



Using Hybrid Power at Events



About this fact sheet

Powerful Thinking and Firefly have produced this Factsheet to introduce the benefits of creating hybrid power systems, and how event professionals can integrate hybrid technology into their temporary infrastructure. Power has significant implications for the practical, economic and environmental success of any event. Using Hybrid Power Generators can reduce carbon emissions, provide a strong green message to audiences and sponsors, and reduce noise and fuel costs.

Firefly provide turnkey low emission temporary power, technical and creative services for events. Working with festival organisers, film & TV producers, agencies & brands, from conception to implementation; Firefly deliver sustainable events that inspire, entertain and make lasting impact without costing the earth.

How are HPGs used at events?

A Hybrid Power Generator (HPG) can integrate with range of power sources, to create a Hybrid System, such as:

>> **Solar** >> **Wind** >> **Biodiesel / Diesel Generators** >> **Mains Grid**

A Hybrid Power Generator can be used in three different ways:



1. Base Load Management

Connect a HPG to a diesel or biodiesel generator for areas with a variable power requirement to ensure the diesel or biodiesel generator only runs when demand is high. Suitable uses include stages, concessions, and production compounds. The HPG detects when load is low and turns off the diesel generator, seamlessly transferring load to its internal energy storage bank. When a higher load is detected, the diesel generator is automatically started, transferring load to the diesel generator and using excess capacity to recharge the HPG's storage bank.



2. Renewable Primary Supply

Connect a HPG to solar panels and/or wind turbine to provide a stand-alone power system and optionally connect a diesel generator for back-up. Solar panels or a wind turbine provide intermittent power to the load. The internal storage system ensures that demand is met when heavy cloud is present or wind speeds are low. If connected to a diesel generator, the HPG will automatically start it and transfer load if the HPG's storage runs low. Suitable uses include remote site lighting and camping fields (LED festoon), pumps for on-site water management and distribution, small stages, and individual cabins such as box office or security posts.

3.Uninterrupted Power Supply:

Connect a HPG to the grid, diesel or biodiesel generator to provide a seamless power transfer and continuous power output in the event of a primary power supply failure. Suitable applications include event critical areas such as police compounds, medical tents and communications systems.

The advantages of using HPGs as part of your power infrastructure

Base Load Management	Renewable Primary Supply	Uninterrupted Power Supply
Significantly reduce fuel consumption and the event fuel bill	Non-intrusive, truly silent power with zero noise	Negates the need for synchronised diesel generators for seamless transfer
Reducing the runtime of diesel generators reduces the chances of mechanical breakdown and smoking from running at low load	Engage audiences with a visible demonstration of the event’s commitment to low carbon energy	Offer the functionality of twin sets without a second generator and offers seamless transfer
Reduce carbon emissions and the overall carbon footprint of the event	No fuel required thus no unexpected or variable costs post-event	Saves fuel by not running a second diesel generator for back-up
Reduce the exposure to harmful diesel fumes for event visitors	Zero emissions solution	Ensure continuity of power for critical services
Enables accurate monitoring and reporting of energy consumption		



Case Study: We Love Green Festival, Paris

We Love Green festival is one of Europe’s most sustainable festivals set in the majestic scenery of Parc de Bagatelle in Paris. The festival aims to be the first truly green event in Paris. Catering for an audience of 23,000 over 2 days, We Love Green has a wide range of environmental initiatives including using local service providers, recycling, managing waste, car sharing, deposit system for glasses, providing free water fountains, safe storage for bikes and adopting renewable energy across the site.

Firefly was challenged with designing, installing and running the power infrastructure for the site. Working with the production team, detailed information was collated on the anticipated power requirement and a solution designed using a combination of Biodiesel generators, biodiesel-hybrid systems and solar-hybrid systems.

The main stage which featured artists such as London Grammar, Lorde and Foals, was powered by a solar-biodiesel hybrid system consisting of a synchronised pair of 180kVA biodiesel generators linked to a 120kVA Cygnus HPG system and a 30 folding solar PV arrays.

Additionally, a further 20 biodiesel and solar hybrid systems were deployed across the site to deliver power for the second stage, sponsor zone, LED festoon and flood site lighting and production facilities. Firefly’s range of YouPower energy generating equipment was used, including PedGens which were supplied for mobile phone battery charging and powering smaller entertainment areas.

The entire site power infrastructure was delivered using no fossil fuels and the use of hybrid technology reduced the biodiesel usage by 35% and saved over 3.5 tonnes of CO2.