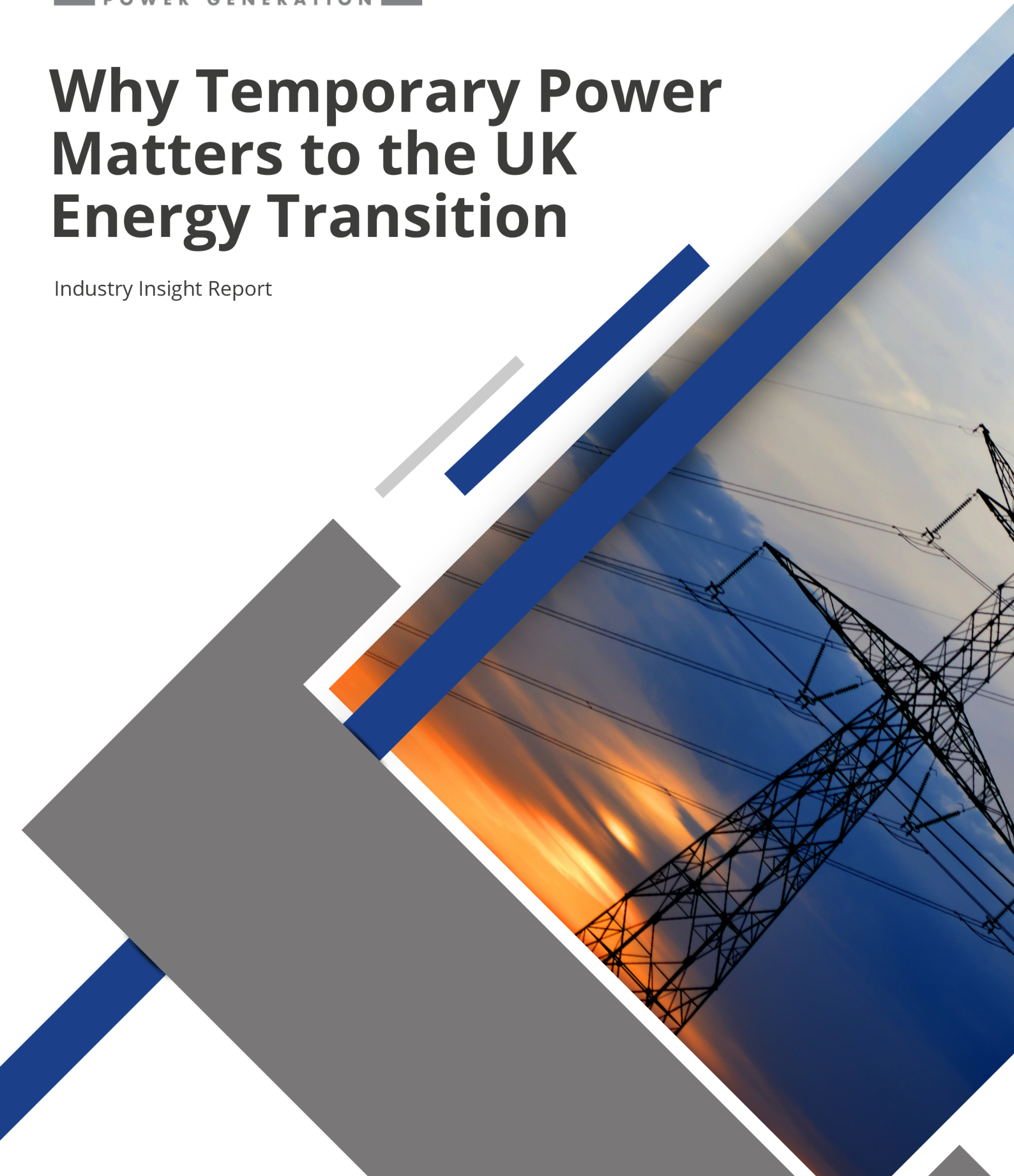




Why Temporary Power Matters to the UK Energy Transition

Industry Insight Report





The Invisible Engine of Change

INTRODUCTION

The United Kingdom is currently embarking on a monumental engineering challenge: the Clean Power 2030 Action Plan. This is the government's ambitious deadline to remove fossil fuels from our electricity generation, a process known as decarbonisation. The ultimate goal is Net-Zero, where the amount of greenhouse gases we add to the atmosphere is no longer greater than the amount we remove.

However, there is a central irony in this transition. To build a permanent, green future, we rely on mobile, temporary energy solutions today. In the world of energy education, we call this operational continuity.

Imagine trying to change the engines on an aeroplane while it is still flying at 30,000 feet. We cannot simply "turn off" the country while we upgrade the wires. Hospitals must stay powered, schools must stay warm, and businesses must keep running. Temporary energy serves as the "invisible engine," providing a seamless bridge of power while the old grid is dismantled and the new network is built.

While the vision of 2030 is often illustrated with sleek wind turbines and solar farms, the physical reality of the current power grid requires a massive, behind-the-scenes effort to stay upright.

THE SCALE OF THE CHALLENGE: BREAKING THE GRIDLOCK

To understand why we need a "bridge," we have to look at the sheer scale of the UK's energy ambitions. For years, the country faced a "gridlock" where new renewable projects were stuck in a massive queue, sometimes waiting over a decade just to plug into the national network. Recent reforms by the National Energy System Operator (NESO) are finally beginning to clear this backlog.

The following table breaks down the staggering figures behind this national upgrade:

THE NUMBERS BEHIND THE TRANSITION

Category	Metric	Significance
Current NESO Pipeline	283 GW	Generation and storage projects being fast-tracked.
Demand Capacity	~100 GW	Transmission-connected demand currently in progress.
Historical Grid Queue	700+ GW	The massive backlog of projects waiting for connection.
Maximum Wait Times	Up to 15 years	The "gridlock" period projects faced before recent reforms.

The "hidden challenge" isn't just building these new assets; it is protecting the essential services of daily life during the construction.

When a local substation is upgraded to handle more wind power, the nearby hospital or school cannot go dark. These delays and complex upgrades require a flexible, temporary bridge to ensure the lights stay on for everyone.



THE TECH STACK: DELIVERING RESILIENCE AND SUSTAINABILITY

In the past, there was often a choice between "uptime" (keeping the power on) and "emissions" (protecting the environment). Today, a "Greener Toolkit" of technology allows us to achieve both simultaneously.

01

Stage V Generators

These engines are the gold standard for clean air, specifically designed to reduce harmful Nitrogen Oxides (NOx) and particulate matter (soot) compared to older models.



02

HVO (Hydrotreated Vegetable Oil)

This is a "drop-in" fuel made from renewable waste fats. It provides an immediate, massive reduction in lifecycle carbon emissions without needing to change the engine at all.



03

Battery Energy Storage Systems (BESS)

Batteries allow for "silent running." They store energy during the day and take over at night, which is vital for infrastructure located near residential schools or hospitals.



04

Telemetry (MEMS Connect)

This is the "brain" of the operation. Real-time data and 24-hour control rooms allow experts to monitor fuel management and energy use, ensuring no power is wasted.



PROOF OF CONCEPT: THE 43% EFFICIENCY GAIN

A recent deployment by MEMS Power Generation provided a perfect "living lab" for these technologies. By using MEMS Connect telemetry, engineers monitored the site's actual power needs 24/7. They discovered clear peaks between 9am and 4pm, with a significant drop in demand overnight. Running the generator around the clock wasn't just unnecessary – it was inefficient.



By integrating a 45 kVA battery storage system and using data to manage the load, the team transformed the site's efficiency.

Project Outcome: Over the final 31 days of operation, fuel consumption was slashed from a projected 5,888 litres to just 3,346 litres. This represents a **43% reduction** in fuel use and emissions achieved through smart telemetry and battery integration.

This result proves that the transition isn't just about "bigger" infrastructure; it's about "**smarter**" **temporary solutions** that prevent waste during the building process.

[VIEW CASE STUDY](#)

CONCLUSION: POWERING THE FUTURE

Temporary energy is the unsung hero of the Net-Zero journey. While it may not have the fame of a massive offshore wind farm, the transition to clean power would be impossible without the stability and flexibility these "hidden" systems provide.

Three Key Takeaways

1. **Keep the lights on while we level up:** We cannot build a green future if we can't maintain "operational continuity" today.
2. **Proactive, not Reactive:** Modern temporary power is a high-tech, planned strategy, not just an emergency backup.
3. **Data-Driven Decarbonisation:** Tools like HVO fuel, Stage V engines, and telemetry allow us to cut emissions by 40% or more even before the permanent grid is finished.

An aerial photograph showing a white MEMS truck driving on a winding road through a green landscape. In the background, several wind turbines are visible on a hillside under a cloudy sky. The truck has 'MEMS' and 'LOW EMISSION' branding on its side.

The UK's energy transition depends on more than building new infrastructure. It depends on keeping power flowing while tomorrow's network is being built.

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REFERENCES & SOURCES

The information, statistics and policy references within this report have been compiled from publicly available publications produced by UK government departments and the electricity industry.

Primary Sources

Clean Power 2030 Action Plan: A New Era of Clean Electricity (Main Report)

Department for Energy Security and Net Zero (DESNZ)

<https://www.gov.uk/government/publications/clean-power-2030-action-plan/clean-power-2030-action-plan-a-new-era-of-clean-electricity-main-report>

Clean Power 2030

National Energy System Operator (NESO)

<https://www.neso.energy/publications/clean-power-2030>

Supporting Industry Information

Open Access Government.

UK Government aims to cut national electricity grid connection delays and prioritise growth projects

<https://www.openaccessgovernment.org/uk-government-aims-to-cut-national-electricity-grid-connection-delays-and-prioritise-growth-projects/206227/>

MEMS Power Generation Data

The operational case study, fuel savings and battery storage performance data presented in this report are based on a live MEMS Power Generation deployment. Performance data was collected using MEMS Connect telemetry and reflects measured operational results from the project.

Disclaimer

Every effort has been made to ensure the information contained within this report is accurate at the time of publication. Statistics, policies and guidance are subject to change. Readers should refer to the original source publications for the latest information.

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