

Ensure the resilience of critical health services to protect patient care

Powering a sustainable future for the healthcare sector



The percentage of healthcare respondents who stated that “ensuring uninterrupted operation of critical healthcare/care facilities” is one of the biggest challenges facing their organisation in the next 12 months.¹

How robust are your energy estates?

Few industries rely on the continuity of their energy supply quite as critically as healthcare. Clearly, a power outage can have catastrophic consequences, leading to wasted resources, missed targets, and endangering patient care.

Worryingly, not all healthcare sites have robust plans to ensure their energy estates are well maintained, resilient and legally compliant. Limited budgets and conflicting priorities often restrict spending that doesn't immediately impact frontline services.

But to protect your patient care, we believe it's essential that you implement an energy strategy that ensures the resilience of your critical services.

The high costs of failure

Today's unprecedented pressure on NHS finances means that no part of the service can afford to absorb the costs of lost output. Any downtime – especially if it results in wasted resources – can increase costs, decrease productivity and derail the ability to meet performance targets. More importantly, cancelled procedures or failures of vital equipment have a serious impact on patient care and staff satisfaction.

For patients, the physical and psychological costs of cancelled or delayed procedures can compound already stressful situations. Delays in treatment can even threaten life expectancy.

For clinicians, nurses and other healthcare professionals, stress levels are increased by growing waiting lists, further difficulties in meeting targets, patient distress and frustrations at being prevented from doing their jobs in the way they want. There can also be a safety implication for staff and patients if critical systems, such as ventilation, are not functioning effectively.

Operational issues

Stringent directives are also putting greater pressure on operational functions. Operating theatres, for example, must adhere to strict regulations on ventilation (measured as air changes per hour), temperature (usually between 18–25°C) and humidity (below 70%).²

As well as external regulations, the NHS' own initiatives are creating their own demands. With the Driving Digital Maturity Programme increasing reliance on digital technology across all aspects of healthcare, a reliable power supply becomes even more critical. For healthcare providers to succeed in being paper free at point of care – a major priority across the NHS – they must ensure that frontline staff have access to digital patient records in a secure, timely and reliable manner. Access to this critical information enables effective decision making and improved patient outcomes. Without it, the impact on patient care and time to treatment can be serious.

£1,200 per hour

The approximate average running costs for operating theatres in the NHS back in 2009 – a figure that is likely to have since risen – according to The NHS Institute for Innovation and Improvement³

£193–£413 million each year

The estimated cost of cancelled surgeries to the NHS, as reported by Public Finance⁴

77%

The percentage of healthcare respondents who agreed that the cost of being energy resilient is far less than the impact of an energy failure⁵

Safeguarding supply and patients: the role of energy

From wasted resources and missed targets to the ultimate risk of endangering patients' lives, the impacts of power dips or outages can be catastrophic. Duty of care to patients and staff makes ensuring the resilience of all parts of healthcare energy estates paramount.

Yet power interruptions that impact service provision are all too common. In a recent survey for Centrica Business Solutions, 46% of healthcare respondents stated that their organisation had suffered an interruption of energy supply due to external factors in the last 12 months.⁶

Even more alarming is that, despite the risks, 71% of healthcare respondents don't have comprehensive energy continuity plans in place, with backup generation or standby power at most of their sites.⁷ With the stability of grid supply being variable depending on geographic location, this puts a huge number of patients at risk of exposure to the impact of interrupted power supply.

Variable quality increases your risks

Exposure to power outages are not healthcare providers' only vulnerability. Even with an operational supply, if the quality is variable due to poorly functioning energy systems, then it may damage sensitive medical equipment and shorten the life of expensive assets.

For many healthcare facilities, outdated energy systems are not just increasingly prone to failure, but also pose the risk of compliance breaches. If an operating theatre can't maintain the correct ventilation, temperature and humidity range, it has to be closed, with significant implications for costs and patient care.

These risks are increased by the lack of routine maintenance that results from restricted budgets, staff shortages and skills gaps.

The new solutions for improving your resilience

Limiting and managing risk means taking advantage of newer energy technologies and approaches to managing energy. Healthcare providers can then take ownership of their energy supply, balancing grid supply with on-site generation to improve operational resilience.

Improving supply security can be relatively easily achieved with modern technologies:

- **Combined heat and power (CHP) systems, backup generators and renewables (such as solar)** enable on-site energy production that is efficient, provides a stable, resilient supply and reduces dependency on the grid.
- **Today's high-powered lithium-ion battery storage systems** provide sufficient energy to power buildings for an extended period during a supply failure.
- **Outsourcing energy management to a specialist provider**, such as Centrica Business Solutions, can ensure that energy estates are effectively managed and maintained, including routine upgrading or replacement of outdated infrastructure.

Securing supply for Shrewsbury and Telford NHS Trust

We provide a fully managed, integrated energy solution for Shrewsbury and Telford NHS Trust. This includes a combined cooling heat and power (CCHP) trigeneration system, a new building energy management system and a comprehensive operations and maintenance package.

Improving operational efficiency

As well as ensuring a reliable energy supply, newer energy technologies can play a wider role in improving operational resilience within healthcare facilities. For example, energy sensors – which monitor energy usage at device level – can help provide early warning of potential equipment failures by detecting anomalies in energy consumption patterns. This enables preventative maintenance to be carried out on important healthcare equipment before failures occur.

66%

The percentage of healthcare respondents who thought that sources of back-up supply in the event of a power outage were very important⁸

71%

The percentage of healthcare respondents who do not have back-up/standby capability implemented at most or all of their sites⁹

£5.5 billion

The approximate costs of backlog maintenance (maintenance which should have happened but has been delayed) across the entire NHS's facilities estate, as indicated by NHS data¹⁰

¹ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

² Royal College of Ophthalmologists: Theatre facilities and equipment, Feb 2018

³ Improving quality and efficiency in the operating theatre, The NHS Institute for Innovation and Improvement

⁴ <https://www.publicfinance.co.uk/news/2017/05/nhs-faces-huge-loss-time-and-money-cancelled-surgery>

⁵ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

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⁷ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

⁸ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

⁹ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

¹⁰ 2016/17 Estates Return Information Collection, NHS Digital, 2017



£500k

We helped University Hospitals of North Midlands NHS Trust save £500k per year – equivalent to approximately 20 full-time nurses – by installing a CHP unit.

Your priorities

Our experience of working with healthcare providers has highlighted the energy strategies that we believe you should prioritise, enabling you to ensure the resilience of your critical health services:

- **Ensure that you have a robust back-up solution** – including on-site generation, standby power and storage – that covers interruptions to power supply.
- **Focus on upgrading or replacing unreliable infrastructure**, taking advantage of flexible financing solutions to overcome capex constraints.
- **Establish robust equipment monitoring and maintenance procedures** to minimise downtime and prolong the life of valuable assets.
- **Explore options for reducing reliance on over-stretched in-house maintenance teams** so that monitoring and compliance does not detract from the day-to-day running of your organisation.

Our solutions

Our work with NHS trusts means we are ideally placed to help you achieve critical health services resilience, protect patient care and maximise your operational efficiency. We do this through our:

- **On-site generation (CHP and backup generators) and storage solutions** that ensure a secure and scalable supply while reducing your exposure to grid failures.
- **Insights and sensor solutions** that enable early detection of potential equipment failures and inform preventative maintenance programmes.
- **Full operations** and maintenance support of energy assets that ensure the reliability of your on-site infrastructure.
- **Expert advice and advanced energy management platforms** that help provide a safe, secure and compliant environment.
- **As-a-service options** that ensure a secure energy supply, while overcoming internal capex and resource constraints.

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