

Do you live or are planning to build off-grid and need an efficient, fully automatic and eco-friendly system giving reliable electrical power 24/7? The Powerguard PS System is the complete solution.

The Powerguard PS System

The Powerguard PS System is the most efficient and cost effective solution for providing electrical power off-grid 24 hours a day 365 days a year. The high quality output will power all equipment designed to connect to the national electricity grid. It is very reliable with a long working life of over 25 years.

It operates with any auto-start generator to control electrical power production as efficiently as possible. This typically reduces fuel use, pollution and maintenance by more than two thirds.

It is fully automatic and will adjust itself to operate as efficiently as possible.

The PS System starts the generator to power the heavier loads during the day and when it is running uses the spare capacity to charge the batteries. The battery charge rate is adjusted automatically to keep the generator load within the optimum band for fuel economy.

In the periods when the load is lighter the PS System shuts down the generator and supplies the load from the batteries via the inverter.

In a typical mixed load application such as a domestic property or small business the generator will run less than eight hours per day. This not only saves fuel and pollution but the generator life is increased by three times and the maintenance costs are cut by two thirds.

The PS System will easily pay for itself in less than 3 years when used in a typical mixed load application.

The Generator

The Powerguard PS System will operate with your existing generator as long as it is auto-start and



A TYPICAL INSTALLATION SHOWING THE PS SYSTEM, BATTERY ISOLATOR AND PART OF THE BATTERY BANK.

will start when a relay contact is closed and stop when it is opened.

If you do not have a generator or your generator is due for replacement you should consider purchasing a Powerguard PS Generator. They are designed and built to give very good fuel economy and are more efficient than the normal standby generators available. For example they use dedicated single phase alternators which can be up to 20% more efficient than the multi wound types normally used. The generators also have many other features that make them ideal to work efficiently with the Powerguard PS System.

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Combined Heat and Power (CHP)

If the generator is purchased from us then the system can be upgraded to CHP either when ordered or retrospectively.

For every 1kW of electrical power produced by a generator approximately 2kW is wasted in unused heat. 1kW carried by hot gasses through the exhaust pipe and 1kW into the water jacket dissipated by the fan cooled radiator.

The Powerguard CHP system recovers about 85% of the waste heat for space heating and hot water.

The PS System with the CHP option brings the cost of generating your own power significantly below the cost of electricity from a utility company.

Comparison with the Electricity Grid

The most efficient fossil fuel power stations are 58%, the least efficient about 35%.

Nuclear plants vary from 19% for the oldest to 42% for the latest but are more difficult to quantify because they use much smaller amounts of more specialised non fossil fuel with very little atmospheric pollution. However they produce highly toxic waste albeit in relatively small quantities.

The efficiency of the national electricity grid is reduced further by the losses incurred getting the electricity from the power station to the point of use. The estimated average efficiency of the electricity delivered off the grid to the load is about 40-45%.

Even if the proposed expansion of grid connected wind turbines take place over the next few years the overall efficiency of the grid - that is energy in compared with energy out - will still only rise by a few percent.

The efficiency of generating your own power using a PS System with CHP can be as high as 90% which is more eco-friendly reducing the use of fuel and cutting pollution.

Generating Your Own Electricity

It is becoming more and more attractive to generate your own power because the national electricity grid is not being maintained as well as it was and will become increasingly unreliable. When the cost of oil drops electricity prices will reduce more slowly, if at all, making utility provided electricity comparatively more expensive. The price of electricity is forecast to rise by hundreds of pounds per household over the next couple of years just to pay for subsidising the increased provision of renewable energy.

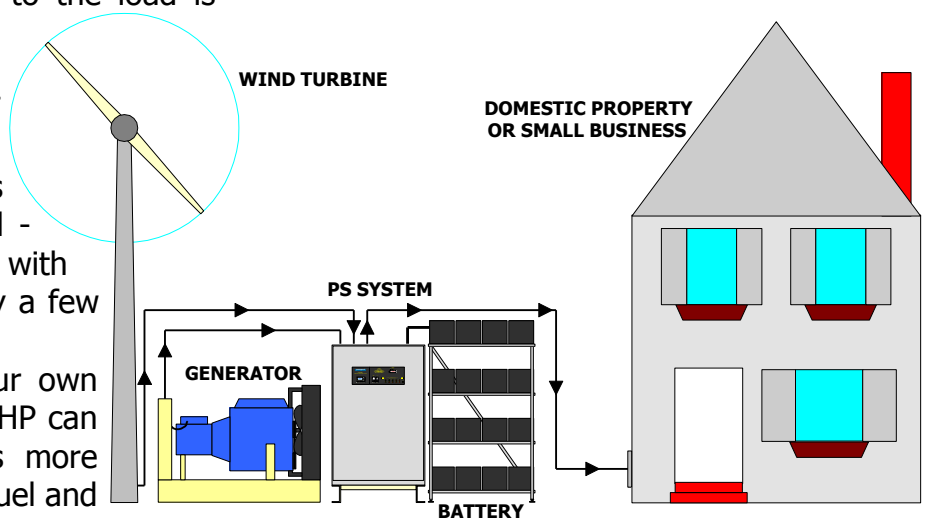
There has never been a better time to generate your own power.

Renewable Energy

The Powerguard PS System has a dedicated input for a renewable energy source such as a wind turbine or solar panels. The sophisticated control monitors the power coming into the system from the renewable source and adjusts the engine run-time accordingly.

For example even a 1kW wind turbine can make a useful contribution reducing fuel use and pollution. The PS System will monitor the charge current from the wind turbine and if the battery is charged can switch the energy into an immersion heater to provide hot water.

The Powerguard PS System is a very reliable and cost effective product. We have many satisfied users and reference sites.



SKETCH SHOWING A TYPICAL APPLICATION WITH A RENEWABLE ENERGY SOURCE