Get AMP'd

Energy Efficient Outdoor Events - Mains Power

There is increasing pressure on all business owners to reduce operating costs and to take responsibility for the environmental impacts of their activities.

Implementing energy efficient operations can be a pathway to tackling both. The following fact sheet delves into energy efficiency and energy conservation for outdoor music events using mains ('house') power and guides you to Get AMP'd by following the Assess, Manage, Perform, Disclose pathway.

Greener Live Performances

through energy efficiency

Power costs can be a considerable line item in budgets for outdoor music events. With energy prices ever-increasing, energy efficiency is quickly making its way to the top of priority lists for those event producers with an eye on their triple bottom line.

Event producers, site managers, production managers, artist liaison, technical production managers, vendor management and anyone that plans for or uses power at events have a role in achieving energy efficiency. Are you a **Power Player**?

This fact sheet delves into energy efficiency for outdoor music events using mains ('house') power and introduces you to our **Power Planning Pathway** and the critical steps we've identified – Assess, Manage, Perform and Disclose.

If your event is running on temporary power supply, please read the *Temporary Power Fact Sheet*. Our *Energy Efficient Outdoor Events Checklist* should also be used in partnership with these fact sheets, and covers both mains and mobile power, in recognition that many events are using both types of power supply.

What is Energy Efficiency?

Energy efficiency is simply using less energy to achieve the same result. For example using a light or piece of equipment that draws less power but produces the same effect. Efficient use of energy can also be achieved through physical intervention such as putting something in place that allows current equipment to be more effective, such as acoustic panels or shading.

Energy conservation is a related concept which is used in tandem with efficiency, and is a good first step. Energy conservation is reducing energy demand or going without in order to save energy from being consumed in the first place.

Designing and planning for energy efficiency and conservation includes site layout and logistics planning which can result in equipment being turned off, used less intensively or not being needed at all. For example, ensuring glass fronted fridges are not sited in full sun therefore requiring more energy to keep them cool.

Choosing to use equipment and lighting which is energy efficient is of course a key pathway to an energy efficient event! Bars, caterers and food stallholders will need to use refrigeration, water heating, cookers, kitchen equipment, coffee machines, bain-maries, and deep fryers. Equipment which uses electric 'elements' such as urns, fryers and bain-maries, are energy intensive and the most efficient equipment choice is to actually change to gas. For other equipment, look for efficiency ratings such as the energy star label, or simply look at the wattage of the equipment and choose the lowest wattage that will do the job you need.

Why Energy Efficiency?

The benefits and motivating factors of running an energy efficient event are *budgetary*, *environmental* and *reputational.*

In many cases house power will be invoiced as an 'outgoing', charged in addition to venue hire. If the event producer achieves reduced energy demand through efficiency initiatives, they will also experience a direct reduction in running costs for the event. Simple.

However, some sites may bundle power costs into the hire price. Unlike built venues where the bulk of energy efficiency efforts are the domain of the venue owner, when house power is provided to outdoor events, the energy efficiency efforts are the responsibility of the power user – the event producer.

If power is not charged back to the user, and you will therefore not see your efforts reflected in cost savings, then you're in an interesting position! Have a discussion with the site owner to work out how your energy efficiency efforts and resulting reductions can mean a cost saving for you. If this cannot be agreed to, we hope that you will be motivated by what is an equally important positive outcome of energy efficiency efforts – the environmental benefits. Being energy efficient means using fewer fuel resources and producing fewer greenhouse gas emissions.

Responsible event producers must consider their greenhouse gas (GHG) impacts in planning and delivering their productions. By running energy efficient events you will be able to confidently communicate your commitment to GHG reductions and benefit from reputational enhancements.

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Power Use at Events

Outdoor music events require power for light and sound on stages, amenities, site offices, dressing rooms, traders, caterers, bars, refrigeration, site lighting, décor, and event activities and entertainment aspects. Power is used at three distinct times:

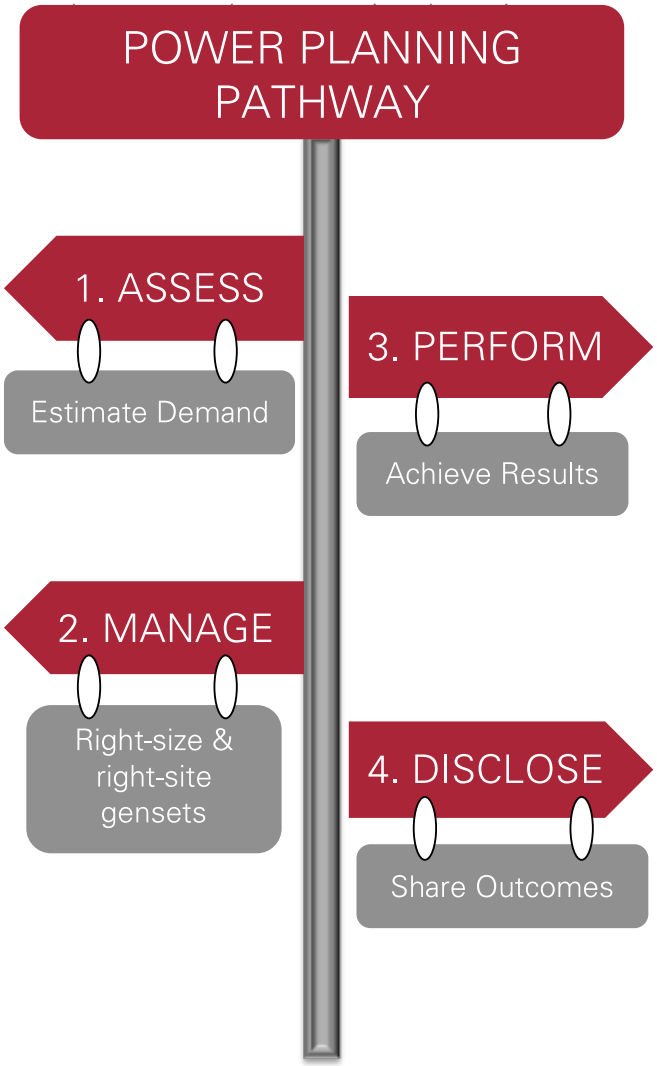
1. pre-event during site build, production bump in and rehearsals/sound checks
2. during the event
3. post-event bump out

A typical outdoor event's power consumption will be split evenly between;

1. stage requirements
2. bars and traders/caterers
3. amenities/site lighting

There are opportunities to achieve more efficient power use in all three phases of the lifecycle across all three aspects of power demand.

Understanding the power profile of your event; where, when and how power will be used; will enable you to identify efficiency opportunities. When traders or artists apply to participate in your event, begin the energy efficiency conversation early by including the event's commitment to it and encouraging them to think about their power demand as they are planning power estimations for your event.



Get AMP'd

As most outdoor events are once-off there's little opportunity to put infrastructure efficiencies in place on the site. Power provision will often be a case of a mains power outlet in the great outdoors! So **GET AMPd** to tackle energy efficiency in the outdoors… Follow our **Power Planning Pathway:**

1. ASSESS – estimate demand
- Understand energy sources
- Forecast energy demand

2. MANAGE – design in efficiencies
- Design-in energy conservation
- Source energy efficient equipment
- Plan for operational efficiencies

3. PERFORM – achieve efficiencies
- Engage power users
- Implement initiatives
- Monitor and adjust compliance at the event
- Meter and measure power consumption

4. DISCLOSE – share results
- Analyse results and assess performance
- Feed back performance results to power users, staff, and other stakeholders

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1. ASSESS

What's the Source?

If you're motivated by the environmental impacts of power use you'll be very interested to know the house power source. It will likely come via 'mains' power, rather than from on-site power generation (eg solar or permanent diesel generators). Mains electricity will be from various sources such as coal, hydro, solar, wind or biomass. This is called the 'energy mix'.

If the power source is from coal, this is 'non-renewable' as it is a fossil fuel. Hydro, solar, wind or biomass are termed 'renewable' power as they are from sources able to be replenished.

Find out what the energy mix is for house power from the venue owner or your electricity retailer. If from renewable sources, this will be through a 'GreenPower' tariff. Even if the house power is from 100% renewable sources, there are still environmental gains from reducing demand – the less energy you use, the more renewable energy available to the mains grid for other users.

Read more about GreenPower here:
www.greenpower.gov.au

Estimate Energy Demand

Understanding the event's likely energy profile or energy intensity in a 'business as usual' scenario is an important step on the **Power Planning Pathway**.

Identify the major power users including:

- Site lighting
- Amenities
- Traders, caterers, bars
- Site infrastructure (cabins, offices)
- Entertainment providers
- Stage AV/band requirements

This information can be gathered through application forms, technical specifications requests from performers, and supplier information on proposed equipment to be hired.

Collate information on;

- What equipment requires power
- Likely power draw (amps, watts)
- When and how long power could be required

Then calculate/forecast likely total power demand by converting power estimates to total potential kWh draw. Likewise, calculate likely power costs and GHG emissions. (See details at the end of this fact sheet).

Technical Specifications

Stallholders: During the application process or when participation is confirmed, stallholders (bars, caterers, food stalls etc) will communicate their technical requirements to the event such as site size, marquee provision, number of tables, car spots, employee passes etc.

Power estimates should be requested at this time. Start out by informing them of the event's energy efficiency ambitions and request that they look for ways to reduce their energy consumption through equipment choice and operations. Consider letting them know what their power quota is – the maximum they are allowed – and that anything over this they will need to a) justify, and b) pay for.

Artists: If artists, performers and bands are bringing in their own AV or request certain provision, require them to detail what the power draw will be. This will turn their thinking towards the energy intensity of their AV design choices and hopefully tune them into planning energy efficient effects.

Suppliers: Lighting, sound, infrastructure and equipment hirers are critical players in achieving an energy efficient event as they are the ones who will be sourcing and supplying it. Engage them in seeking out and planning in efficiency.

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2. MANAGE

Manage Energy Efficiency

Managing for energy efficiency is the next step on the **Power Planning Pathway**.

Successful implementation of energy reduction and efficiency plans is dependent on staff, crew and contractors being involved and actively committed to the event's goals of reducing power demand.

Those making sourcing or equipment hiring decisions and those operating equipment are integral to success. Put a communications plan in place to let power users, production staff, site and lighting designers know about the event's commitment to reducing energy demand and improving energy efficiency.

- Formalise commitment to energy efficiency through establishing an energy management policy and plan.
- Set power reduction objectives.
- Instigate a power-down policy.
- Incentivise reduction performance.
- Contract it into agreements and include in staff/event performance reviews.
- Ensure accurate records of previous event's power demand and reduction initiatives are kept to enable continual improvement.

Site Management:

- Challenge power estimations and work to establish reduction targets.
- Work with production and catering teams to plan a site that will maximise efficiency, especially considering light, breeze and sun.
- Work with production and catering teams to identify where potential power downs can occur and establish a system to ensure this is instigated on-site.
- Establish metering of power demand so you can review and report to production and catering management and power users.

Production/Stage Management:

- Request or require energy efficient lighting to be used on stages and for site lighting.
- Work with AV suppliers and designers to create low energy lighting effects.
- Communicate with performers around energy efficiency and engage their participation in designing energy efficient lighting plans.
- Review bump-in, rehearsal and sound check times to streamline as much as possible.
- Liaise with AV technicians to establish if systems can be powered down between sound check and show time without losing settings.
- Understand if dimmer control and light shut down reduces power demand, rather than the use of mechanical shutters.

Catering/Bar Management:

- If energy intensive catering equipment such as electric bain-maries, urns and fryers are proposed, require the use of gas powered equipment instead.
- Review site plans and look for potential for increased power demand for refrigeration due to climatic conditions. Provide shade.
- Incentivise, meter and reward catering and bar outlets that produce energy efficient operations.

Questions…

- Are energy management and power down policies in place?
- Are power quotas in place?
- Have accurate power estimates been received?
- Are site and production management working together review power estimates and to design-in site layout and operational efficiencies?
- Are engagement and incentive programs in place to encourage energy efficient planning and operating?
- Are AV suppliers actively looking for solutions?

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3. PERFORM

Perform Efficiently

Implementing your plans and performing efficiently is the next step on the **Power Planning Pathway**.

Site and Event Information

Any handbooks, information packs, newsletters or update emails sent out to event participants and likely power users should include information on the event's power conservation and efficiency aims and specific actions each power user can take to play their part.

Campaigns and Rewards

Set up a low-power challenge, pre-promoted to power users, to encourage interest in and successful implementation of efficiency initiatives. This could be one stage team pitched against each other to have the best production value/effect for the lowest power consumption, or the lowest energy using food trader. You can feel free to use the term '**Power Player**' in your campaign!

Penalties

Although it may be better to use a carrot rather than a stick, you could embed clauses into agreements whereby if power users use more than their prescribed or required amount of power, they are charged an excess usage fee.

Site Inductions

Power users (i.e. primarily traders, stage crew, site crew), will be inducted when they arrive on-site, as per standard event requirements. Include reminders in that induction about the event's commitment to energy conservation and efficient operations, and what specific actions they are expected to take.

On-site Visits

Go around to major power users and operators (e.g. traders, stage and site crew) and reiterate the energy conservation and efficiency actions that should be being undertaken, observe them in action, and correct/encourage correction as required.

Site & Infrastructure

- Place site cabins and amenities in the shade to reduce the need for air conditioning.
- Hire temporary infrastructure that is energy efficient (eg site cabins insulation, fans and gas hot water).
- Configure to allow natural light into temporary infrastructure

Light & Sound

- Streamline rehearsal and sound check timeK
- Plan power-free acoustic performances that use natural site features to optimise acoustics.
- Implement the power down policy.
- Site and program performances so sound bleed does not require over/competing amplification.
- Use low energy stage and site lighting.
- Choose lighting which when dimmed or shut off, means the power demand is reduced, rather than using mechanical shutters.
- Don't use stage lights and site lights during the day.
- Site lighting switched on too early or left on during the day is a potential power drainer. Put processes in place to only have site lighting on as of dusk.

Catering & Bars

- Use gas powered catering equipment.
- Ensure refrigeration in catering, bars and dressing rooms is only on when needed.
- Review load in and cool down timing for stock and turn on refrigeration only when required. Power down where you can.
- Ensure refrigeration is in the shade.
- Check that traders are only using the equipment they stated they would bring.
- Audit/monitor equipment use by traders to check they are not leaving equipment on when not necessary and/or are using power-pulling equipment at the prescribed times.

Event Activities

- Review proposed activities that are energy intensive and look for low energy alternatives.

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4. DISCLOSE

Attendee Communications

If you're really doing great stuff at your event with regards to power conservation and efficiency, promote it to attendees. If there are ways they can interact in energy conservation and efficiency actions, through their participation in the event, get them involved!

You may wish to create initiatives to purposely engage them to think about energy conservation and efficiency both at the event and in their everyday lives.

Events have a role to play in contributing to sustainable development, so engaging and inspiring event attendees to conserve energy and use energy more efficiently is a great outcome of your at-event energy efforts. Some ideas to communicate with and engage event attendees include:

Website, Newsletters, Program: Include information about the event's commitment to energy conservation and efficiency in relevant external communications.

On-Site Signage: If there are any innovations that can be viewed, put up explanatory signage.

On-Site Messaging: If you have a relevant location, such as an eco-zone or similar, include messaging about the initiatives you are taking and similar steps attendees could take at home and work.

People Powered: Set up ways that people can power their own entertainment. Pedal power is the obvious option, however clever tinkerers in your community may create other bespoke set-ups. Put the word out to installation artists to cook up amazing ideas.

Power for the People: Attendees will often need power to charge phones and cameras. This can be provided to the people-power above or through solar power set ups.

Renewable Entertainment: Installations, activations or entertainment powered by the sun, wind or other renewable sources, can be devised.

Performance Monitoring

Report the energy consumed by the event, along with overall efficiency, cost savings and greenhouse gas emissions. This reporting can be both for internal management purposes, and used to inform and further inspire power users. You may also choose to take a full disclosure approach and make your results available to public stakeholders and to share your learning with industry colleagues.

To allow for future planning you should also log equipment requiring power, running hours, siting, and kWh consumed. Try to arrange sub-metering for particular precincts of the event so you can analyse, for example, stage AV power draw separately from catering, bars and traders, amenities and site lighting. Gas used for cooking should also be measured and reported and included in your overall energy consumption and particularly in the event's GHG inventory. Consider separating out your reporting into pre-event (site build, bump in, rehearsal), show days, and post-event (bump out).

The key to continual improvement is to ensure all involved in planning or using power are aware of energy efficiency initiative's success.

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4. DISCLOSE

What To Monitor

Monitor Compliance: The only way to ensure your efficiency plans are implemented is to keep an eye on what's happening on-site. Factor into your plans someone to go around and check that power users - especially stallholders, bars, caterers - only have plugged in what they have pre-declared they will. Also check for things left on when they shouldn't be, such as lights.

Mains Power: Ask the venue or site owner (in advance) to report on total kWh consumed. This is likely to be in place through charge-back invoicing. Sub metering is also important, to separate various power feeds and to understand the energy intensity of various event components. You may need to have your electrician, who is doing power distribution, install temporary sub-metering.

Gas: For bottled gas, go around to each gas user at the event and inspect the gas tank size and ask them how much is used. For multi-day events you may have a gas supplier come on site to refill everyone. Ask them for the figures. For mains gas, again it is just a case of metering.

What was plugged in and when: It is very important to log what equipment was actually being powered, and from where it was powered. Set up forms to gather this information and log it. Go out and cross check it live, and keep that information for future planning purposes. Take photos, write down specs, log timing and running hours.

What To Measure

- Total kilowatt hours (kWh) consumed from mains/grid/permanent power supply
- Proportion from renewable energy supply
- Total bottled gas (kg)
- Total mains gas (kWh)

Efficiency:

- Total kWh energy saved due to initiatives
- Total cost saved due to initiatives
- Total GHG avoided due to initiatives

Greenhouse Gas Emissions:

- Total greenhouse gas emissions
- Total kg GHG per event attendee (per day or total event)

What To Report On

Apart from the numerical aspects (the 'metrics') in the box to the left, it is valuable to report on your management approach to energy efficiency.

This tells the story of your journey on the **Power Planning Pathway**, the steps you took, the hurdles you faced, and the challenges overcome. It would also include recommendations for future action to achieve improvements next time.

- business as usual power demand estimate
- identified efficiencies and reduction targets
- actions taken
- successes and failures of plans
- future recommendations

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