

Environmental Issues

Philosophy

At Powerguard we believe that we should do our best to save fuel and reduce pollution.

We design and manufacture the PS System to help to meet this objective as follows:-

- 1) The PS System used in conjunction with a generator increases efficiency and reduces fuel use and pollution significantly.
- 2) The PS System is designed and manufactured to give a long life in excess of 25 years without major and costly maintenance.
- 3) Generator life is increased by at least three times.
- 4) The PS System charger is designed to enhance battery life.
- 5) The PS System is designed to accept inputs from alternative energy sources.
- 6) We size the battery packs so they do not regularly discharge more than about 30% increasing the working life significantly.
- 7) The long life of the system and generator reduces the pollution caused by manufacturing replacements.

Practical

We believe that we have to give our customers a practical and economical solution that will solve their power requirements reliably over a long life.

We design and build our systems with the aim of reducing fuel use and pollution but our customers must have a practical and workable system.

We believe our customers want to operate a switch any time of the day or night and the lights come on. Those of us connected to the

national electricity grid take this for granted.

Powerguard accept that the only way to achieve that level of availability is to install an engine driven generator.

Having accepted the need for a generator Powerguard design the PS System to reduce the runtime of the generator to a minimum. Giving power 24/7 but at the same time reducing fuel use to less than one third and increasing generator life by a factor of three.

A diesel engine gives off approximately 2kW in heat for every 1kW of electricity. Powerguard can recover most of the waste heat for water and space heating making further significant gains in efficiency reducing fuel use and pollution.

These are practical solutions that are cost effective with a realistic payback.

The PS System is also fully automatic and one of the most effective solutions to providing electrical power off-grid.

Alternatives

If you are off grid and want power on tap 24/7 then there are very few practical alternatives to a Powerguard PS System.

The PS System is designed to accept power from an alternative energy source such as wind or solar if it is available. Wind power is probably the most practical in the UK and is available about 35% of the time. Solar is more expensive and needs sophisticated control to work properly but in some locations can make a practical contribution.

Alternative energy reduces fuel consumption and pollution.

Service

All mechanical systems require maintenance on a regular basis and this should be taken into account when planning a system. Engine driven generators are mass produced and sold all over the world and a typical system as supplied by Powerguard can be serviced easily with very good parts availability. It is probable that technical help is available economically in virtually all locations.

Some competing systems are another matter and spare parts are not usually as readily available. It can also be less likely that technical help is available easily and economically.

When you buy a Powerguard PS Systems you join a club with lifetime technical support. The PS Systems are built to facilitate service by third parties. It is built on a chassis with all the parts easily accessible. Circuit diagrams are included in the manual and free technical help is just a phone call away.

The electro-mechanical parts that may need service are easily accessible and can usually be purchased locally. If not we will usually despatch a replacement the same day.

Security

There is a lot of press coverage about the supply of oil in the future with most of it indicating a shortage although this is not by any means a unanimous view. It is in the industries interest for the market to believe there is a shortage because that will help to sustain high prices. Even so the worst predictions still allow that there is plenty of oil for the present and the medium term.

Unfortunately there is no viable alternative at the moment except to take steps to reduce consumption as much as possible which is precisely what the Powerguard PS System does.

We do not believe our customers need to worry about the supply of oil for generators. However if more stability and insurance is required a larger 5000 litre tank can be installed. This provides a considerable buffer because even if the tank is only three quarters full a typical Generator/PS System will run for about 2 years. A larger tank also allows you to top up when the price of fuel is lower. Generating your own power using a PS System increases your security and ability to withstand the worst price fluctuations.

Conclusion

Some of our customers talk to us about their experiences before they contacted Powerguard and the advice they were given from

various sources about providing a means of electrical power to their off-grid property. Some were misled by the advice given particularly the overstated performance of alternative energy. In some cases expensive systems were purchased that could not give the required performance.

Powerguard are very concerned about the environment and provide solutions that significantly reduce pollution and the production of greenhouse gasses. However we will not provide expensive systems that are impractical for our customers just because they appear to have better green credentials.

Sometimes the case put forward for some green technologies seems bogus. For example the burning of palm oil. To cut down a carbon dioxide consuming rain forest to industrially farm palm plants to produce oil to burn to produce electrical power does not seem to be a good idea. Powerguard are not experts in these matters but the sums do not seem to add up.

The Powerguard PS System is in itself a major step toward a significant reduction in pollution because of enhanced fuel efficiency and reduced generator run time. If the heat produced by the engine is recovered and used to provide hot water and space heating further significant reductions in pollution can be gained with quantifiable fuel savings and a predictable payback in a minimum time.

To produce power from a true renewable source such as the wind, sun, tide or rivers is a natural and laudable aim and is endorsed by Powerguard unconditionally. The PS System is designed to accept inputs from a renewable source of power such as a wind generator or solar panels. The PS System will control and monitor the power available and reduce the generator run time as much as possible further reducing costs and pollution.

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