Power Electrics

BES UNITS

www.powerelectrics.com
0370 850 0858

BES HIRE

Battery energy storage (BES) units are designed to significantly cut fuel consumption and emissions, providing a more economical and sustainable power solution for our customers.

WHAT IS A BATTERY ENERGY STORAGE UNIT?

A BES unit or hybrid unit, enables energy, like electricity produced by diesel generators, to be stored and then discharged when needed. With a minimum of 90kWhrs of battery capacity, our BES units are a sustainable solution for many diverse applications.

HOW THEY WORK

Our BES units are understandably more advanced than the batteries you keep at home. The intelligent control system can be configured to keep the energy or release it and support your application with a sustainable power supply when needed or at a pre-set times i.e. during the night.

Many applications, particularly those in the construction industry, have varying power requirements, commitments to reduce environmental impact, and noise restrictions. During the day, whilst the site is operating and functioning, the supply/load required is hugely different to that outside of the normal operating hours. During the quieter hours, with welfare facilities infrequently used, and plant operators finished for the day, it makes sense the power requirement reduces compared with the day.

BES units can be the ideal solution to meet that lower power demand. The intelligent control system can monitor the power requirement, manage the charging and discharging of batteries, and reduce the run time of the generator. An automated, systematic solution that can be pre-programmed to provide silent emission-free power when required.

BENEFITS OF BATTERY ENERGY STORAGE UNITS

Reduce diesel fuel consumption

When demand reduces, the BES unit takes over the load, therefore turning off the diesel generator and reducing the amount of fuel consumed.

Reduce CO2 & NOx emissions

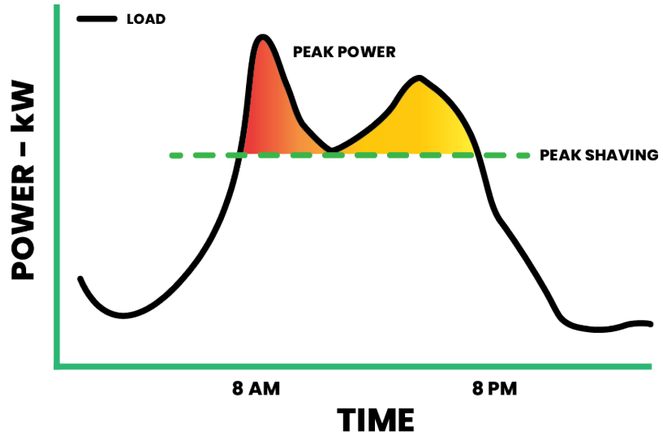
As a result of burning less fuel, BES units contribute to reducing CO2 and NOx emissions on site.

Silent Power

BES units benefit from noise elimination, perfect for sites in close proximity to residential neighbours.

Peak Shaving

Peak shaving along side the mains generator allows BES units to supplement the load above the threshold for a short period of time (up to 3 hours)



BES SOLUTIONS/SET UPS

FULL LOAD PASS THROUGH & SUPPORT
45/90 3 PHASE CHARGING

Units connected in cascade to achieve greater storage capacity.

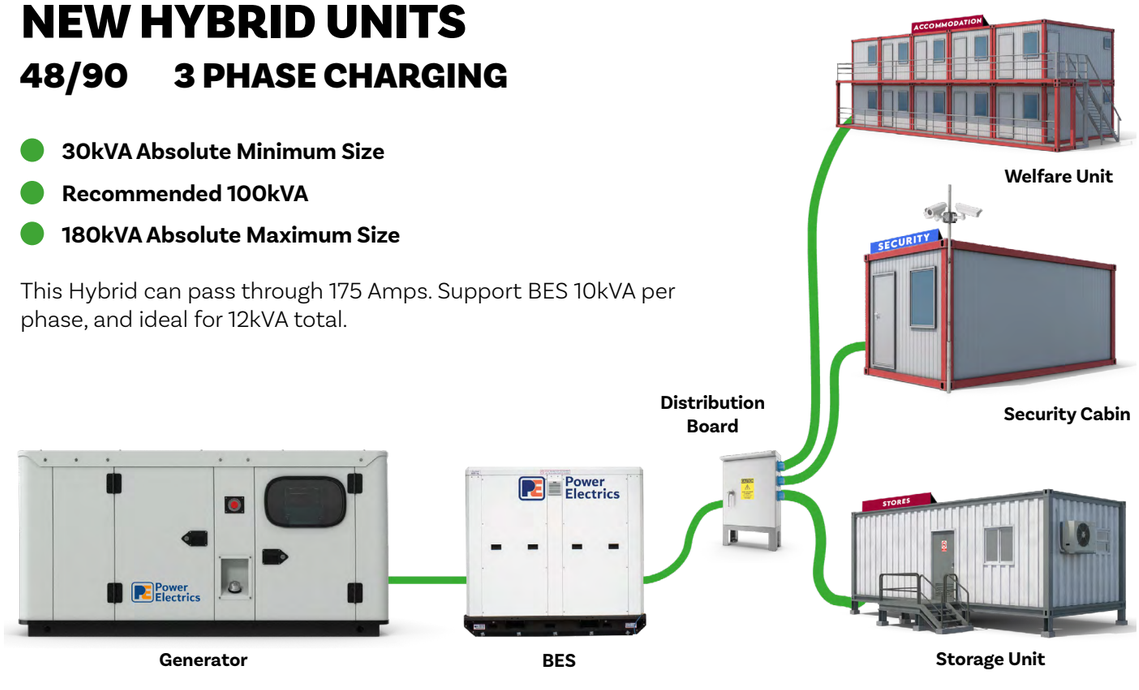
- **30-80kVA**
- **Max BES Support of 10kVA Per Phase - Ideal for 12kVA total**

The hybrid can only pass through 100 Amps, so anything above 80kVA is wasted power, leading to light loading of set i.e last 20kVA of generator not ever available.

NEW HYBRID UNITS
48/90 3 PHASE CHARGING

- **30kVA Absolute Minimum Size**
- **Recommended 100kVA**
- **180kVA Absolute Maximum Size**

This Hybrid can pass through 175 Amps. Support BES 10kVA per phase, and ideal for 12kVA total.

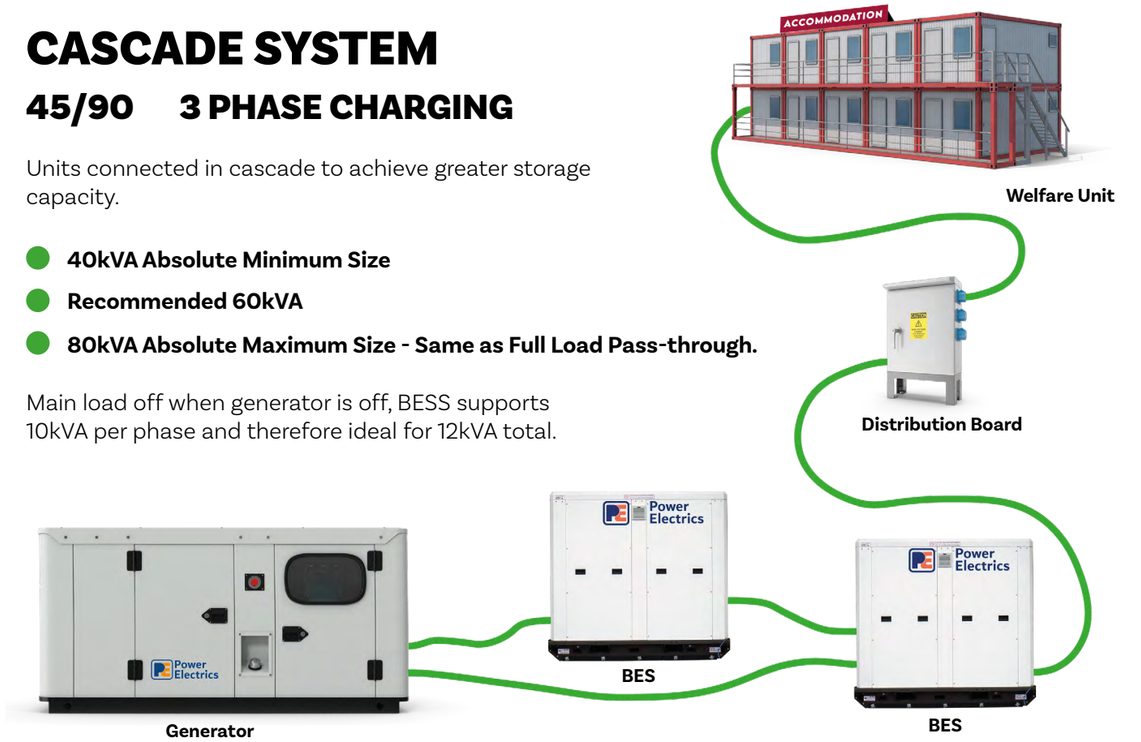


CASCADE SYSTEM
45/90 3 PHASE CHARGING

Units connected in cascade to achieve greater storage capacity.

- **40kVA Absolute Minimum Size**
- **Recommended 60kVA**
- **80kVA Absolute Maximum Size - Same as Full Load Pass-through.**

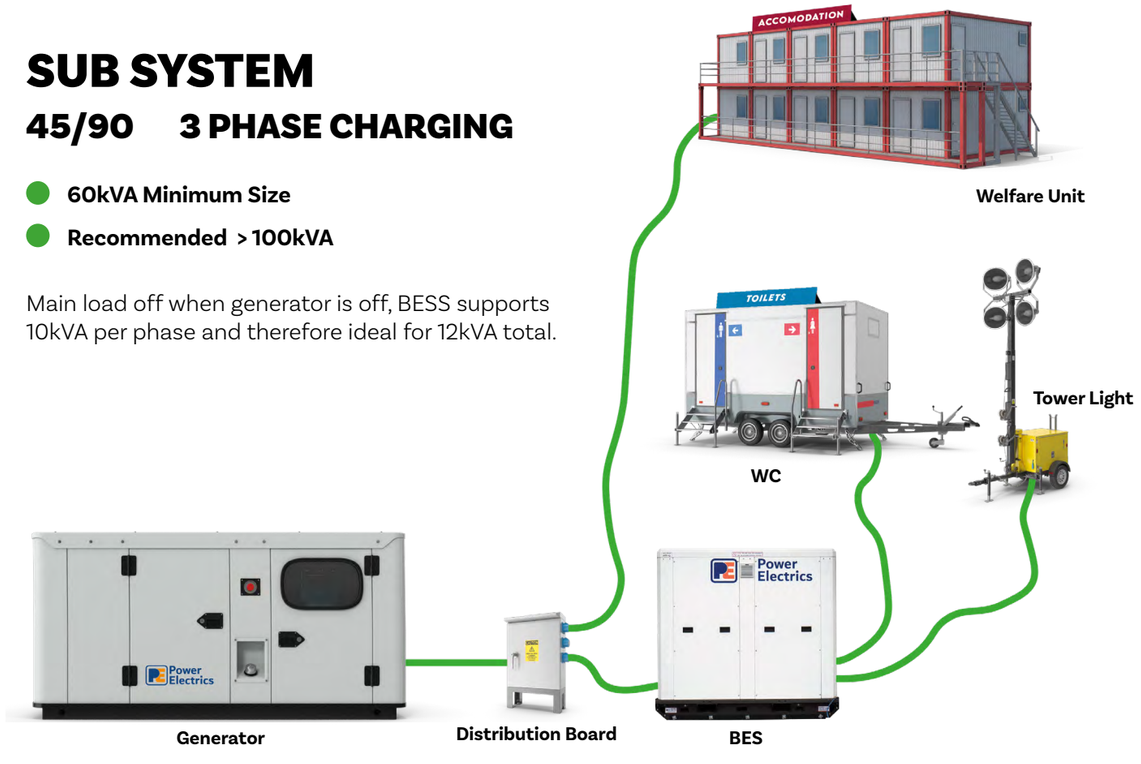
Main load off when generator is off, BESS supports 10kVA per phase and therefore ideal for 12kVA total.



SUB SYSTEM
45/90 3 PHASE CHARGING

- **60kVA Minimum Size**
- **Recommended > 100kVA**

Main load off when generator is off, BESS supports 10kVA per phase and therefore ideal for 12kVA total.



GREENER SOLUTIONS/SET UPS

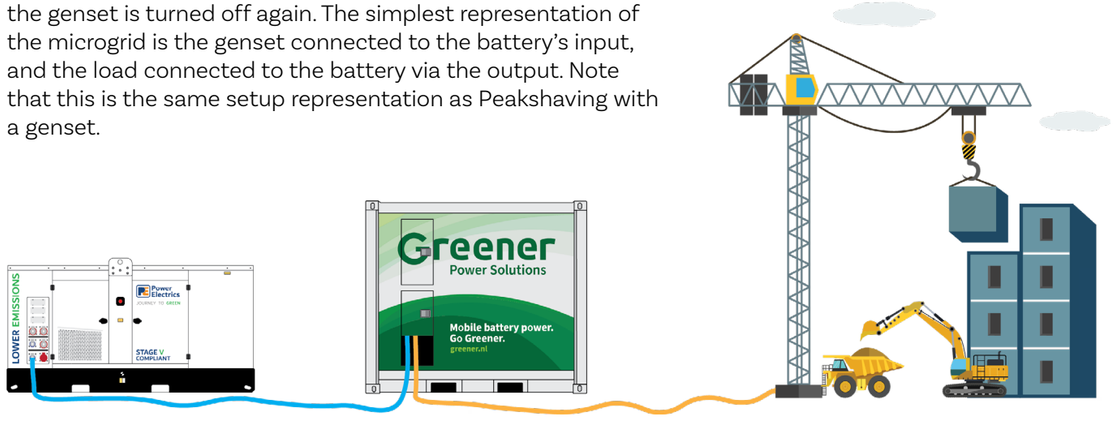
ISLAND SETUP

In island mode, there is not much to automate; batteries form a grid and deliver power. The simplest representation of the microgrid is a battery directly connected to the load.

Greener Battery **Project**

CYCLING SETUP

In cycling setup, a battery is connected to a genset on its input. The genset is started via start-stop relay. The genset is only turned on once the battery is below a certain SoC threshold. Once the SoC is too low, the genset is turned on and the battery is charge until an upper SoC threshold. After charging, the genset is turned off again. The simplest representation of the microgrid is the genset connected to the battery's input, and the load connected to the battery via the output. Note that this is the same setup representation as Peakshaving with a genset.

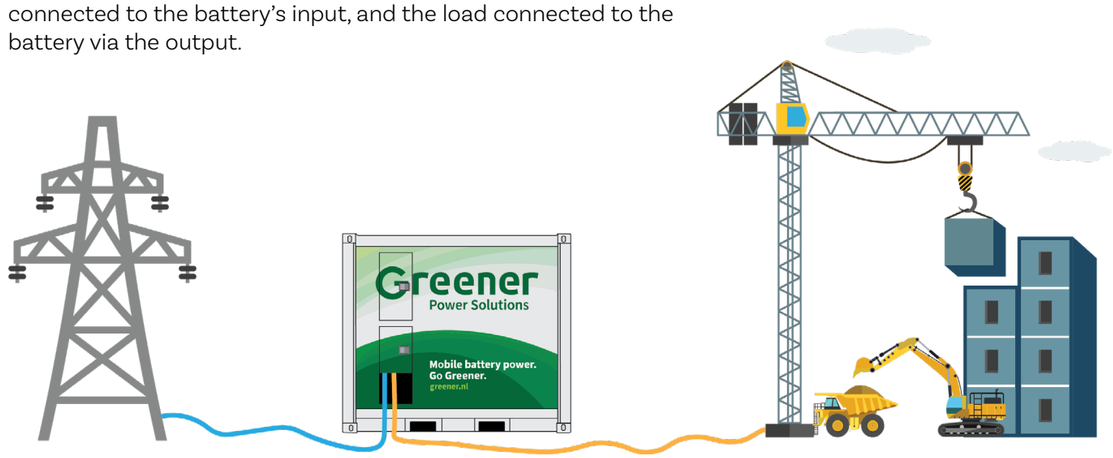


250 kVA / 200 kW Generator **Greener Battery** **Project**

PEAKSHAVING SETUP

In peakshaving setup, a battery is connected to a power source on its input. This can either be a genset (or similar asset, functioning via start-stop relay), or a grid connection. The powersource is only disabled if it would overcharge the battery, but otherwise is always turned on. The battery ensure the power demanded from the source is never higher than a preconfigured maximum input current.

The simplest representation of the microgrid is the power source connected to the battery's input, and the load connected to the battery via the output.

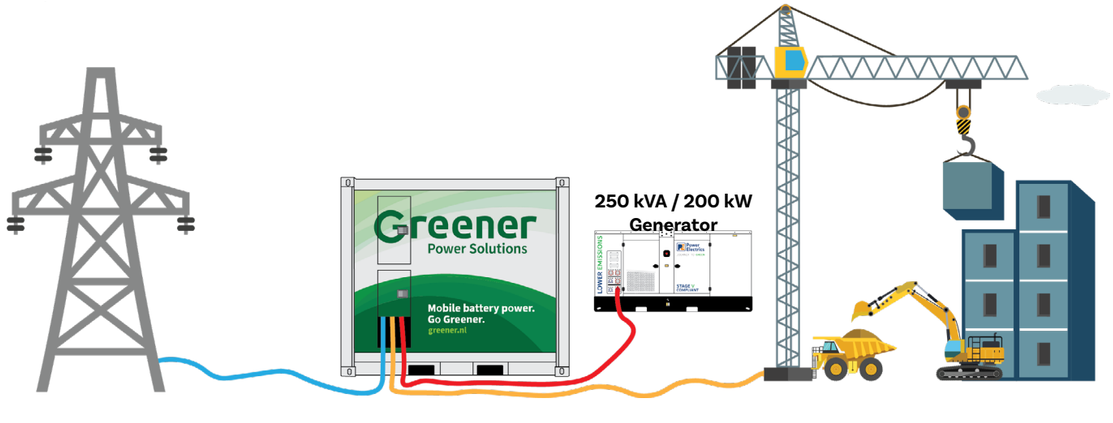


Grid: 80A **Greener Battery** **Project**

LOADSHARING SETUP

In a loadsharing setup, a genset is connected to the battery via the output. A genset is to be configured such that it only delivers a fixed amount of power once it is turned on. Optionally, there can be a power source connected to the battery's input as well. The genset on the output is only turned on if the SoC of the battery goes below a threshold; otherwise the battery attempts to charge with the power source on its input as much as it can.

The simplest representation of the microgrid is a genset connected to the battery's output. Optionally there is a power source connected to the battery's input. The load is connected to the battery's output as usual.



Grid: 80A **Greener Battery** **Project**

BES SIZES

45 kVA / 90 kWh

Unleash the power of efficiency and sustainability with the industry-leading 45kVA / 90kWh Hybrid Power Unit. This versatile solution seamlessly blends reliable generation with remote monitoring and energy storage, making it the ideal choice for construction sites, events, and any application demanding clean, dependable power.

48 kVA / 90 kWh

Experience the future of power generation with our cutting-edge 48kVA / 90kWh Hybrid Power Unit. This versatile solution is designed to meet the evolving demands of modern power needs, delivering reliable, clean energy for a wide range of applications, from construction sites and events to remote locations and critical infrastructure.

KEY FEATURES

- Delivers 48kVA of reliable power.
- Real-time control and monitoring.
- Easy to transport and deploy.

GREENER
318 kVA / 336 kWh

This hybrid unit offers a green and efficient energy solution. The powerful 336 kWh lithium-ion battery stores clean energy from wind and solar, supplemented by grid or generator power. These durable, portable containers make it easy to deploy and adapt to your evolving energy needs.

KEY FEATURES

- Powerful 318 kVA / 336 kWh battery systems
- Avoid or reduce C02 and NOx emissions
- Modular system
- Easy to install
- Real-time access to energy data

GREENER
318 kVA / 422 kWh

Flexible Power, Anytime, Anywhere.
This hybrid unit provides a reliable and adaptable energy solution. The 422 kWh lithium-ion battery ensures uninterrupted power, drawing from wind, solar, grid, or generator sources. This durable, transportable containers make it easy to deploy and redeploy to meet your changing energy demands.

KEY FEATURES

- Powerful 318 kVA / 422 kWh battery systems
- Avoid or reduce C02 and NOx emissions
- Modular system
- Easy to install
- Real-time access to energy data

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