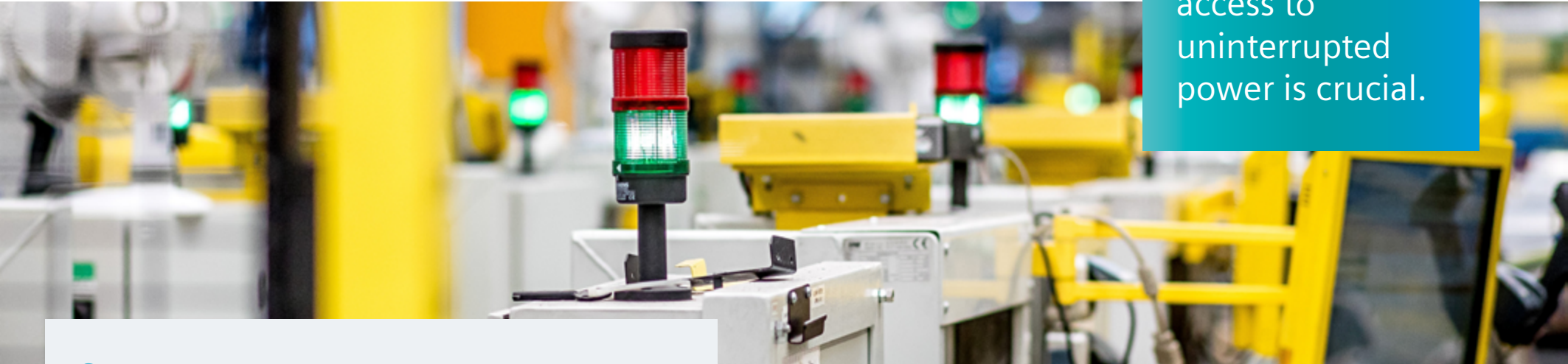




The need for energy resilience

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In every industry,
access to
uninterrupted
power is crucial.

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Introduction

No matter your industry, access to reliable, uninterrupted power is fundamental. At best, the damage caused by electrical failure can impact all aspects of a business' operations. But the situation can rapidly become more serious. Whether that's millions of pounds in unplanned costs or – in a worst-case scenario – **loss of life**¹.

Yet despite the business criticality of your energy supply, many businesses can't confidently claim that their electrical equipment is in the best possible shape. Years of reactive maintenance, ad-hoc fixes and incorrect service practices handed down over decades have led to equipment existing at various stages of health, potentially unable to cope with the increasingly heavy and complex demands placed upon it.

To perform and deliver to the best of their ability – and to avoid the damaging consequences of blackouts or even brownouts – businesses must change their approach to energy management. Fortunately, there's a clear process to futureproof your electrical infrastructure, helping you keep the lights on, now and in the future.

Did you know?
3% of all working
days are lost in
manufacturing
through machine
downtime,
costing UK
businesses
£180 billion²
each year.

¹Powering healthcare: Continuous uptime in the medical sector

²Downtime costs UK manufacturers £180bn a year

The challenge of managing electrical infrastructure

Those responsible for managing energy often have limited visibility of assets relied on for both day-to-day and critical power, which makes it difficult to pre-empt asset failure.

Gaining a clear oversight of every asset is far from straightforward, particularly when sites are made up of a complex patchwork of legacy and modern equipment. The grid below shows potential issues that can arise in various areas or assets:



Asset or Area	Likely Issue or Failure Cause
Switchgear insulation system breakdown	<ul style="list-style-type: none">• Causing flashover or SF6 gas, oil, compound leaks
Lack of, or incorrect inspection	<ul style="list-style-type: none">• No early identification of failure signs• Poor maintenance procedures• Out of specification components• Mechanism or mechanical failures• Poor lubricant use (not using OEM recommendations)
Lack of OEM spares	<ul style="list-style-type: none">• Use of cannibalised components from other assets
Poor reconditioning strategy	<ul style="list-style-type: none">• Decades of temporary fixes from different teams
No predictive mechanism to alert to asset issues	<ul style="list-style-type: none">• Lack of ability to accurately foresee issues from IEM installed base data• Failure is often unforeseeable
Handed-down maintenance training	<ul style="list-style-type: none">• Lack of updates to training and best practice• Bad habits set in, as well as good knowledge• No retraining direct from OEM

Thanks to the mix of legacy and modern equipment within a network, it can be difficult to monitor the health of every electrical asset or recognise the warning signs of equipment failure. Responsibility for full site maintenance can rest on the shoulders of a small team, which can lead to a reactive, rather than proactive maintenance strategy – in which it's not possible to see what needs to happen next. And, when maintenance does happen, it's based on in-house fixes, not OEM guidance.

All the while, those in charge of energy management have to maintain day-to-day operations, responding at speed to issues across the network, often on sites which have evolved and changed format over a number of years. Extensions and new buildings add to this complexity, as protection settings have not always been optimised in line with changing operations. There are broader issues at play, too. The growing burdens of compliance, industry regulations, supply chain expectations and green energy targets create additional pressure.

It all adds up to one thing: risk. And in a world where risk could mean anything from business inconvenience to lives on the line, this is an issue that everyone from site managers to the board room must address.

Rising risk

A lack of visibility makes it difficult to see, or truly appreciate, the level of risk within your power infrastructure – even as that risk rises. Potential outcomes of electrical asset failure could include:

- Interruption to business operations
- Frustrated customers
- Damage to business reputation
- Failures in the supply chain
- Business critical failures
- Significant costs (either in lost revenues or fines)
- Personal or business liability
- Risk to life (including staff, site visitors and those relying on critical infrastructure)

With the potential outcomes of energy failure so severe, there are questions to be asked. Why aren't more businesses already taking a proactive approach to energy resilience? And how can businesses shift their mindsets, their maintenance approach, and their strategies moving forward?



Risk management with resilient energy

Risk can never be eliminated entirely – but with an effective energy resilience strategy, it can be managed and mitigated. Siemens' energy resilience offering, Resilience as a Service, considers the health of electrical assets from every angle, using a multi-pronged approach to ensure that risk can be identified and managed effectively. When things do go wrong, it also ensures the fastest and most efficient resolution can be found.


Along with reassurance about operational effectiveness, this gives businesses peace of mind that they can comply with key health and safety regulations – like the provision and Use of Work Equipment Regulations (1998), which requires that equipment is safe for use and maintained in a safe condition. And in addition to the operational and safety benefits this offers, this approach also makes financial management easier. With an ongoing resilience strategy, unexpected costs are limited, with budget spread out in a manageable fashion across the year.




With an ongoing resilience strategy, unexpected costs are limited, with budget spread out in a manageable fashion across the year.

The Siemens approach

Risk identification

 Remain in the dark about risk

 Identify risk, understand issues and create visibility

The risk you've never known

Making the shift from a reactive repair stance to a proactive strategy is challenging for many businesses – particularly when it comes to the investment required. For those who have never experienced an electrical failure, the cost seems hard to justify. Yet just as it wouldn't be wise to delay until a fire happens to insure a house, when it comes to energy resilience, past data doesn't predict future events.

Waiting for equipment to fail is a high-risk strategy, and the losses can be catastrophic. Proactively mitigating the risk is ultimately a better way to manage risk, financial investment, and safety.



Risk management



React to failures, and fix on an ad-hoc basis



Proactively manage electrical assets and maintain their health to mitigate risk

An objective analysis of your risk

When managing a complex patchwork of assets, factors beyond the actual health of machinery can often play a part in decision making – whether that's budget constraints, human resource, or vested interests from certain parties. Somebody working in risk management, for example, might be far more inclined to take action than a site manager with various other time-sensitive concerns to juggle. As such, accurately assessing the level of urgency and risk within a business is often difficult. An objective third-party viewpoint is invaluable to analyse the risks at play, helping you make decisions and budget for maintenance and repairs in a purely risk-and-needs based manner. This also ensures that as knowledge and training is passed down, only the best habits remain.



Efficient issue resolution



Engage multiple engineers with a drawn-out repair process



Fix faults fast, on-site, with access to the best parts



Our engineers have an unparalleled ability to solve problems, repair assets on-site, and advise on the best path for your unique set-up.

Preparing for the energy challenges of today and tomorrow

The strain felt by many site managers will increase in the coming years. Along with existing challenges, a number of macro issues will pile on the pressure: increasingly stringent health and safety measures, for example, could place a greater burden on businesses to ensure that any asset failure is prevented. Elsewhere, net carbon neutral targets will be front of mind for businesses large and small, with the sustainability of current electrical assets called into question.

From investing in green energy generation that integrates with older equipment while removing the need for SF6 generating equipment, to investing in more energy efficient assets, there's plenty of work that needs to happen, regardless of the health of existing components. Yet none of this should give businesses cause to delay on investing in electrical energy resilience. Especially since, as assets age across the estate, the risk of failure only grows higher year by year.

Embracing a robust resilience strategy in the present will help save time, stress and strain in the future – boosting operational efficiency, business performance, and most importantly, minimising risk.



A resilience strategy helps save time, stress and strain in the future.

Find the answers to your resilience questions:
[siemens.co.uk/energy-resilience](https://www.siemens.co.uk/energy-resilience)

Or get in touch with our experts **[here](#)**

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