

**Emergency generator call out or
permanently installed standby generator.
How critical is power continuity to your
business?**

July 2013

Why do you need to think about power continuity?

Vast numbers of business owners and managers do not know they have a power continuity problem. When you turn the lights on they work, don't they?

But what happens if you have a power cut? The lights may be the least of your worries.

The impact of a power cut is entirely dependent on the nature of your business or service.

For hospitals and care homes the financial impact is not the main priority, protecting the lives of patients dependant on life support machine or ventilators is critical.

For businesses such as data centres loss of power, even for a second, can have huge consequences on the infrastructure it protects. The bearing of a power cut on banks and financial institutions could impact economies globally.

For these types of businesses power continuity is a high priority, the risk is managed and protected. But what about companies with less obvious risk?

“ The Government is seriously underestimating the scale of capacity crunch facing the country. ”

**Ian Marchant, Chief Executive,
Scottish & Southern Energy
March 2013**

What is the impact of power failure for your business?

The first things to evaluate are the drivers for standby power for your business.

If the initial requirement is not life threatening or financially catastrophic then usually the next requirement is expectation. What does your business provide to your customers and what expectations do they have? How would your business be impacted and what would be the resulting effect on your customers?

Think about public expectations. Without power public expectations cannot be met; no airline bookings, no online shopping, no heating, no light.

Primary impact - income stream

- Telephones
- Computers
- All high technology power

Secondary impact - mechanical or physical issues

- Despatch scanners
- Forklift/ Equipment charging
- Access barriers not working
- Lift

What are the threats to the power supply?

Some of the main threats to the power supply are ones we are most familiar with. Over 90% of power cuts in the UK are down to human error. The power infrastructure can be damaged by workers digging up the street. This is not just a 'glitch' or a dip in power. This sort of interruption can be 3-5 hours.

Hard winter power cuts are on the rise after the heavy snow during the winters 2009- 2012. These affected homes and businesses for significant periods of time, some even for days.

Terrorism. It may sound like something out of a sci-fi film but the threat is real and apparent. How would we cope if it the worst happens?

A significant number of UK power stations are being forced to close under EU emission legislation. How will this supply be replaced?

"The Government is seriously underestimating the scale of capacity crunch facing the country"
Ian Marchant, Chief Executive, Scottish & Southern Energy - March 2013

Ofgem's own report shows that *"electricity margins, the amount of spare generation capacity on the system, could fall from 14 per cent today to 4 per cent in 2015/16."*
Ofgem – October 2012



Types of power failures

Unbeknown to most of us we are regularly subject to 'brownouts'. These would typically be for milliseconds up to 2 seconds but are not detected by the generator; it's just a dip in power. This is where a UPS system really comes into its own.

An Uninterrupted Power Supply (UPS) System will keep the phone system, and possibly the computers, operational through these 'brownouts' and over a 'short' power cut.

UPS are great for 'glitches' from 3secs to 3 minutes. But is what you have suitable for a long (in general anything over 20-30 minutes) power cut?

It is important to note that a UPS is always required, but for extended power cuts is not the whole answer.

Dealing with power failure - what are my options?

The simple answer is a generator.

The first part of the evaluation process is usually cost. How much will it cost? And the simple answer is approximately £230 per kilowatt.

The next thing to establish is the power demand. You may be able to find the information from the meter; otherwise you could get it from your onsite or local electrician. Another option is to call in a specialist power supply company who could take the reading and get it to make sense of the readings from the business point of view.

A realistic budget for a permanently installed automatic generator is £230 per KW i.e. if the maximum demand on your building is 100KW that will cost around £23,000.

Obviously there is margin for savings on larger installs and the system may cost more for smaller more complex jobs, but if you need a ball park figure that's the one.

In some instances capital expenditure for a generator is not just about the cost, it's about operational profit, or choosing an option that enables the system to be 'upgraded' as the business power requirements change.

And if the option for a generator is cost prohibitive?

If this sort of capital expenditure is not in the business's best financial interests what other options do you have?

1. Do nothing and hope a hire shop would have a generator available at the right size, and that you can find an available electrician to install it – all within an acceptable timescale.
2. Subscribe to a generator delivery network, where the equipment is already installed and ready for emergency back-up power when required. Make sure this is within a guaranteed timescale that's acceptable to your business – typically 30 minutes to 3 hours. The cost for this can be around £100 per month for the most popular generator size range.
3. Set up an agreement for a dedicated generator, kept for you in the generator specialist's yard. With this option you would pay a retainer for storage and then pay delivery and connection every time it's called out.
4. Although this is not the cheapest option it falls under operational expenditure rather than capital expenditure.

Permanently installed standby system or generator call out service?

Permanently installed standby generator

Advantages

- With the generator, power would typically be restored in less than 30 seconds and, used in conjunction with a UPS, have little to no impact on the business.
- It's immediately available.
- No availability limitations as it's an owned system within the business.

Disadvantages

- It is a depreciating asset.
- Maintenance of around £1000 per annum depending on the size.
- Businesses frequently outgrow their standby power system and upgrades are expensive. And, second hand systems do not resell well.
- Space can be an issue particularly in cities and town centres. (People are often willing to compromise the space over a short period of time that wouldn't be permanently acceptable).

Call out network

Advantages

- No capital expenditure, even the installation of the connecting equipment should be covered by the monthly call out fee.
- Not using valuable external space (car parking etc.)
- Cost effective solution (£100 - £1000 per month depending on system)
- Load can be managed to match the generator capacity.

Disadvantages

- There can be a delay while the generator is delivered
- Extreme weather conditions, such as heavy snow can make buildings inaccessible

So really, in summary if your business can tolerate a delay in power of up to 3 hours you will be secure enough with a power call out service; if not you need a generator.

It's important to note that selecting any generator requires the advice of a generator specialist. Particularly as not all equipment is compatible with each other.



Factors to consider for a power call out service

If you've decided on a call out service there are just a few further considerations

- Analysis of business power (how much do you need?)
- Time guarantees
- Vehicle access
- Managing the shutdown of the connection equipment. Preparation work includes, running cables, fixing equipment and inlet. At the time of least impact to the business a changeover needs to take place.
- Refuelling responsibility in an extended power cut of 2/3 days. (Handling hazardous liquids etc.)
- All installation needs to comply with the IEE engineering guidelines 17th edition.

Considerations for generator specification

If a generator is the best option for your business then there are just a few more considerations

- Engine Choice
- Fuel Types
- Alternators
- Fuel System
- Acoustics
- Exhausts
- Loads
- Changeover Systems
- Control Systems

Conclusion

The requirement for standby power will vary depending on each individual business and the risk to income and customer expectation.

Evaluating the risks and managing expectation is the first place to start. Select the best option and work with a proven partner to get the right advice and deliver the best system for your needs.