
Climate Action Training 2024

Festivals & Events: Energy



native
events

Julie's Bicycle
CREATIVE • CLIMATE • ACTION



5th November 2024

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WELCOME

Housekeeping

- Auto-captioning
- Chat and Q&A functions
- Webinar feedback questions at the end
- Recording and slides available post webinar on Arts Council climate action webpage

<https://www.artscouncil.ie/Arts-in-Ireland/Climate-action/Arts-Council-resources-and-supports/>



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Our team today

Noreen Lucey



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events

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native
events



Autumn series training webinars:

17 Sept 10-11am
Getting Started:
Festivals & Production
Companies

24 Sept 10-11am
Getting People on Board:
Festivals & Production
Companies

1 Oct 10-11am
Developing Action Plans:
Festivals & Production
Companies

22 Oct 10-11am
Travel and transport

15 Oct 10-11am
Audience travel

8 Oct 10-11am
Materials and procurement
Festivals & Production
Companies

29 Oct 10-11am
Content, programming and
communications

5 Nov 10-11am
Energy for festivals


12 Nov 10-11am
Climate adaptation

If you didn't join the previous sessions you can access the recordings and slides at:

<https://www.artscouncil.ie/ArtsinIreland/Climateaction/ArtsCouncilresourcesandsupports/>

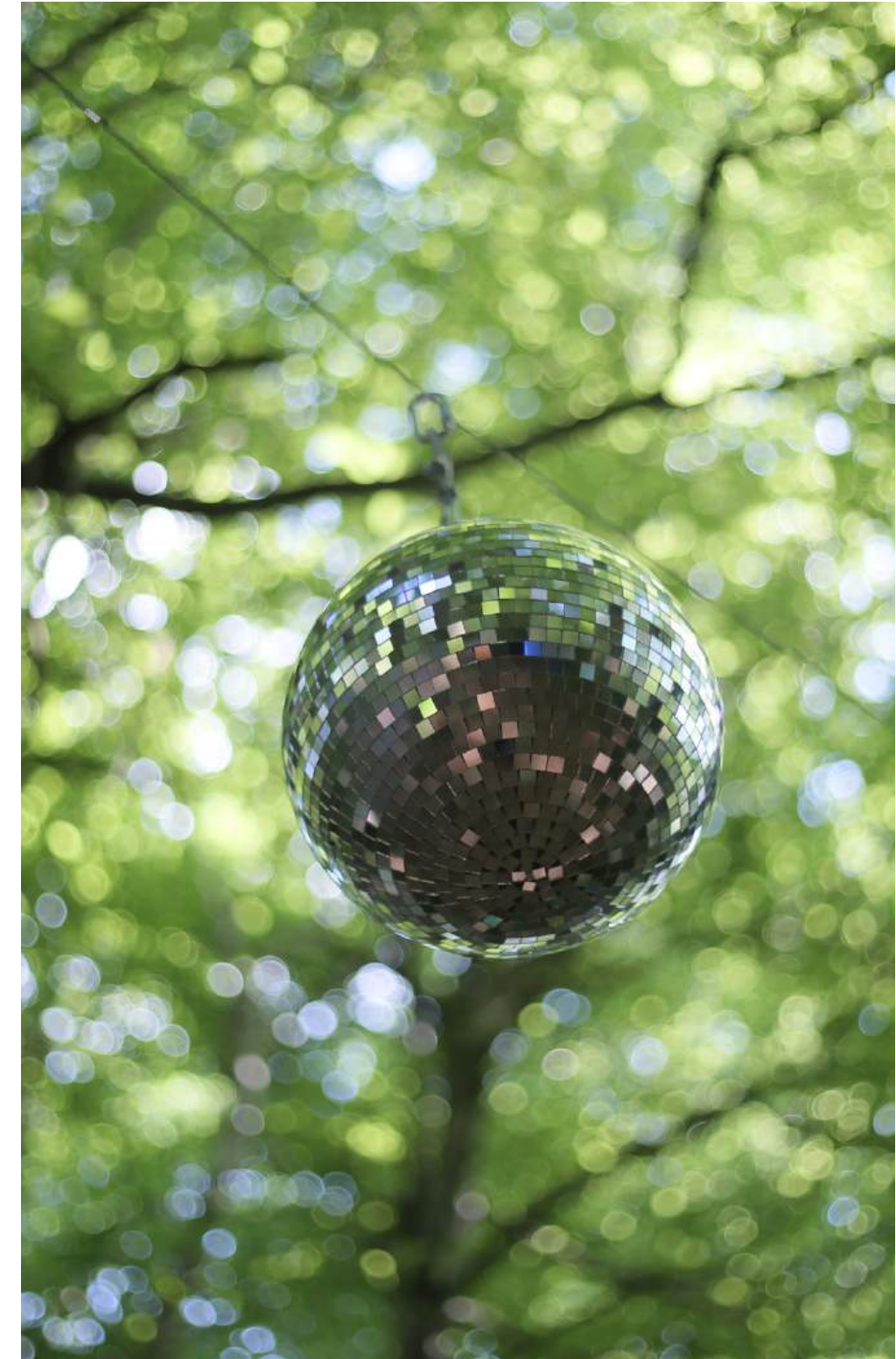
What is the focus of today's session?



- 
- A person wearing a blue long-sleeved shirt and a dark beanie is kneeling on a grassy area. They are using a brush to paint a large, stylized white graphic on a rectangular wooden board. The graphic consists of thick, white lines forming a complex, abstract shape. In the background, there is a white plastic bag and some other debris on the grass. A green semi-transparent box is overlaid on the left side of the image, containing a list of bullet points.
- A brief context as to how energy usage is contributing to climate change
 - What the Irish state's aims are to reduce the greenhouse gases associated with energy creation.
 - To make that relevant to you in your festival organisations (indoor and outdoor)
 - To give you tips and guidance for energy efficiency and reduction.

We will cover

- Snapshot of global energy and emissions
- Focus on both indoor and outdoor festivals touching on buildings and temporary power.
- Tips on reducing your energy usage - Three step approach
- Other guides - Failte Ireland, Julie's Bicycle, GAI
- SEAI - available funding and training
- Q and A



Festival organisations within this group include:

- *Big energy users*
- *Small energy users*
- *Those with control over their suppliers*
- *Those with access to their bills and data*
- *And those without control and without data*
- *Organisations who have undertaken a lot of work to measure, understand and reduce their energy usage and*
- *Organisations at the beginning of that journey*

Which of these best describes your organisation?

Our event/festival is based in ...

- A venue - we have access to our energy bills and complete say in selecting our energy providers.
- A venue with no access to our energy bills and no say in selecting our energy providers.
- A shared venue/building with access to our energy bills and some influence in selecting our energy provider.
- Outdoors with access to a grid connection and no influence on selecting our energy provider.
- Outdoors using temporary power sources and some grid connection.
- Outdoors using temporary power sources only.
- We are both an indoor and outdoor festival.



Illustration: Paul Scott

THE IRISH TIMES

Environment

Irish climate to become 'unrecognisable' if action on emissions is delayed

Ireland has almost no pristine rivers left and is producing 'more waste than ever', State of Environment report finds

Figure 17.1 Five key priorities from the State of the Environment Report 2024

Delivering a national policy position on the environment



We urgently need to have a national policy position on the environment to address the complex interactions, synergies and trade-offs across environmental policy areas and to deal with its interactions with other policy domains.

Driving policy implementation



We must rigorously implement existing environmental plans and programmes to achieve the benefits that they were developed to deliver.

Transforming our systems



Transformation of our energy, transport, food and industrial sectors is critical to achieving a sustainable future.

Scaling up investment in infrastructure



Investment in water, energy, transport and waste management infrastructure is essential to protect the environment now and into the future.

Protecting the environment to protect our health



Protecting the environment is key to protecting our health and we must act to reduce the modifiable risks to our health from environmental exposures.

6.8% emissions reduction in 2023 a positive - EPA

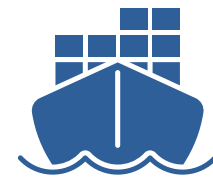
Updated / Tuesday, 9 Jul 2024 06:36



This represented the largest ever single-year reduction and brought emissions to their lowest level for three decades

We Use Energy In So Many Different Ways....

Land and Sea Freight



Road and Rail Travel



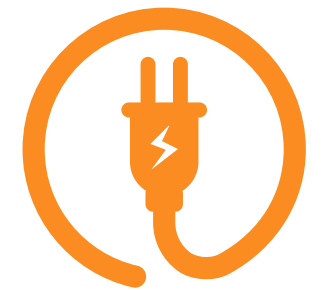
Air Travel & Freight



Heating homes and businesses



Creating electricity to power lighting, machinery and equipment



Concrete & Building



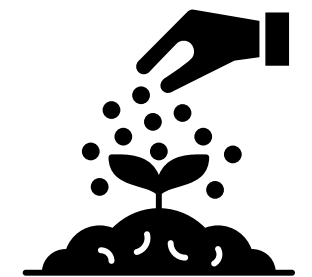
Industry



The goods we buy and consume



Fertiliser & pesticides for agriculture

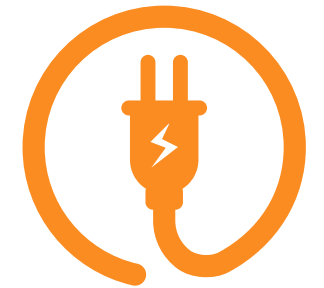


But we are going to focus on energy usage at festivals

**Heating homes and
businesses**



**Creating electricity to
power lighting, machinery
and equipment**



Which of these best describes your organisation's access to energy data?

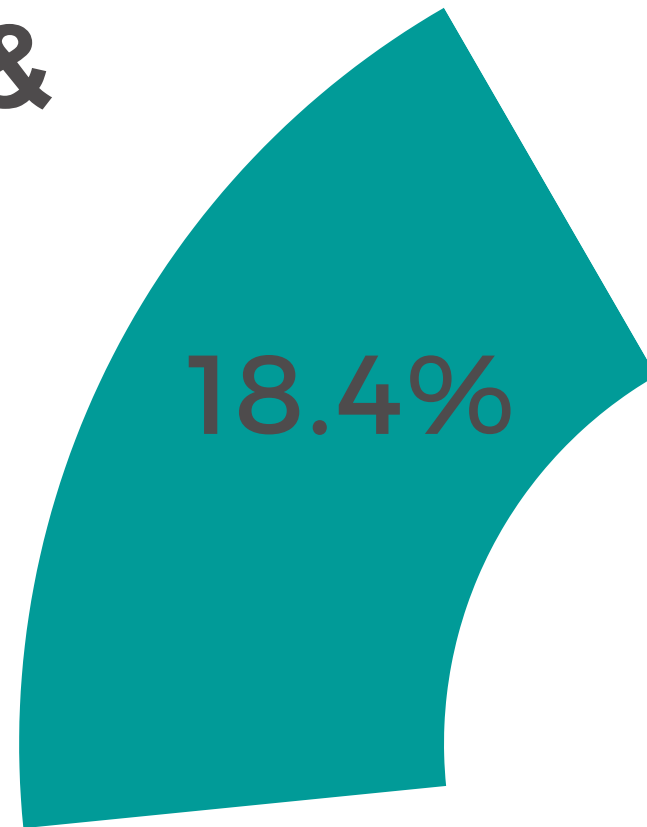
- We have been measuring our energy usage for a number of years and have a good understanding of it
- We have just started to measure our energy usage
- We have not yet begun to measure our energy usage

Global Energy Emissions



Global Emissions by source

**Agriculture &
Land Use**



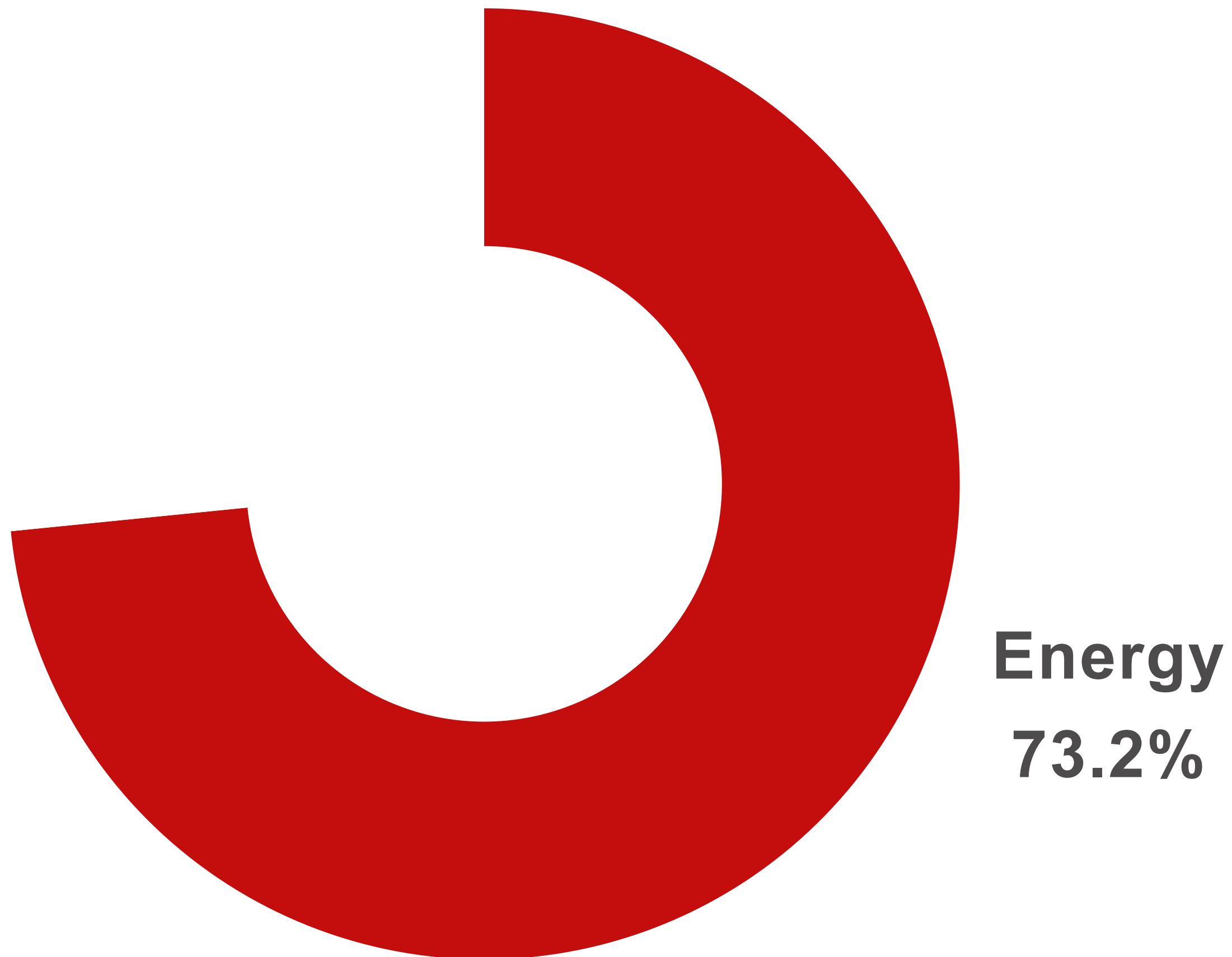
Global Emissions by source



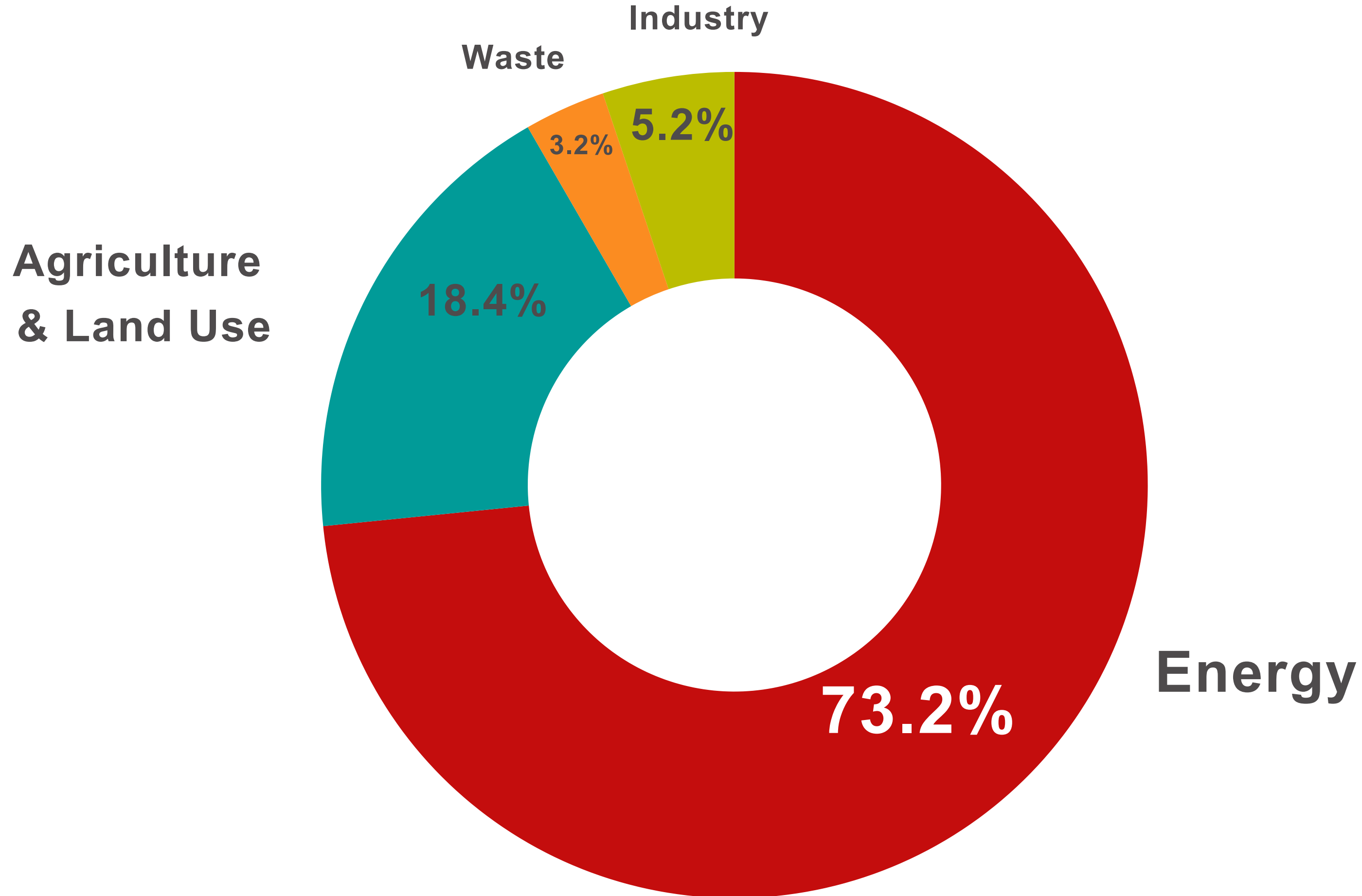
Global Emissions by source



Global Emissions by source



Global Emissions by source



Fossil Fuels



From worst to bad: **Turf, Coal, Oil, Gas.**

Recent studies have identified additional emissions associated with the extraction and processing of gas which may mean it's equally as damaging as oil.

Renewable or 'Clean' Energy Sources....



Solar power, hydro power, wind power and geothermal energy

Some grey areas...it's complicated!



Biomass , Biogas or biomethane, and Hydrogen.

In 2023:

42% of Electricity in the EU came from renewables.

One third of global electricity came from renewables.



The Irish State's

Renewable energy targets for 2030



34.1%

Overall renewable energy share



80%

Renewable energy in electricity



29%

Renewable energy in transport



24%

Renewable energy in heat

Festival & Event Energy



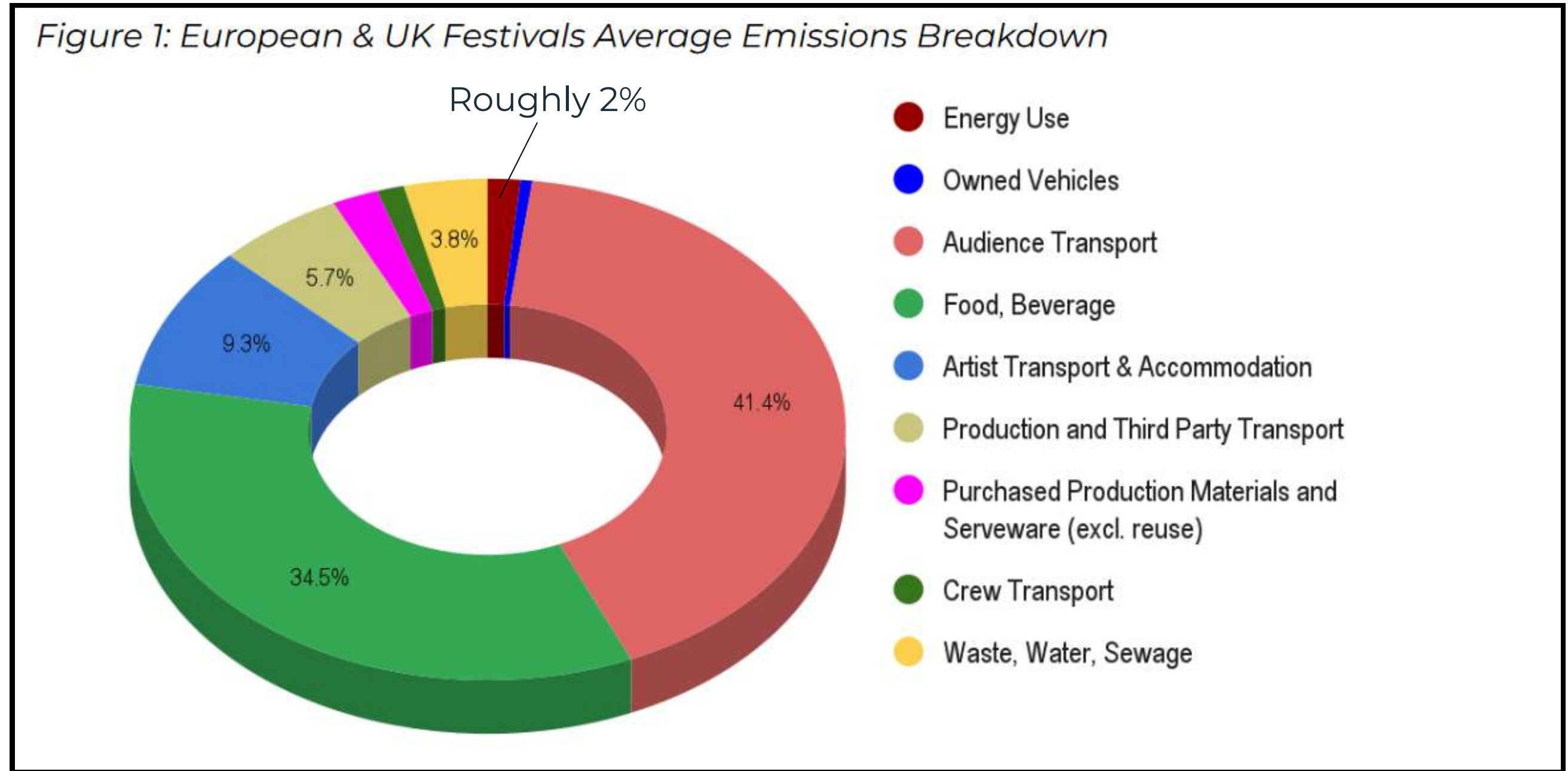
A snapshot of energy at festivals and events:

- Generators are the most common way to power outdoor events in Ireland.
- Buildings venues are often used where there is little control over energy sourcing or accessible data on energy use.
- Energy users: lighting, audio, safety signage, food traders/catering, showers, devices charging, offices, vehicles.
- Technological barriers exist, upskilling is needed in renewable alternatives.
- Sourcing renewable alternatives can be more challenging, expensive or unavailable.
- Fuel Costs - for both Diesel and HVO (Hydrotreated Vegetable Oil) are rising
- As Carbon Footprints become more accurate, we see a change in where the highest % of emissions come from.

Which of these do you think is the biggest emitter from an outdoor music festival?

- Food & Beverage
- Audience Travel
- Energy

Outdoor Festival Energy Emissions



(A Greener Future, 2023)

Festival Emissions by Scope

Scope 1

- Onsite Travel - owned vehicles
- Onsite power from fuel

Direct

Scope 2

- Purchased electricity for own use, facilities and venues

Indirect

Scope 3

- Materials (waste and material resources)
- Travel: audience, crew and contractors, artists.
- Transport of site infrastructure and production materials.
- Purchased goods and services: food traders, decor, merchandise, tickets and physical communications.

AVERAGE ONSITE CARBON FOOTPRINT BREAKDOWN (CO₂e) OF A UK CAMPING FESTIVAL



- Perspective shift - a lot of emissions come from Scope 3, some of which is not 'on-site'.
- For 'on-site' emissions alone, an average of 76% comes from Energy.

(The Show Must Go On Report, 2020)

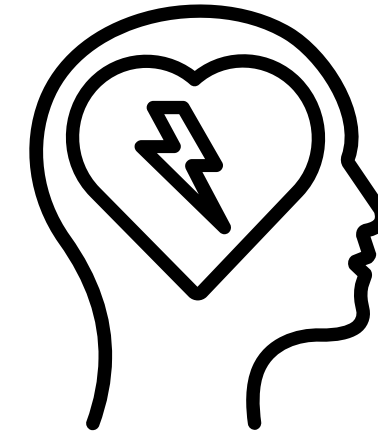
3 Step Approach to reducing energy emissions



Guiding principles for reducing your energy emissions



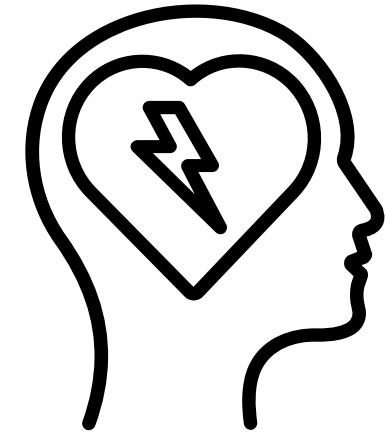
Be Energy Efficient: Stop wasting energy



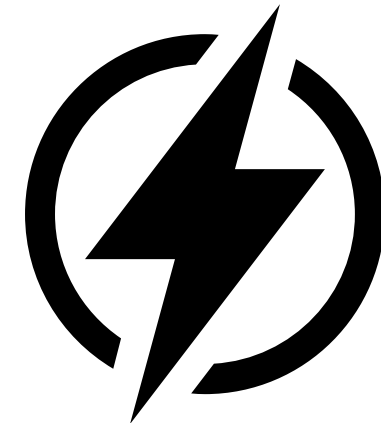
Guiding principles for reducing your energy emissions



Be Energy Efficient: Stop wasting energy



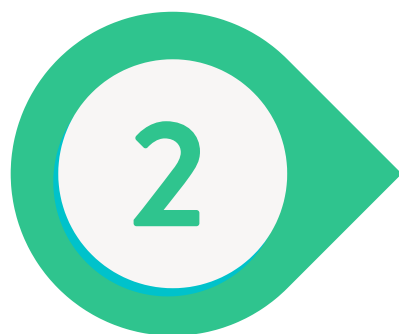
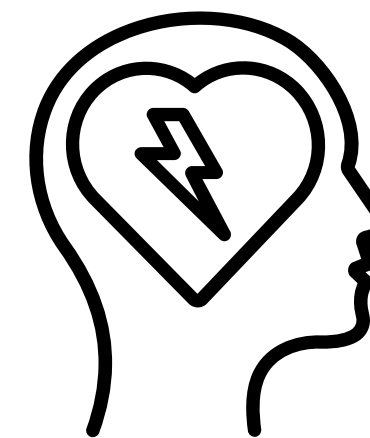
Increasingly, energy usage should come from electricity



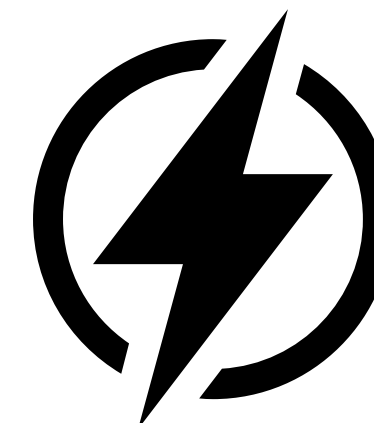
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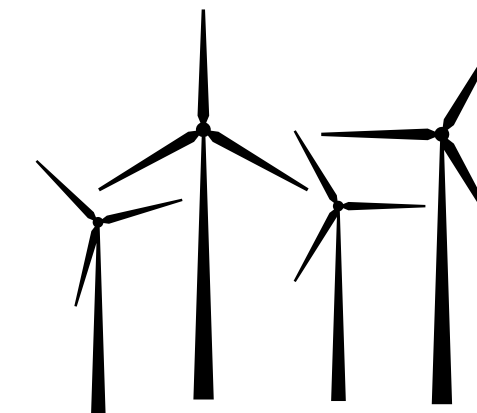
Be Energy Efficient: Stop wasting energy



Increasingly, energy usage should come from electricity



Electricity should be derived increasingly from renewable sources



1

Be Energy Efficient: Stop wasting

- Turn off equipment when not in use
- Turn down heating to 19 degrees
- Turn off lighting in rooms when not in use
- Use only the lighting you need, use LED bulbs
- Don't leave machinery and equipment on standby
- Implement an energy saving campaign with your team
- Put signage beside light switches etc to remind people to turn off lights when exiting a room.
- **Start measuring your energy, where possible.**





For indoor venues

- Take a look at your energy bills and compare them month on month

OR

- Ask the venue you are hiring if they have a meter in place, and get a comparison between the time of your event and a day the venue is not in use to see the difference.



Examples for indoor festival venues:



Your festival is based in a **large building with control** over your suppliers for both electricity and heating (where heating is not delivered by electricity - i.e. gas/oil), receiving monthly bills itemising your expenditure and usage.



Your festival is based in a **large building owned by your local authority with/without your own electricity meter**. You have no control over selecting your suppliers for either electricity or heating (gas). Bills for usage are not sent to you but rather are sent directly to your local authority for payment.



Your festival is based in a **multiple venues** with organisations you partner with. You have **limited control** over calculating the energy usage of events at these venue

Example 1: Large Building with Control

No cost (behavioural)

- Apply for an energy audit voucher from the SEAI
- Analyse bills to understand consumption patterns
- Optimise usage of energy efficient appliances and equipment
- Promote energy awareness with your team, audience and visitors using energy reduction signage
- Sign up for a green electricity tariff

Low to medium cost

- Conduct an energy audit
- Install energy monitoring devices and systems
- Replace incandescent and fluorescent lights with LED lighting
- Install light motion sensors
- Review possibilities of installing renewable energy systems such as Solar Photovoltaic panels

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Example 1: Large Building with Control



High cost

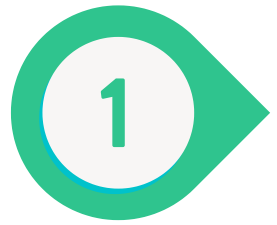
- Improving the fabric of your building
- New Building Management System
- Installing Heat Pumps
- District Heating may be an option

Example 2: Large Building not owned by you

- If you have access to your electricity meter, take regular meter readings to better understand your energy usage
- Explore funding opportunities with your local authority to install energy efficient stage and building lighting, or motion sensors
- Explore funding opportunities with your local authority to install renewable energy sources such as Solar Panels
- Implement an energy saving campaign with your team - involve them Update Procurement Policy/ Include in Green Procurement Policy: When purchasing new equipment ensure that new equipment is A rated
- Optimise usage of A-rated appliances and equipment

Example 3: You work with multiple venues to produce your festival

- Your festival is based in a number of venues with organisations you partner with.
- You have limited control over calculating the energy usage of events at these venues
- You have started working with venues to start calculating the energy used.
- Provide checklist for your venue partners on how to calculate the emissions used during your event.
- Improve on data collection year on year



For outdoor festivals

Energy Sources
at outdoor
festivals:

Grid Connection

Solar Panels

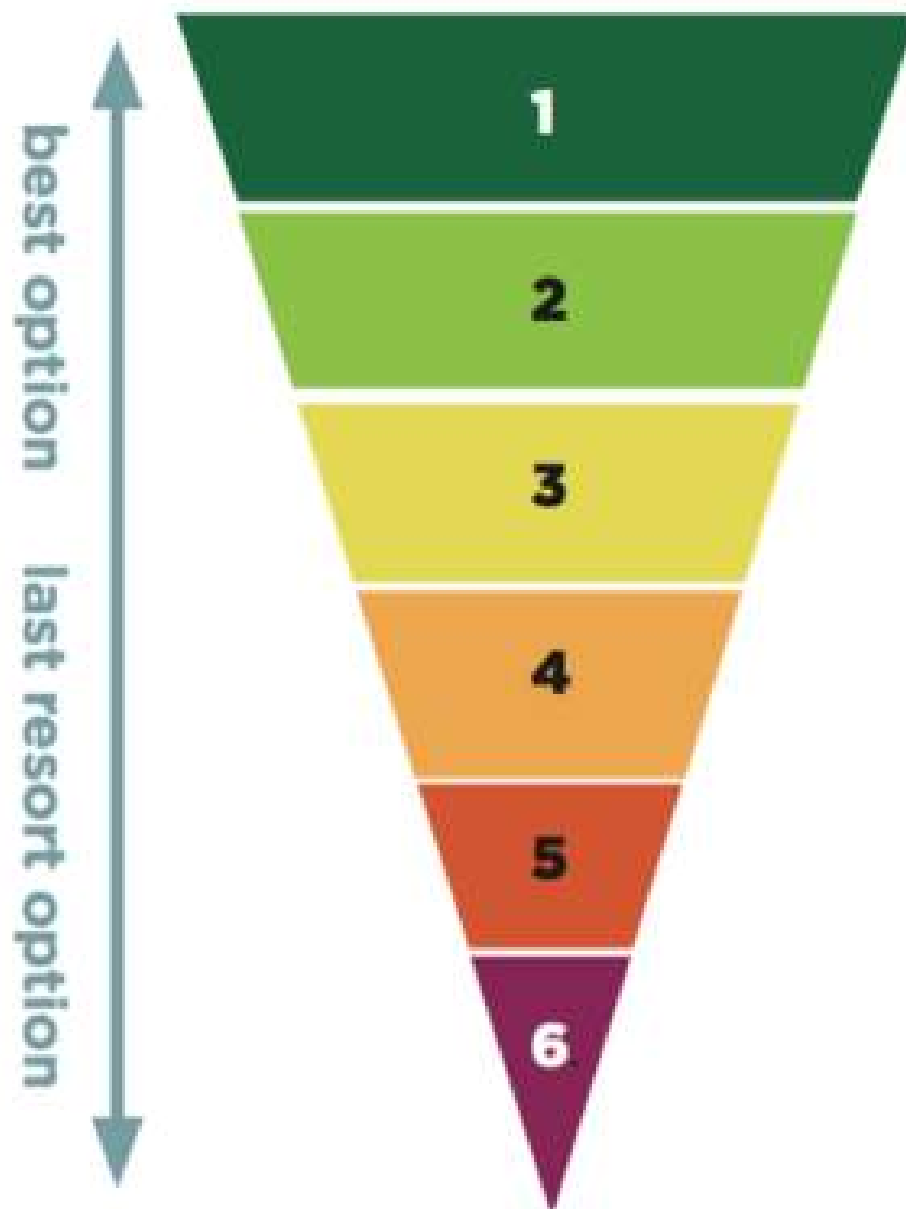
Biofueled (WVO /
HVO) Generator

Diesel Fueled
Generator

Batteries

Hybrid Systems

-
1. Reduce Power Demand and Centralise needs
 2. Understand true power requirements
 3. Increase use of renewables



Prevention - do you actually need power in this location/for this application?

Efficiency - use less power & use it in a more fuel efficient way

Sourcing - can you use mains instead of generators? Can you use renewables?

Hybrids - can the system be backed up or bolstered by battery technology?

Alternative fuels - can you use HVO or other sustainable fuels?

Diesel-fuelled generators only - where nothing else can be used

Powerful thinking

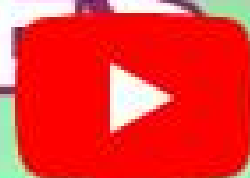


ROAD TO CIRCULARITY | episode 2



Share

**OUR FESTIVAL
GENERATES
MORE ENERGY
THAN IT NEEDS**



Watch on  YouTube

Case Studies

Body & Soul 2018

- Smart power plan in 2018 with Zap Concepts
- Synced sets in a load share configuration were deployed on the two largest stages and at 2 activations.
- 1 x hybrid system at the main entrance to the festival
- **Saved 6657 litres of fuel and nearly 20 tonnes of CO₂e**

Case Studies

Shambala Festival UK

- Reducing the carbon footprint caused by energy consumption
- 80+ energy monitors installed across the festival
- 3-year plan with their energy provider - clear targets for fuel reduction
- “saving fuel saves money!”
- **between 2010 ad 2019, reduced onsite CO2e emissions by 90%**

Case Studies

Oyafestivalen Norway

- Phasing out diesel generators by connecting to the grid
- They had to get the municipality and the energy provider on board.
- Changing from generators to the mains has made the festival 80% more energy-efficient, and in the period 2009-2018 it has saved around 200,000 litres of diesel

For outdoor and indoor festivals:

- Make an energy plan, use the hierarchy
- Aim for energy reduction first, then efficiency
- Liaise with your power supplier, venue, local authority - ask them for help/collaboration
- Communicate with all energy users, ask them to provide detail of their required power and practice reduction
- Measure and monitor where possible
- Review, and set new targets
- Share your experiences - case studies go along way!

Resources:

- Fáilte Ireland - Sustainable Festival Guidelines
- Sustainable Energy Authority of Ireland (SEAI)
- Future Festival Tools
- Green Arts Initiative Ireland (GAI)
- Julie's Bicycle



Sustainable Festivals Guidelines



ENERGY – Just Starting Out



Outdoor/Single Destination Festivals

Try to create accurate power specifications – reach out to all power users individually to find out the power connection they need. A handy template for this is included in the appendix.

Create and work to a power switch on/off schedule. Communicate this to everyone using power at the event. With your power contractor, monitor your fuel usage and loads for generators.

If your event is primarily using diesel generators/fossil fuels (most Irish festivals are), work closely with your suppliers to try to source more environmentally friendly power sources – there are more options becoming available in Ireland all the time.

Explore the availability of alternative, more environmentally friendly generators in your area, e.g. hybrid generators and sustainably sourced biofuels.

Explore the possibility of running activations (even smaller activations) on batteries or a combination of solar and batteries – as every emissions reduction helps.

Charge the power users at your event according to the power connection size they are using. If there are distribution board tripping or generators tripping, consider additional charges for extra connections – this will encourage better energy efficiency.

Use your electricity/diesel bill to tell you how much power/fuel was used at the event. Use this information to make a rough calculation as to CO² emissions. You can find conversion factors on the website of the Sustainable Energy Authority Ireland: <https://www.seai.ie/>

	Who is responsible?	Date Completed	Outcome/Learning
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Irish Festivals doing their bit:

In 2022, The **Galway International Arts Festival** included a Festival Garden, powered by solar.





ENERGY – Making Progress



Outdoor/Single Destination Festivals

Your energy supplier is the key to your success. Work with your supplier towards a plan to increase energy efficiency and reduce fuel usage.

Request, and make it a contractual obligation from your power supplier, a detailed post-event energy report. This should include energy monitoring data, and fuel consumption (ideally by area).

Aim to achieve a mix of energy provision. This might include hybrid generators, biofuel generators, solar and battery systems, and if possible, a connection to the national grid – as this reduces transport and therefore emissions.

Use power meters to monitor the key/largest energy users, e.g. catering, campsite facilities (showers etc), traders, production areas and PA/AV systems/large stages. Metering gives you the data you need to assess individual power usage – and potentially make reductions for the next iteration of the show.

Always aim towards gaining a good understanding of your GHG emissions profile – it seems complicated at first but becomes clearer with practice – and aim for ongoing reduction, year on year. Publish this information widely as part of your sustainability communications and campaign on climate action.

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SPOTLIGHT:

SPOTLIGHT ON TRADERS

- Create a more accurate power spec by asking traders and vendors to list the specific equipment they will use at the festival.
- Run traders' workshops and briefings, creating a community, and ensuring full buy-in and optimised energy usage across the festival site. Actively encourage the use of more energy efficient equipment, swapping out electrical catering appliances for those that run on alternative fuels like gas.
- Group traders together into power zones to spec generators correctly.
- Give traders and bars strict switch on/off times for cold rooms etc.
- Install energy meters at trader islands.
- Switch to charging for energy by kWh, using trader power data to successfully incentivise reductions with a pay-per-use model.



ENERGY – Leading the Way



Outdoor/Single Destination Festivals

Convene meetings and briefings sessions with all relevant stakeholders (both suppliers and users) on energy, to achieve good buy-in for a smart power plan, to be co-created with everyone's input.

Create a system to understand how many lights are energy efficient and/or LED – you could use your power specification sheet for this. With your supplier, make the switch to LED floodlights and festoon, and ask for circuit controls on lighting, activated by timers or sensors.

Establish strong working relationships with tech production staff and lighting engineers, including those of headline acts. The idea is to aim for most of the lighting at the festival to be fitted with low consumption/LED bulbs, from live stages to ambient lighting.

Within your public communications campaign, include that your festival is operating a low energy lighting policy and that this is in operation across the festival site.

Connect to grid power on a renewable energy tariff – you will need to work with your local authority to create a new grid connection to enable this – see the governance and communications section for further advice on how to do this.

Set new, more ambitious targets each year, using the data you gather at each show to provide a benchmark. It's hugely important to communicate openly about your challenges and successes, as part of your public sustainability communications campaign – as this can serve to provide inspiration for other festivals on their own sustainability journey.

At this stage, consider working with an external organisation such as a consultancy, university or accreditation body, to assess your GHG emissions. Link with the SEAI and/or research institutes on a nationwide energy efficiency campaign, gathering data on behaviour change and using your festival as a platform for communicating on climate action.

Who is responsible?	Date Completed	Outcome/Learning



SPOTLIGHT:

SPOTLIGHT ON BASE LOAD MANAGEMENT & HYBRIDISATION

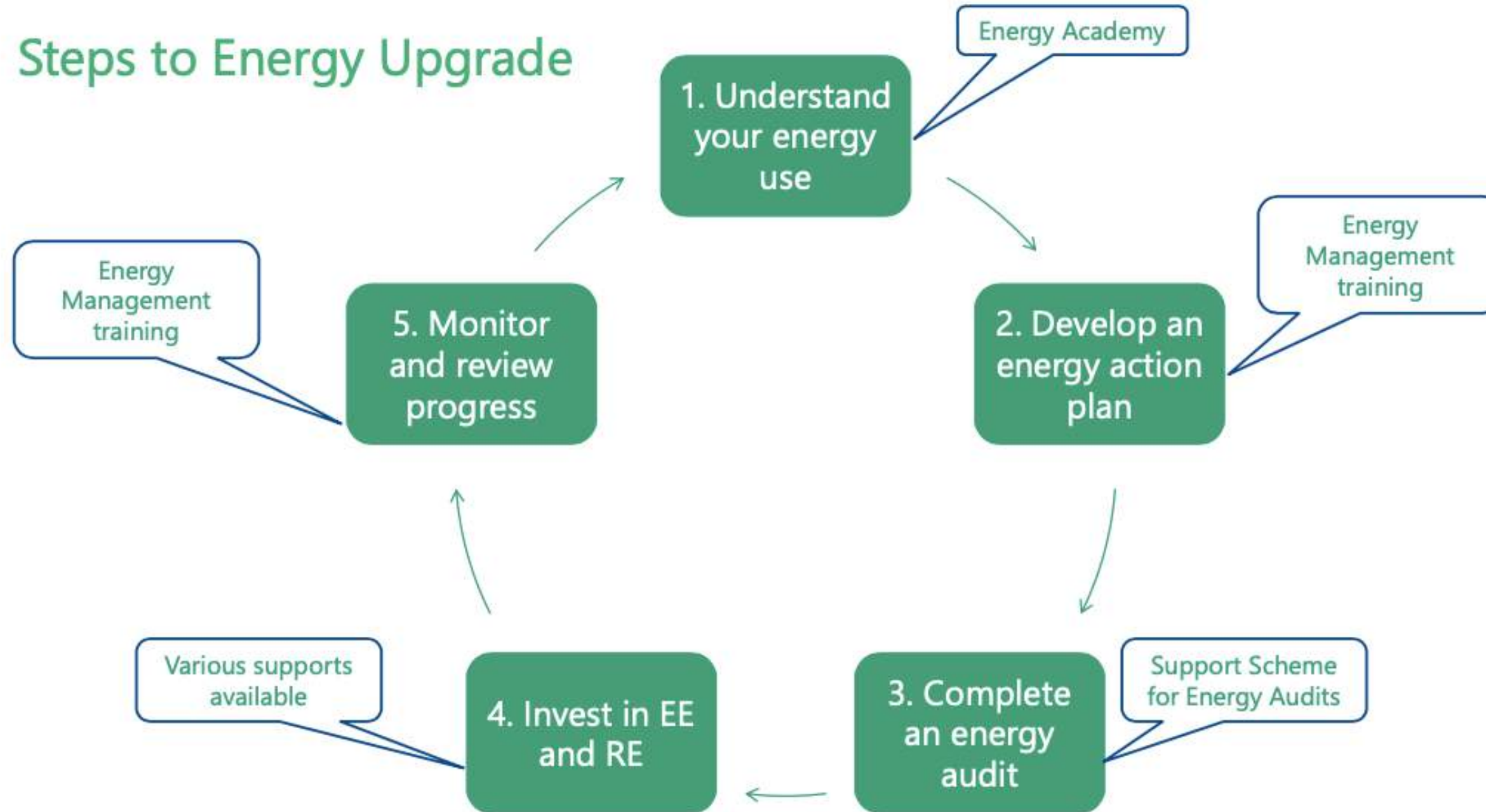
- Try to plan accordingly for base load management – manage periods of low load from the energy stored in batteries, syncing smaller diesel generators with higher capacity ones and designing site layout so that applications that require 24-hour power are grouped in clusters.
- Work towards hybridisation, where batteries are connected in-line with generators to create a combined power and energy storage system. When the generator is running, it trickle charges the batteries by utilising any residual energy not required by the primary load.
- Typically, this is used for base load management such as overnight periods where the load significantly reduces.
- This helps reduce generator runtimes and improves efficiency by making the generator work harder through the introduction of a secondary load through battery charging.

We empower event professionals across Europe to be future-ready, with green competency, tools and personal certification.

**FUTURE
FESTIVAL
TOOLS**

- Free to use
- Festival or individual event professional
- Gives you personalised resources based on what your goals are.
- Gives you a personalised report for your event (but this is not a certification)

Steps to Energy Upgrade



Resources:

- Fáilte Ireland - Sustainable Festival Guidelines
- Sustainable Energy Authority of Ireland (SEAI)
- Future Festival Tools
- Green Arts Initiative Ireland (GAI)
- Julie's Bicycle



Q&A

Festivals & Events: Energy

[Please fill out the feedback survey on screen now](#)

5th November 2024



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events

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