aggreko

GREENER UPGRADES

Aggreko's Greener Approach

Aggreko has been improving its technology and services so those working on major events projects are able to begin the transition to a greener future today.

Some of these solutions are practical ways to increase energy efficiency and performance, while others represent more permanent ways of lowering impact on the environment.

Right Sizing

Why would a generator be oversized?

There could be a number of reasons, including to cope with motor starts and for inrush currents; when the actual load or start-up is not known; or because a safety net or error tolerance has been added to cope for any unknowns.

Why would a temperature control solution be oversized?

This is mainly due to design parameters which are normally linked to the maximum ambient temperature fluctuations in each country. Or, it could be when the actual kilowatts of cooling / heating required are unknown, so a safety net or error tolerance is added to account for this.

What does this mean?

Rental equipment typically runs variable loads where the unit is running 60% loaded for peak usage but drops off to less than 30% load during non peak loads.

How does Aggreko right size?

- Load on demand to deal with variable loads.
- The right battery hybrid technology that can cope with startup currents and minimize the runtime of the generator.

In larger packages batteries can also be utilized in spinning reserve to minimize run hours and offer fuel, carbon and local emissions savings.

Most of Aggreko's fleet incorporates smart metering enabling consultation on sizing requirements.

Utilizing telemetry capability we can refine capacity to give optimum performance.

Aggreko's consultative approach may mean a package is different to what customers first request, but correct sizing will ultimately deliver the best results for the environment and the bottom line.

AGGREKO'S GREENER APPROACH

Right Sizing

Load on demand

Load on demand power solutions replace a large, constantly operating generator with a group of smaller generators that can power up or down automatically according to load demand onsite.

For instance, if a site requires a total peak output of 1500 kW, it is possible to use three smaller generators together to achieve this output when the site is operating at full capacity.

For instance, if the load demand for power fluctuates and this reduces to lower than 350 kW, two of the generators can be power down when not required.

By having two generators powering down, event sites employing load on demand power systems can save money on the fuel that is no longer wasted through a large generator constantly operating at full capacity.

On top of this, reducing the number of generators in operation during periods of downtime means harmful emissions are reduced as well as noise pollution.

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Greener Technologies

Hybrid packages

Aggreko's range of hybrid packages are ideal for keeping the power on at event sites after hours. These solutions have a battery system paired with a generator, meaning fuel is only used when it's needed most.

During non-peak hours or at night, the generator turns off and the battery system provides 12 hours of power at 4 kW – ideal for structures, lights, Internet, communication and security systems. They are also fully automated and require minimal maintenance.

Tier 4F 60-1200 kW generators

Aggreko's fleet work in the same way as the cleanest car engines, limiting carbon monoxide, nitrogen oxides and particulate matter to provide efficient power for use in ultra low emissions zones.

They are also fully compliant with the most stringent requirements set out by the United States Environmental Protection Agency (EPA) for diesel engines. Each Tier 4F generator will be accompanied by a DEF (diesel exhaust fluid) tank. The fluid will need to be regularly topped up.

Environmental Benefits

- Can provide up to 75% in fuel savings
- Lower emissions
- Quiet function

Environmental Benefits

- Diesel oxidization catalysts to reduce CO_2 emissions
- Diesel particulate filters to reduce local emissions significantly improving air quality
- Selective catalytic reduction systems to reduce NOx emissions

AGGREKO'S GREENER APPROACH

Alternative Fuels

Aggreko is committed to exploring the potential of alternative fuels, like HVO (Hydrotreated Vegetable Oil). The company has already developed a range of generators that are able to use biofuel as a 'drop in', therefore lowering the amount of fossil fuels needed to run equipment.

Scientific studies and field trials have shown that the use of HVO fuel brings the following additional emissions benefits compared to fossil diesel:

- Up to 33% lower levels of fine particulates
- Up to 30% less hydrocarbons (HC)
- Up to 24% lower carbon monoxide (CO) emissions
- Up to 9% less nitrogen oxides (NOx)
- Reduced levels of polycyclic aromatic hydrocarbons (PAH)

AGGREKO'S GREENER APPROACH

Services

Aggreko's team of engineers are able to remotely access equipment data through our remote monitoring center (ARM) to ensure there are no functionality issues, like an electrical trip or mechanical fault, and can anaylze performance to ensure equipment is always running at peak efficiency. This service can also include fuel management, calculating what is needed based on usage and scheduling deliveries to match.

These capabilities are especially useful for projects where equipment is running round the clock and there's little room to store extra fuel. Only keeping to hand what's being used also eliminates the risk of costly spillages that can delay projects and send costs spiraling.

Issues are rare but problems can always occur in event environments.

ARM | aggreko Remote Monitoring

Aggreko has developed the ARM mobile app to counter this threat. This online portal gives users remote access to equipment status reports, listing thousands of critical equipment parameters. Metrics include load capacity, amps, run hours, fuel levels and GPS location.

Should an issue arise, users will also be notified of any critical performance alarms and contacted immediately by Aggreko's 24/7 Remote Operations Center. A response team staffed by expert technicians will then diagnose, respond and remotely fix issues when possible.

Aggreko's Remote Monitoring Service monitors the health of its fleet from a central operation center and remotely adjusts to ensure maximum efficiency to reduce emissions.

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AGGREKO'S GREENER APPROACH

Future Technology

With the world facing an estimated power gap of 100 GW by the end of this decade, quick, scalable power and energy storage will be crucial for industry and communities across the world.

That's why Aggreko is continually innovating to meet the future with confidence – supplying sustainable power on demand, wherever it's needed through investment in its people, products, fuels and services.

Aggreko is working on new, low-carbon products at its manufacturing and technology facility.

This includes products running on alternative fuels, like FAME (Fatty Acid Methyl Esters) and HVO (Hydrotreated Vegetable Oil) that are abundant and much cleaner than diesel.

The company has also earmarked significant investment into hydrogen-ready engines and fuel cells that will allow for rapid roll-out as soon as the technology becomes available at scale. It is also trialling methanol engines at its manufacturing sites.

These changes represent the smaller steps needed today to meet bigger targets in the future. The business will continue its decarbonisation programme, eventually moving away from fossil fuels to offer a low- or zero-carbon range of power solutions.

Click to learn more

The huge amount of power required for event sites, both during installation and in operation, highlights the need for new approaches that are in sync with the environment.

Some of the solutions listed in this guide offer events industry an immediate way to lower their impact.

Hybrid solutions with the latest technology such as Tier 4F and battery energy storage systems, for example, can maintain power on site but also limit emissions and particulate matter. These units can also be used to even out intermittency issues while more renewable energy sources are introduced.

Importantly, these hired solutions can help the events industry meet challenging climate targets without holding up progress.

Put simply, there's no one solution to achieving the energy transition. However, by working together and combining technologies such as Tier 4F, battery, solar, alternative fuels, and right sizing methodology we can together deliver significant savings in fuel consumption, carbon local emissions, and help protect the planet from global warming.

For more information about Aggreko's product and services, visit **aggreko.com**