATA: Consumers personal details logged via wristband scan so they are responsible for looking after the tent

VALUE: Festival goer funds replacement of tent if damage is due to irresponsible behaviour
DATA: Consumer logs wristband this damage

ECO TRANSPORT TO FESTIVAL
Afterparti consult the festival councils to ensure the festival is accessible by public transport such as electric buses, electric bikes or car sharing

POST CONSUMPTION

RESOURCE: Wristbands collected as People exit

RESOURCE: Tent material reclaimed

RENTED CONSUMER USES EQUIPMENT FOR DURATION OF FESTIVAL
Festival employees are needed to man distribution points. All consumables such as water or food are distributed in biodegradable / reusable packaging, with multiple refill points found throughout the festival

FESTIVAL ITEM DISTRIBUTION CENTRES AT EACH CAMP
Since customers arrive empty handed, all FMCGs and equipment are distributed the festival, are handed in the back of the consumer does not ticket price balanced the fact that the higher spend money on anything beforehand, not even transport

CONSUMPTION

POST-FESTIVAL CLEANUP
Inevitably some cleanup is still required albeit on a much smaller scale than Glastonbury's usual operation. Less volunteers and material sorting points needed.

EQUIPMENT TRANSPORTED TO MATERIAL CENTRE
For reuse, recycling and refurbishment. Some transport lines are used so lorries don't leave empty handed

DATA: Barcode on tent can be scanned to see which festival goer left it behind
VALUE: Clean-up costs can be partially recouped through fines issued to those who left tent behind

TENT MATERIALS AND SORTED RECYCLED AND SORTED BASED ON FIBRE QUALITY

VALUE: Recycled material can be sold on to recoup some of the cost of the scheme.
RESOURCE: Recycled material reused for next years tents

VALUE: Wristbands don't need to be repurchased every year
RESOURCE: Wristbands ready for reuse next year

WRISTBANDS SORTED TO REMOVE AND REPLACE DAMAGES
Some wristbands may be damaged/faulty on return, depending on fabric quality - materials recycled or sent to proper composting facility after chip removed

WRISTBANDS ARE CLEANED AND ANY DATA REMOVED FROM BAND READY FOR NEXT YEAR'S FESTIVAL
Data wiped from band but still stored on P2P network

OUR SOLUTION

The Afterparty product system service has one main goal: Help existing music festivals transition to becoming completely circular. Everything from travel, electricity generation and the At an afterparty partner festival, you turn up completely empty handed and all equipment and consumables are rented out to you. This gives the festival organisers complete control over repairing, reusing and recycling FMCGs completely closing the resource loop. This page focuses on the general system overview, as well as two sub-systems: Reusable cardboard tents and RFID wristband.

EXISTING SOLUTIONS - KARTTENT

KarTent is a revitalisation service operating under the "reclaim for recycling" scope. Their solution to festival tent waste is a completely recyclable tent, made from cardboard that is layered for waterproofing and can sleep 2 people.

KARTENT
CIRCULAR PRODUCTS

Where we have innovated:
- **Encouraging Sustainable Behaviour**
The festival goer "owns" the tent through the use of the RFID chip in the wristband, allowing for users to be held accountable for properly disposing of the tent and reward them if they do.
- **Allowing the scheme to be sponsored by brands in order to make the scheme accessible to all** festival-goers. Currently, using a 2-person Kartent at Glastonbury would cost the user a minimum of £90 pounds. However, through Afterparty and brand subsidies, our system will only cost the user £5. Brand sponsorships and partnerships means Afterparty would be able to provide the user with additional rewards for using our sustainable scheme.
- **A connected solution for the future**
The use of the RFID chip in the festival wristband and associated app will allow for an overall smoother user experience by allowing the festival-goer to keep track of festival events, rented items, pick-up and disposal depots, and reward points all in one place.
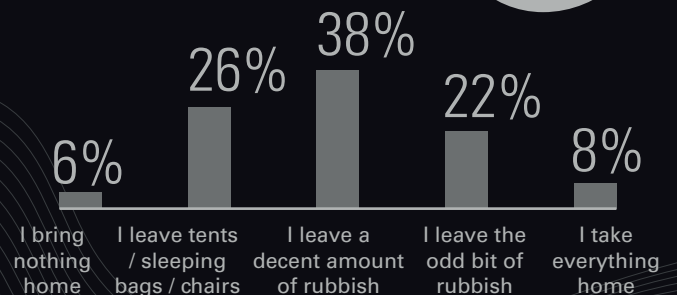
USER SURVEY

We reached out to a group of 48 UK festival goers between the ages of 17 and 29 to see what they though about our proposed system and if they'd be willing to use it.

WOULD YOU BE WILLING TO SPEND MORE ON A FESTIVAL TICKET IF IT MEANT ALL YOUR EQUIPMENT CAME INCLUDED?
YES 74%

BEING HONEST, HOW MUCH DO YOU CLEAN UP AFTER A LONG FESTIVAL WEEKEND?

I bring nothing home	I leave tents / sleeping bags / chairs	I leave a decent amount of rubbish	I leave the odd bit of rubbish	I take everything home
6%	26%	38%	22%	8%

IF YOU WERE TRAVELLING LIGHTER TO A FESTIVAL, ARE YOU MORE LIKELY TO USE SOME FORM OF PUBLIC TRANSPORT?
YES 68%

HOW LIKELY ARE YOU TO INCREASE YOUR SUSTAINABLE BEHAVIOUR IF IT MEANT REWARDS IN AND OUTSIDE THE FESTIVAL?
88% AVERAGE
Not a chance — Definitely
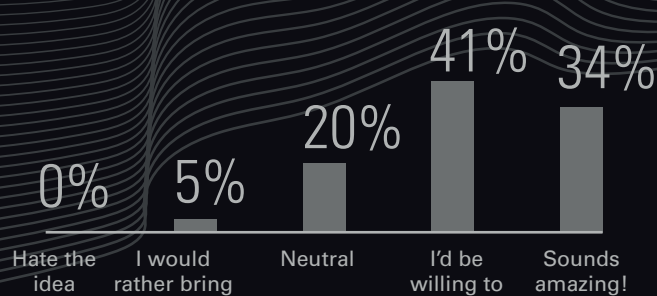
WHAT ARE YOUR THOUGHTS ON STAYING IN AN AFTERPARTY CARDBOARD TENT, CONSIDERING ITS EASY TO PITCH AND WATERPROOF?

Hate the idea	I would rather bring my own	Neutral	I'd be willing to try	Sounds amazing!
0%	5%	20%	41%	34%

CO2 Footprint (kg)

- Existing 2 man nylon tent
- Afterparty couples tent

%CHANGE: -100 to +100
0%
-64%

Axis: 12, 10, 8, 6, 4, 2, 0, -2, -4, -6

Material, Manufacture, Transport, Use, Disposal, EoL potential

Polymer tents have a much larger carbon footprint, especially when considering 35% of tents are left behind

Embodied Energy (MJ)

- Existing 2 man nylon tent
- Afterparty couples tent

%CHANGE: -100 to +100
0%
-38%

Axis: 300, 200, 100, 0, -100, -200

Material, Manufacture, Transport, Use, Disposal, EoL potential

Polymer based manufacturing processes are extremely energy intensive compared to card

COUPLES TENT
Fits 1 - 2

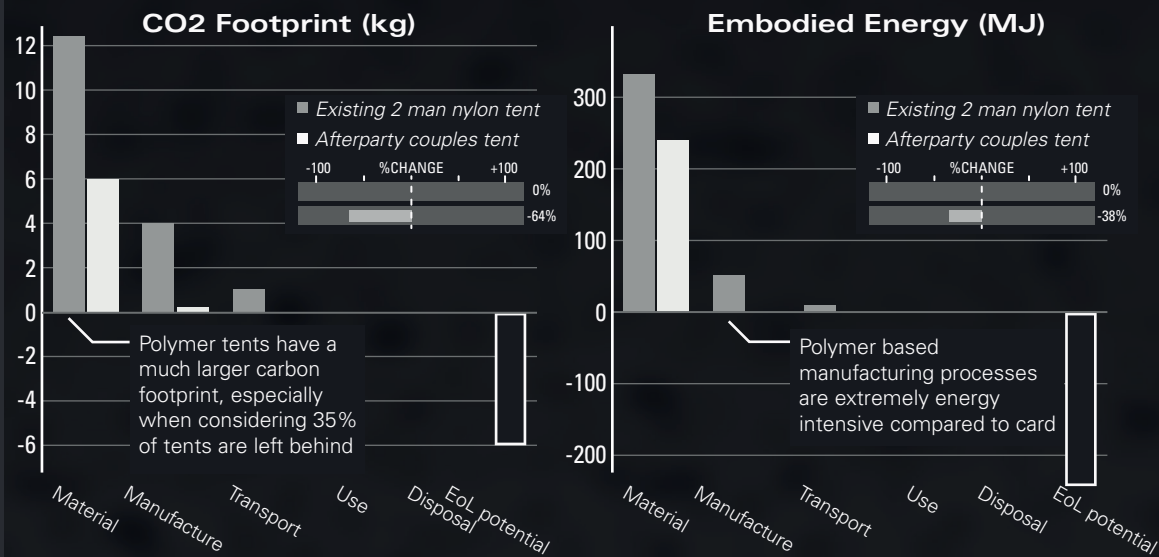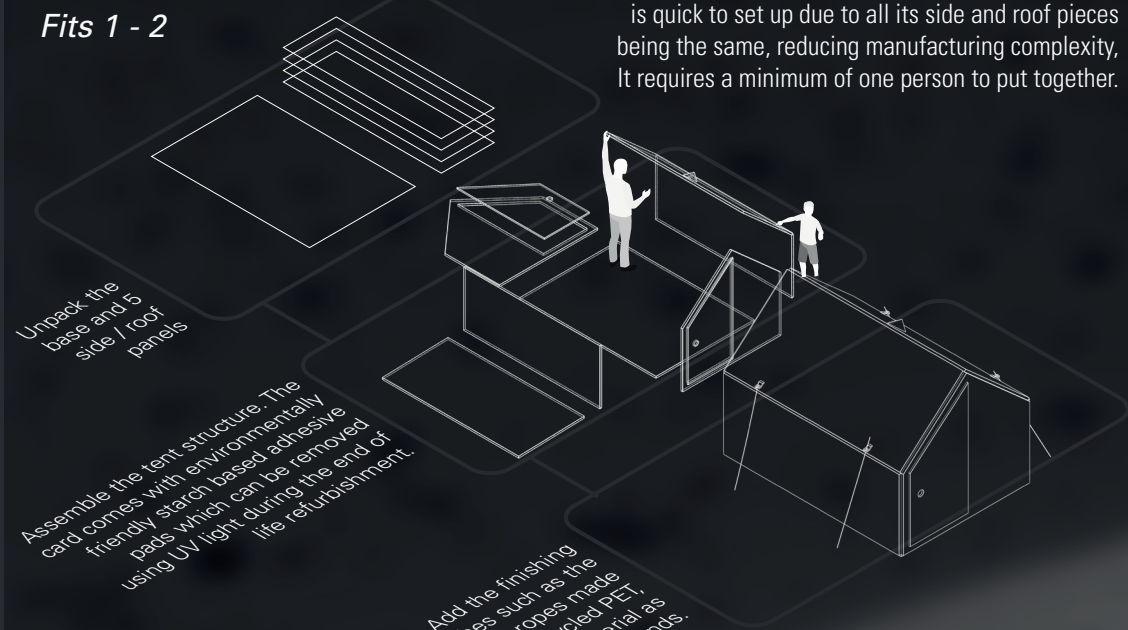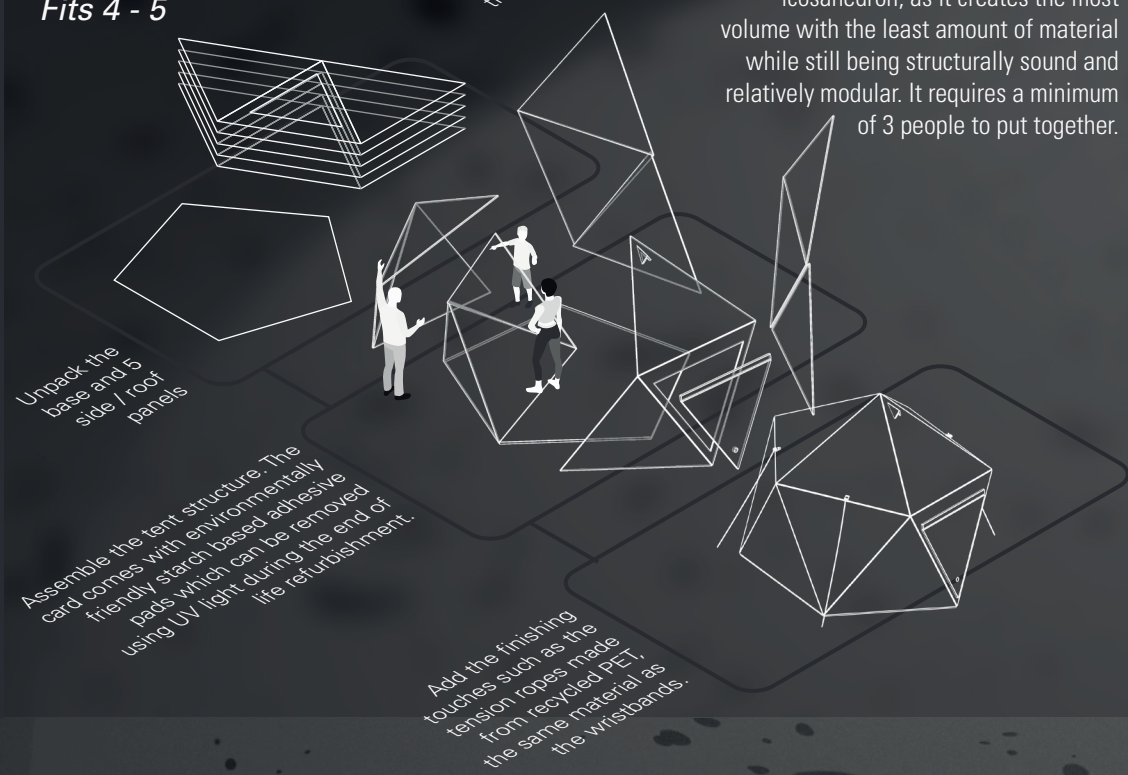Based off a traditional tent design, this 2 person tent is quick to set up due to all its side and roof pieces being the same, reducing manufacturing complexity, It requires a minimum of one person to put together.

Unpack the base and 5 side / roof panels

Assemble the tent structure. The card comes with environmentally friendly starch based adhesive pads which can be removed using UV light during the end of life refurbishment.

Add the finishing touches such as the tension ropes made from recycled PET, the same material as the wristbands.
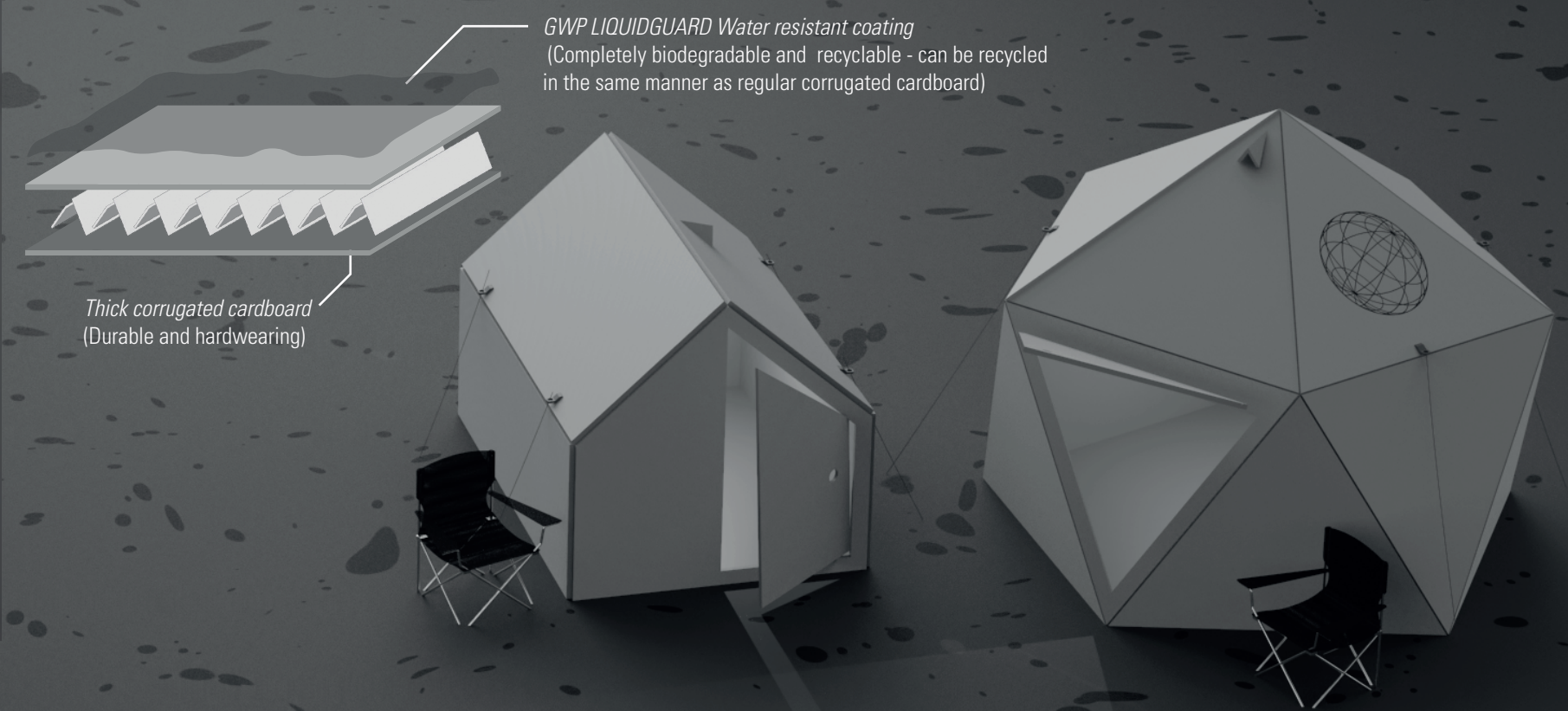
FAMILY TENT
Fits 4 - 5

The design of this tent is based of an icosahedron, as it creates the most volume with the least amount of material while still being structurally sound and relatively modular. It requires a minimum of 3 people to put together.

Unpack the base and 5 side / roof panels

Assemble the tent structure. The card comes with environmentally friendly starch based adhesive pads which can be removed using UV light during the end of life refurbishment.

Add the finishing touches such as the tension ropes made from recycled PET, the same material as the wristbands.

Small backwindow keeps tent fresh

Cardboard blocks sunlight, ensuring the tent stays dark and fresh

Tent is secured to the ground through tension

2700mm
3000mm
3200mm
1800mm
1800mm
2500mm

Extra rainflaps ensure that interior stays dry

SUBSYSTEM1
REUSABLE CARDBOARD TENTS

Common festival consumer goods such as drink cups and food packaging are fairly straightforward to redesign for the Afterparty PSS, equipment such as tents are more involved, and have a more significant . Our solution is a series of flat-pack cardboard tents designed to be reused for multiple events. Made with sustainable materials, designed for disassembly and standardised components. The tents are distributed and collected at various dedicated spots throughout the festival. Users scan their wristband to rent out a tent then return it once the festival is over. This rental system reduces the overall cost to the user, and the price is included in their festival ticket.

AFTERPARTY GLOBAL CIRCULAR FESTIVAL SERVICE

Cardboard is a lightweight material meaning the user can easily drag it to their campsite. Lots of distribution points mean that the user won't have to move it far

GWP LIQUIDGUARD Water resistant coating
(Completely biodegradable and recyclable - can be recycled in the same manner as regular corrugated cardboard)

Thick corrugated cardboard
(Durable and hardwearing)

RFID WRISTBAND

33 1/3 RPM
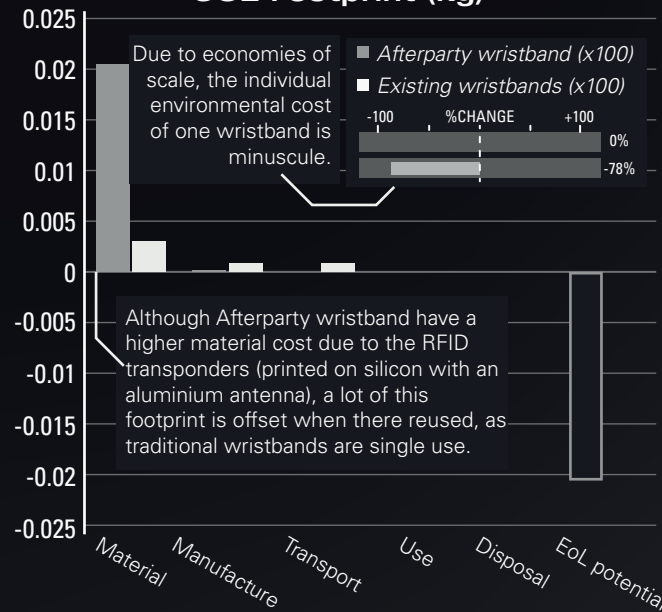
AFTERPARTY
GLOBAL CIRCULAR FESTIVAL SERVICE

ALLOWING USERS TO TRACK THEIR EQUIPMENT RENTAL AND OVERALL SUSTAINABILITY

③ Recycled PET fabric

VIP 18.11 —
2X18
VIP 18.11 —
GRN 18.11—
SA 18.11 —

LCE-based adhesive

② RFID Transponder

CO2 Footprint (kg)

Afterparty wristband (x100)
Existing wristbands (x100)

-100   %CHANGE   +100
0%
-78%

Due to economies of scale, the individual environmental cost of one wristband is minuscule.

Although Afterparty wristband have a higher material cost due to the RFID transponders (printed on silicon with an aluminium antenna), a lot of this footprint is offset when there reused, as traditional wristbands are single use.

(x-axis: Material, Manufacture, Transport, Use, Disposal, EoL potential)

Embodied Energy (MJ)

Afterparty wristband (x100)
Existing wristbands (x100)

-100   %CHANGE   +100
0%
-37%

Existing festival wristbands are made of cotton, which has an intensive manufacturing process due to the large amount of water used.

Local manufacture ensures Afterparty's wristbands don't have to travel 18,000+ km by ocean freight from Chinese manufacturing cities to the UK.

(x-axis: Material, Manufacture, Transport, Use, Disposal, EoL potential)

WRISTBAND ATTACHED AT BEGINNING OF FESTIVAL

USER SCANS WRISTBAND WHEN RENTING OUT EQUIPMENT SUCH AS TENT OR REUSABLE CUPS

RENTAL LOGGED ONTO DATABASE

USER CAN CHECK WHAT ITEMS THEY'VE RENTED BY SCANNING WRISTBAND WITH SMARTPHONE
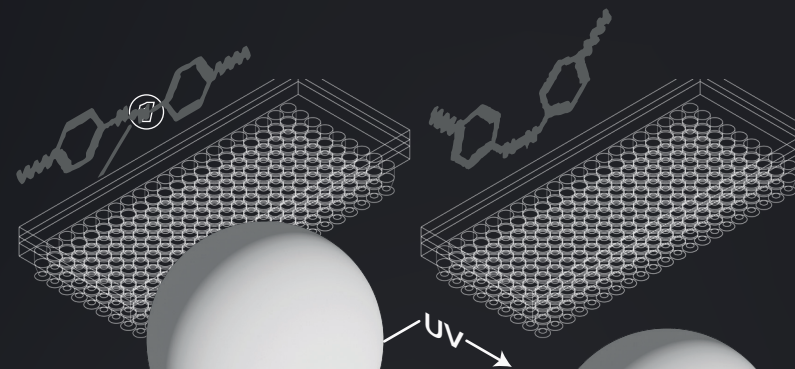
USER SCANS WRISTBAND WHEN RETURNING EQUIPMENT

USER GAINS AFTERCOINS AND DEPOSIT GETS RETURNED AUTOMATICALLY

WRISTBANDS DETACHED WITH UV LIGHT AT THE END OF FESTIVAL

WRISTBANDS CLEANED AND REFURBISHED READY FOR NEXT EVENT, DAMAGED WRISTBANDS RECYCLED

---

① UV

The Liquid Crystal Elastomer based adhesive is a three-layer tape—on top are mushroom-shaped pillars with sticky flat tops that actually touch the surface of the target material, i.e., PET. The pillars are embedded in a layer of polydimethylsiloxane, which is in turn connected to a layer of azobenzene liquid crystals. At the bottom, there is another layer of polydimethylsiloxane. The adhesive works because the azobenzene crystals are sensitive to UV light—they change position relative to one another when a UV light is aimed at them. The upper material allows the adhesive to stick to the PET surface, but only when it is aligned properly, which happens in the absence of UV light. Aiming a UV light at the adhesive causes it to curl slightly pulling the sticky parts from the PET surface, allowing the adhesive to release. Varying the amounts of UV light applied allows for tuning the degree of adherence required.

This technology will allow Afterparty to attach and detach the wristbands through the use of a UV torch, allowing efficient retrieval of wristbands post festival and ensuring they don't accidentally fall of when used.

50 µm
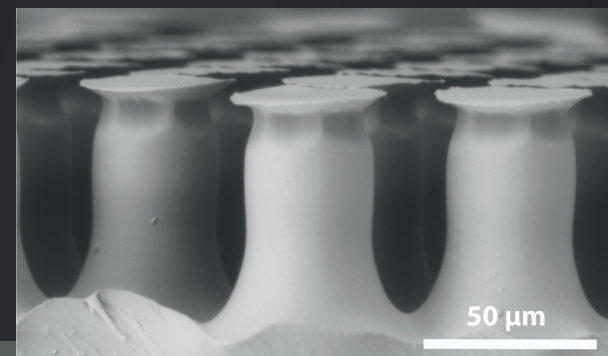
Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track tags attached to objects. When triggered by an electromagnetic interrogation pulse from a nearby RFID reader device, the tag transmits digital data, in this case an identifier number attached to a record of equipment renting stored in a database. Passive tags are powered by energy from the RFID reader's interrogating radio waves, meaning they don't require an internal power source.

②

READER OR INTERROGATOR
TAG OR TRANSPONDER
ANTENNA
COMPUTER
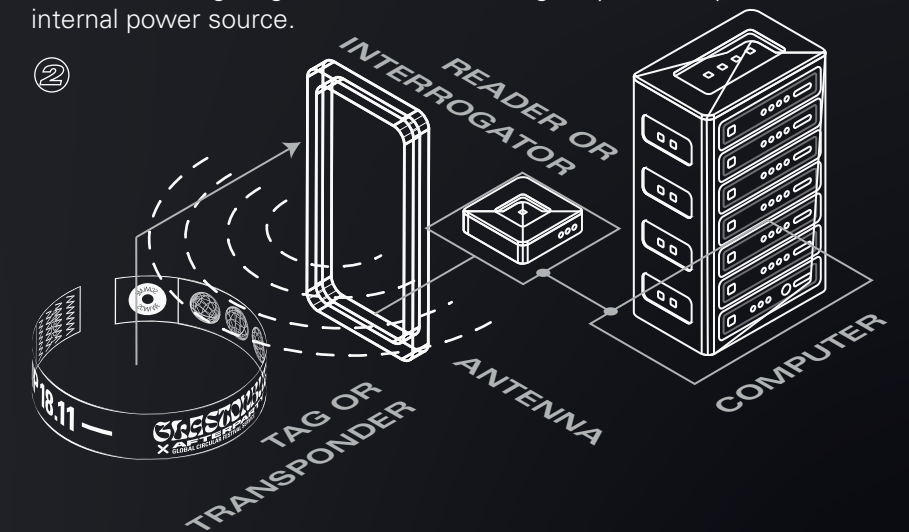
Recycled polyethylene terephthalate (PET) recycled from plastic bottles. Whilst more and more consumers are becoming aware of the negative use of plastic, businesses are attempting to adapt their processes in order to appeal to this market, but also as part of their corporate social responsibility. Afterparty's recycled wristbands are a mutually beneficial alternative to traditional plastic wristbands. Being good for the planet doesn't mean sacrificing on quality. The wristbands will last the entirety of the event, but also long after allowing refurbishment and reuse for future events.

③

MELTED PLASTIC IS SPUN INTO THREAD
BOTTLES ARE CLEANED
BOTTLES ARE SHREDDED INTO PELLETS
PELLETS ARE CRUSHED & MELTED
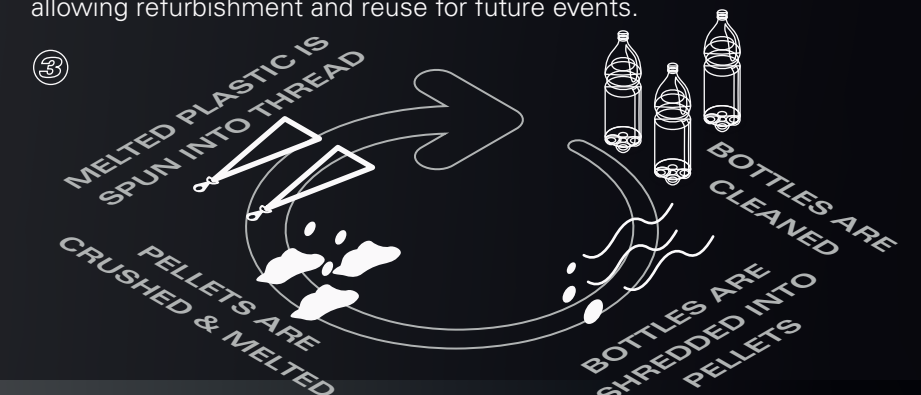
AFTERPARTY
GLOBAL CIRCULAR FESTIVAL SERVICE

Monday, 21 May
London, United Kingdom

Search event...

22 JUN

GLASTONBURY FESTIVAL
♫ Music   🕑 07:00PM

26 JUN

TOUCHPOINT: Users can book their all-equipment-included tickets directly from inside the app. A social aspect allows them to see who of their friends are going and book tickets together

GLASTONBURY FESTIVAL

Glastonbury is back and its bigger, louder and greener than ever

♫ Music   🕑 07:00PM

Pilton, Sommerset, England

Ben and 2605 others are attending

Book ALL//INCLUSIVE Tickets.

The Afterparty app bring all the aspects mentioned into one user friendly and intuitive package.

TOUCHPOINT: Most modern day smartphones have built in rfid scanners allowing the user to scan their wristband and get a live update on their equipment

MY EQUIPMENT

Scan your bracelet to check the status of your equipment

RETURNED

ITEM
4 PERSON TENT

RETURN IN 3:11:00
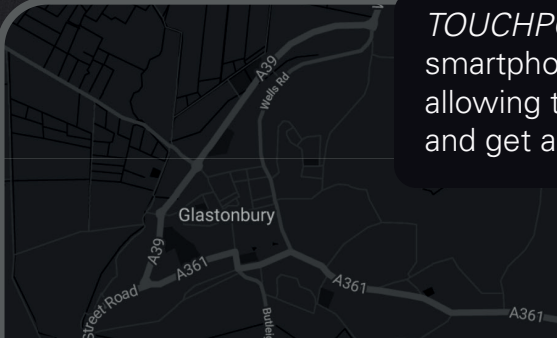

TOUCHPOINT: As well as getting their deposit back, exclusive discounts and deals with other brands will serve as further motivation to the user

482
AFTERCOINS

2.1kg
CO2 SAVED

REWARDS

Uber Eats — **30% OFF** 50 AFTERPOINTS

ZARA — **FREE SHIPPING** 10 AFTERPOINTS

HONEST BURGERS — **50% OFF** 500 AFTERPOINTS

GAIL's BAKERY — **3 FREE COFFEES** FREE

9,000 terawatt hours (TWh)

SUSTAINABLE DATA STORAGE

20.9% Of projected electricity demand

Widely cited forecasts suggest that the total electricity demand of information and communications technology will accelerate in the 2020s, and that data centres will take a larger slice

- ■ **Networks (wireless and wired)**
- □ **Production of ICT**
- ■ **Consumer devices**
- ■ **Data centres**

2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030

Global electricity demand

Other demand

2015

Best case 2030

Expected 2030

0   40,000 TWh

In order to tackle Data centre's growing environmental impact, Afterparty will implement a blockchain storage solution. Blockchain storage is a way of saving data in a decentralized network, which utilizes the unused smartphone disk space of Afterparty users across the world to store files. The decentralized infrastructure is an alternative to centralized cloud storage and can solve many problems found in a centralized system, most importantly reducing the environmental impact of the data up to 90%.

Blockchain relies on distributed ledger technology (DLT). The DLT acts as a decentralized database of information about transactions (such as ticket purchases or equipment hire) between various Afterparty users. Operations fill the DLT in chronological order and are stored in the ledger as a series of blocks. An interconnected chain is formed between blocks with each one referring to the block before it, thus creating a blockchain. The more storage a user donates, the more Aftercoins they receive.

Afterparty P2P-network

Existing server-based networks

SHA256 LEDGER

Block 1 HEADER	Block 2 HEADER	Block 3 HEADER
Hash of previous header	Hash of previous header	Hash of previous header
Merkle Root	Merkle Root	Merkle Root

Block 1 TRANSACTIONS	Block 2 TRANSACTIONS	Block 3 TRANSACTIONS
0x3C[[User ID] [Equipment ID] [Rent Time] [Return Flag] 0x3D[[User ID] [Equipment ID] [Rent Time] [Return Flag]	0x3C[[User ID] [Equipment ID] [Rent Time] [Return Flag] 0x3D[[User ID] [Equipment ID] [Rent Time] [Return Flag]	0x3C[[User ID] [Equipment ID] [Rent Time] [Return Flag] 0x3D[[User ID] [Equipment ID] [Rent Time] [Return Flag]

A block is pushed to the network every 5 minutes, with each block containing 500 rental transactions (1 MB).

USER JOURNEY

We tracked a theoretical persona's journey through Glastonbury's existing festival initiatives, and compared it to using Afterparty's all inclusive rental system.

KEY INSIGHTS

- Drunken and tired behaviour makes it hard to predict peoples actions, so powerful motivators such as the fining system is needed to encourage sustainable actions
- A large amount of mobile distribution and retrieval centres are necessary for the solution to work
- Doing a pilot test at a single campsite or smaller festival is essential to collect user behavioural data.

Festival-goer leaves tent at festival

Disposal locations for tents are limited or not available at all.

Festival-goer doesn't want to carry a broken/muddy tent home

The average festival-goer falsely believes that these tents are recyclable which they are not.

If their tent breaks early on, there is not a replacement service available.

Tent likely to break, or get dirty during festival duration

Though requiring some skill to do, people often enjoy the process of pitching tents with friends.

Current tents are difficult to pitch whether on your own or with help.

They pitch the tent and enjoy the festival

Tent must be transported alongside user's other belongings

Users often struggle to find a free parking space around the festival and are often forced to pay a large amount of money for one at the festival.

Many people will carpool together for the journey, lessening environmental impact

Because of the size and weight of these tents, many users will be forced to drive to the festival rather than use public transport, adding to the associated emissions of the festival

These cheap tents are made from equally cheap materials and are liable to breaking.

Festival-goers purchase a cheap tent online

Users can select purchase the tent size they need

Many users will opt for cheap tents (around £25-£30) as they don't want to invest in

OVERALL SENTIMENT

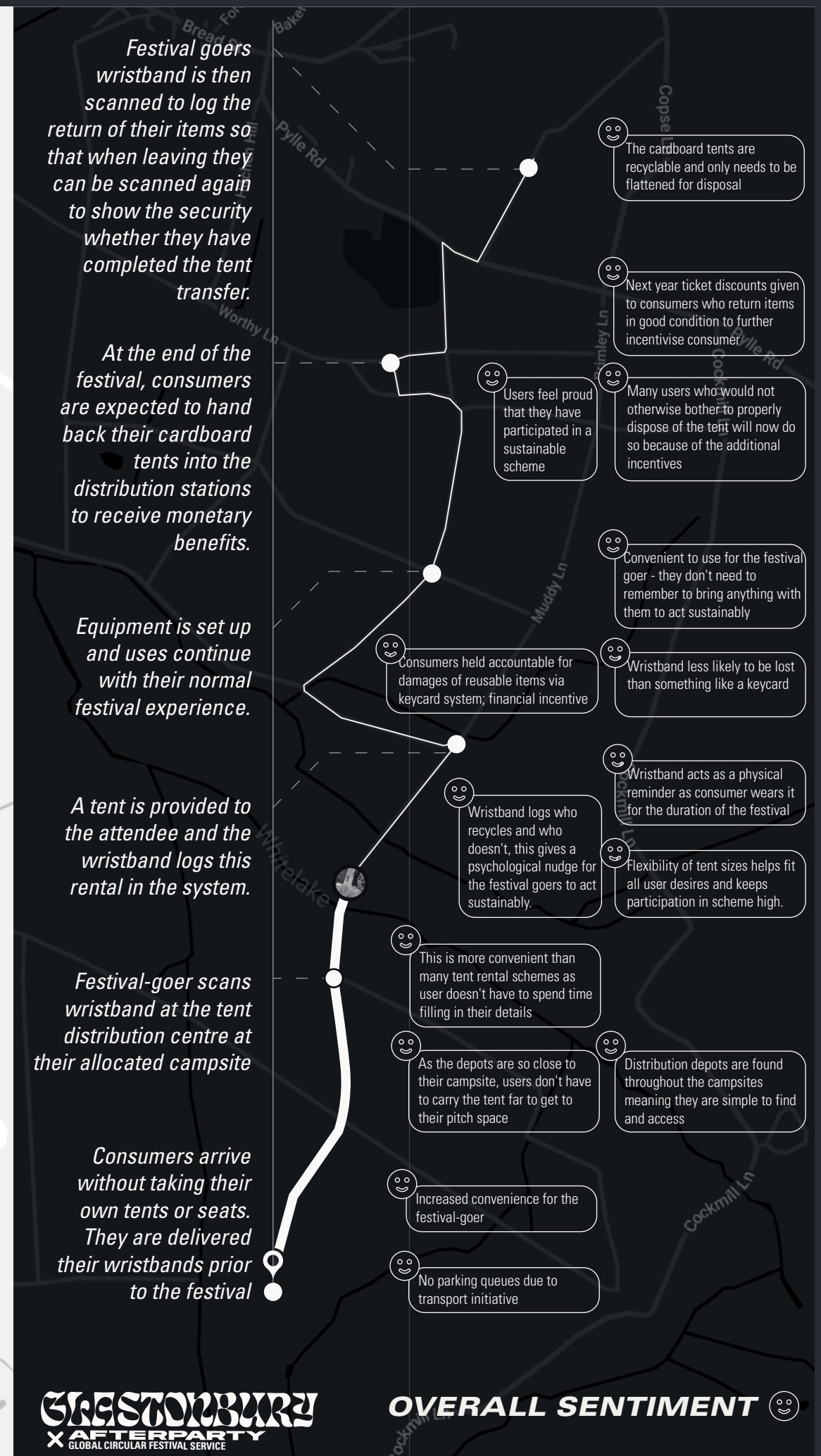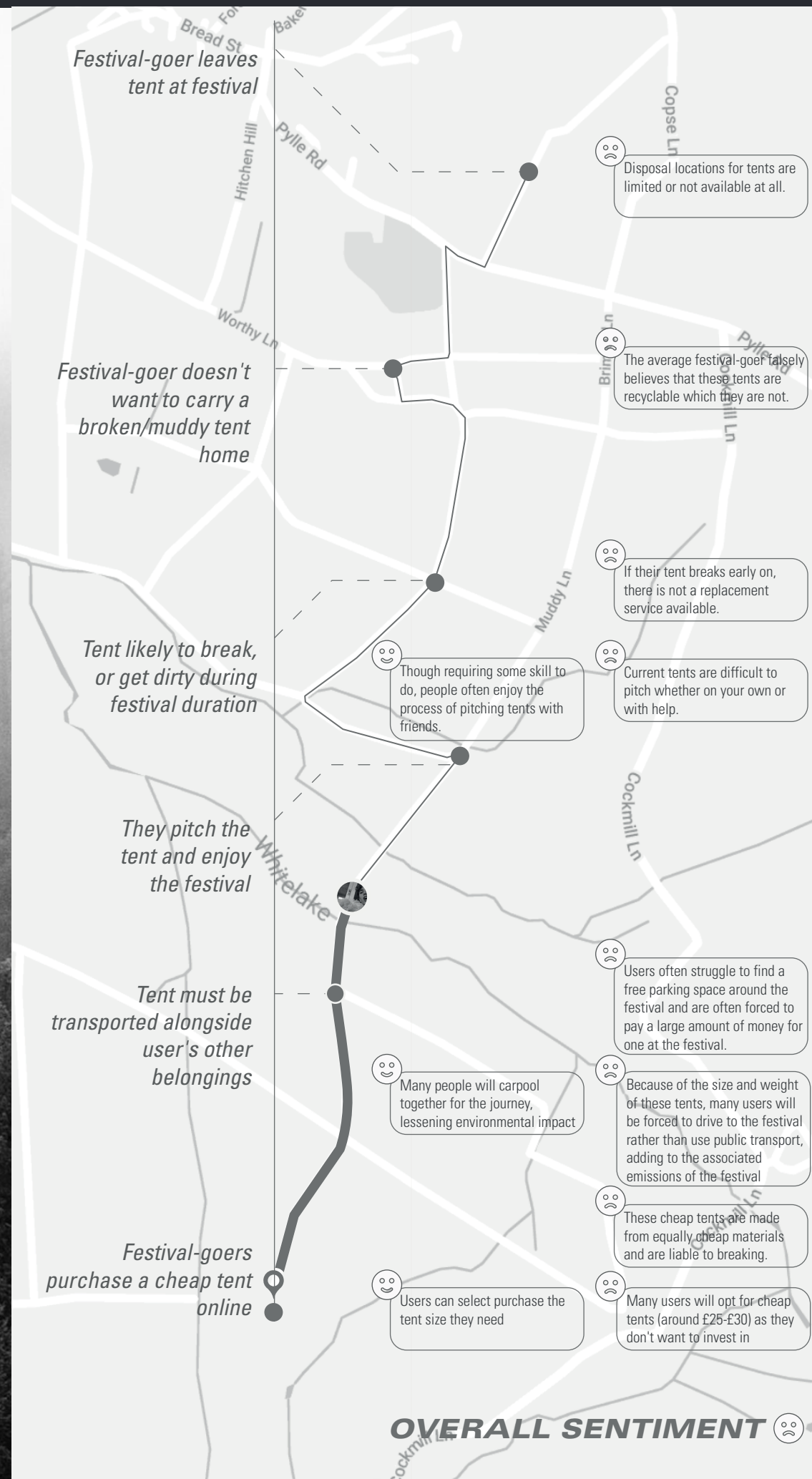Festival goers wristband is then scanned to log the return of their items so that when leaving they can be scanned again to show the security whether they have completed the tent transfer.

At the end of the festival, consumers are expected to hand back their cardboard tents into the distribution stations to receive monetary benefits.

Equipment is set up and uses continue with their normal festival experience.

A tent is provided to the attendee and the wristband logs this rental in the system.

Festival-goer scans wristband at the tent distribution centre at their allocated campsite

Consumers arrive without taking their own tents or seats. They are delivered their wristbands prior to the festival

The cardboard tents are recyclable and only needs to be flattened for disposal

Next year ticket discounts given to consumers who return items in good condition to further incentivise consumer

Users feel proud that they have participated in a sustainable scheme

Many users who would not otherwise bother to properly dispose of the tent will now do so because of the additional incentives

Convenient to use for the festival goer - they don't need to remember to bring anything with them to act sustainably

Consumers held accountable for damages of reusable items via keycard system; financial incentive

Wristband less likely to be lost than something like a keycard

Wristband logs who recycles and who doesn't, this gives a psychological nudge for the festival goers to act sustainably.

Wristband acts as a physical reminder as consumer wears it for the duration of the festival

Flexibility of tent sizes helps fit all user desires and keeps participation in scheme high.

This is more convenient than many tent rental schemes as user doesn't have to spend time filling in their details

As the depots are so close to their campsite, users don't have to carry the tent far to get to their pitch space

Distribution depots are found throughout the campsites meaning they are simple to find and access

Increased convenience for the festival-goer

No parking queues due to transport initiative

OVERALL SENTIMENT

FUTURE SCENARIO
SHARING AND CARING IN A CONNECTED WORLD

In a world where wasteful companies are socially condemned, a festival rental culture is born. It is no longer the norm to purchase cheap consumables as the convenience of rental schemes has caught on. Festival-goers no longer desire to buy their own cheap tents when they can simply use the one provided at the festival for an overall lower price for the consumer. Consumer responsibility is encouraged through collection of user data throughout the festival and this data is used to continually refine the Afterparty system and improve user experience.
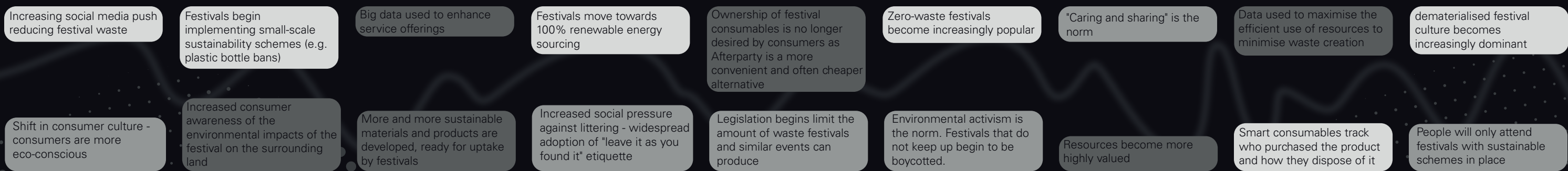
CORPORATE SOCIAL RESPONSIBILITY

Currently, the public brand image of many festivals is tainted by the waste and environmental damage they leave behind. The implementation of sustainable and environmentally friendly schemes such as Afterparty will help improve their environmental reputation which can help to:
- Create a stronger brand image, recognition, and reputation
- Attract investors as many are more willing to support an environmentally conscious business
- Improve the festival's standing within the local community
- Increase customer loyalty and overall sales

■ TRENDS
■ SIGNALS
■ DRIVERS

TIME HORIZON

| Increasing social media push reducing festival waste | Festivals begin implementing small-scale sustainability schemes (e.g. plastic bottle bans) | Big data used to enhance service offerings | Festivals move towards 100% renewable energy sourcing | Ownership of festival consumables is no longer desired by consumers as Afterparty is a more convenient and often cheaper alternative | Zero-waste festivals become increasingly popular | "Caring and sharing" is the norm | Data used to maximise the efficient use of resources to minimise waste creation | dematerialised festival culture becomes increasingly dominant |

| Shift in consumer culture - consumers are more eco-conscious | Increased consumer awareness of the environmental impacts of the festival on the surrounding land | More and more sustainable materials and products are developed, ready for uptake by festivals | Increased social pressure against littering - widespread adoption of "leave it as you found it" etiquette | Legislation begins limit the amount of waste festivals and similar events can produce | Environmental activism is the norm. Festivals that do not keep up begin to be boycotted. | Resources become more highly valued | Smart consumables track who purchased the product and how they dispose of it | People will only attend festivals with sustainable schemes in place |

IMPLEMENTATION PLAN

2021 *Small-scale pilot festival roll-out of the Afterparty product-service system*

2026 *Scheme rolled out to multiple medium-sized festivals*

2031 *Large scale festivals (e.g. Glastonbury, Board masters) begin*

2036 *Most major UK festivals partner with Afterparty*

| Finances for the scheme finalised (tent replacement prices, fine prices etc.) | Data from pilot schemes used to improve forecast accuracy and prevent excess inventory | Data used to optimise the supply chain network | Expansion of manufacture and disposal facilities | Continual product innovation to move towards increased sustainability of materials, manufacture and end-of-life | Continued collection of user data helps inform company decisions and product innovation. | Local manufacturing and recycling centres constructed to reduce environmental impact of transportation | Any un-used consumables or consumables returned in good condition from one festival can be shared to the next | Reusable, durable and, at end-of-life, easily recyclable tents introduced into the scheme alongside the cardboard tents | Afterparty now cycles all tents between festivals throughout the year to minimise waste. |

AFTERPARTY
GLOBAL CIRCULAR FESTIVAL SERVICE

BUSINESS FEASIBILITY

A product-service system such as afterparty must be feasible for real world applications in order make a positive environmental and social impact. Festival organisers must be financially incentivised to choose this scheme over existing models available in the market.

Afterparty has the potential to almost entirely fund itself through numerous income streams and, due to the reduction in cleanup costs, may even increase overall festival profits. Through the running of pilot events, some adjustments to the financial elements of the system may need to be made (e.g. tent replacement costs, fines etc.) to guarantee the festival does not lose money through the implementation of the scheme whilst also ensuring the festival-goers are still incentivised understand how important it is to treat the land with respect, and to stop living a disposable lifestyle.

AN INNOVATIVE SOLUTION

Though rental schemes are nothing new, Afterparty's integrated resource flow is something yet to be attempted by festivals as big as Glastonbury. Traditionally, consumers have had to pay a premium for convenience

PRE-FESTIVAL

Small increase in ticket prices

This will help to cover the set up costs of the scheme

A ticket to Glastonbury in 2022 will cost £280 + £5 booking fee.

A £5 "tent tax" would be added to the ticket price

With an average of 200,000 attendees, this would amount to £1 million of funding for the implementation of the scheme and set-up of the necessary manufacture and disposal infrastructure, distribution centres etc.

Collaboration with brands (sponsorship)

Brands wishing to improve their environmental brand image can partner with Afterparty and sponsor the scheme
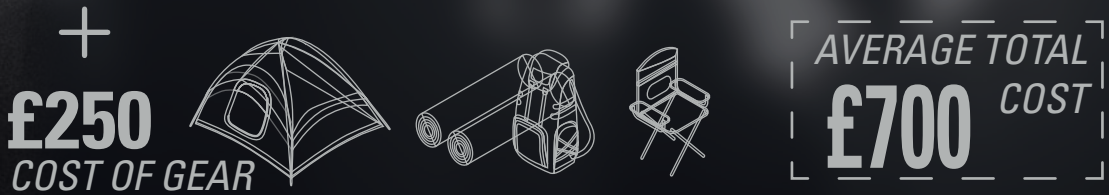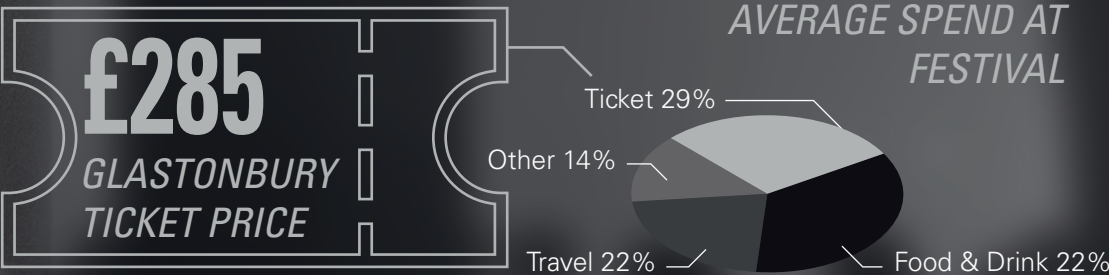
DURING FESTIVAL

Replacement tents fund themselves

Tent replacement costs £20 per tent

Collaboration with brands (advertisement)

The is space for brand advertisement (e.g. Afterparty is brought to you by"

Space for advertising in app, on the wristband and printed on the tents themselves

£285
GLASTONBURY TICKET PRICE

+

£250
COST OF GEAR

VS

AFTERPARTY ALL INCLUSIVE TICKET
£550

AVERAGE SPEND AT FESTIVAL

Ticket 29%
Other 14%
Travel 22%
Food & Drink 22%

AVERAGE TOTAL COST
£700

POST-FESTIVAL

Reduction in clean-up costs post-festival

The cleanup after Glastonbury 2018 cost £780,000

Though the Afterparty will not eliminate necessity for clean up from other resource streams, it will vastly reduce the clean up costs deriving from the campsites.

Festival-goers who do not return their tents to the distribution centre are fined £15

Clean-up costs can be recouped through money from the fines issued

If a quarter of Glastonbury attendees leave their tent behind, which some will inevitably do, £750,000 could be made in fine money alone (96% of the clean-up costs of Glastonbury 2018)

Reclamation of resources

Cardboard used in tents is reclaim and recycled for next year's tents

Resources are kept in the resources loop for as long as possible (no need to purchase all new cardboard each year)

Festival can market itself as more sustainable, attracting more consumers for next year

In the future, the shift in social opinion on environmental issues will continue to gain traction

More and more consumers want the events they attend to be as sustainable as possible and many would be willing to pay the extra £5 to do this.

Data collected on user behaviour at the festival can be passed on to advertisers to help them tailor their marketing to the audience.