

Power Pulse

September 2025

A monthly snapshot of the ever-changing power outlook in the UK



'It is important to share these new ideas and what has worked elsewhere to demonstrate what's possible'

Tom Shilton, Director

As we find ourselves in 'back to school' season, this issue of Power Pulse highlights the need for new ideas as the UK's electricity demand grows. We highlight examples of what's happening at a government, corporate, and community level to support energy users. For example, private wire renewables, and talks of further regulatory reform for hydrogen and nuclear.

There is a strong theme of democratisation of power in the industry right now. With this in mind, it is important to share these new ideas and what has worked elsewhere to demonstrate what's possible and to expedite the UK's journey to net zero.

Spotlight of the month

Nuclear innovation goes circular

In recent news, we've seen that 2024 was a record-breaking year for global nuclear electricity generation. This is set to continue in 2025. Meanwhile, an annual survey from Radiant Energy Group found that public support for nuclear energy continues to outweigh opposition.

With nuclear set to play a much bigger role in the UK in the future, it is good to see strong themes of circularity in the ways people are looking to harness the byproducts from nuclear energy generation. For example, depleted uranium and carbon-14 are powerful energy sources. Radioactivity is already used safely in everyday products such as smoke detectors. But there is still room for innovation.

This summer, the Japan Atomic Energy Agency announced what it believes is the world's first uranium-based rechargeable battery. It says it uses depleted uranium to generate electricity, and that it has performed well in tests. If commercialised and scaled, this kind of technology could support a low-carbon energy future by storing and distributing renewable energy when it is needed.

Last year, the UK Atomic Energy Authority and the University of Bristol announced the world's first carbon-14 diamond battery. Carbon-14 is used in radiocarbon dating and has a half-life of 5,700 years. They say the technology could be used to power devices like pacemakers for thousands of years.

There are huge opportunities to build circularity into our energy system. Doing so will reduce waste and carbon emissions. These are just two examples of what is happening in the nuclear sector.

Peter Sibley, Director



'We have noticed clients looking for greater certainty over their energy costs'

Solar

With electricity prices going up, we have noticed clients looking for greater certainty over their medium- to long-term energy costs. There are several ways they are looking to achieve this. These include on-site renewable energy generation, behind-the-meter solutions, and private wire contracts with a nearby solar or wind farm. These strategies can be attractive where your objectives include increasing cost certainty for the next 20 years, say, and decarbonisation.

There is high demand for private wire because you can lock in a price, avoid certain fees, combine it with battery storage to reduce grid demand, and decarbonise your energy supply. However, it is critical to seek advice on finding the right developer, technology, and design for your needs.

Tom Shilton, Director

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'Early dialogue with DNOs allows them to incorporate sites into their long-term plans'

Grid

UK grid connection dates are now as far out as 2037. As such, early engagement with Distribution Network Operators (DNOs) is even more critical and should be at the forefront of any site-finding and feasibility work. This applies even during land promotion and when working with local authorities on local development plans and land allocation. Why? To make DNOs aware of sites from the outset.

Developers and landowners may not be ready to secure power at this early stage. However, early dialogue with DNOs allows them to incorporate sites into their long-term planning, future network capacity, and reinforcement strategies. This proactive approach helps developers to align their timelines with infrastructure realities. And it reduces the risk of costly delays.

Eleanor Wratten, Associate

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'Costs could also fall due to new revenue streams and technologies'

Geothermal

The Department for Energy Security & Net Zero released a major new report this month. It provides the updated costs of geothermal power and, for the first time, the cost of geothermal heat. Under certain scenarios, geothermal power costs can be not much greater than those of mature offshore wind and large-scale solar farms. Costs could also fall due to new revenue streams such as heat, lithium, and technologies such as enhanced geothermal systems. Other highlighted benefits include low-carbon baseload power generation, little land-use, and the potential for integrated heating and cooling solutions, which would reduce overall site electricity demands.

This visibility of overall costs, alongside a new [geothermal data platform](#) from the British Geological Survey, will help policymakers, developers, and professionals to drive the rollout of geothermal in the UK.

Leon Warrington, Technical Associate

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Nuclear

The Nuclear Regulatory Taskforce has published its first interim report on the suitability of the UK's existing regulatory framework to support its nuclear growth ambitions. The nuclear market has evolved rapidly, so it is not surprising to hear that the system needs 'radical reform'. But this is the first time this has been acknowledged in an official report.

The government has already taken steps to ease the path for [small modular reactors](#)—most recently by reaffirming an [agreement with the United States](#) to cooperate to expedite nuclear development in both countries. We can expect future reforms to further help reduce the cost and timescales involved in developing new nuclear facilities.

The challenge now is to achieve greater flexibility and expediency without compromising on nuclear safety. No two nuclear projects are the same. The technology, scale, or site for example may differ. The report acknowledges that the UK has always done well to achieve this balance. It now has a chance to maintain its world-leading reputation.

[Peter Sibley](#), Director

[EXPLORE THE TASKFORCE'S INTERIM REPORT](#) →

Hydrogen

In late August, I attended an event with industry and government representatives to discuss Scotland's green hydrogen future. While the impact of the Committee for Climate Change's [7th Carbon Budget](#) (CB7) on the recent [Hydrogen Allocation Round](#) (HAR2) shortlist announcement was still front of mind for the industry, there were a lot of positive takeaways from the day.

A number of well-developed projects were excluded from HAR2 due to a large reduction in forecasted UK hydrogen demand in CB7. Hydrogen is now primarily expected to be used in hard-to-abate industries. It was agreed that a more joined-up approach between government and industry should be sought ahead of future allocation rounds.

The UK government is also considering an extension to the [Clean Industry Bonus](#). This would make hydrogen projects eligible for additional revenue support. We also learned that Scotland's [Th2istle project](#) has recently secured EU funding to develop a 'hydrogen valley' in the North East of Scotland.

[Neil Calder](#), Principal Consultant

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'We are seeing more interest from our clients in private wire renewables'

Wind

Balancing Services Use of System (BSUoS) tariffs are set to change this October. They are going up by £3.70 per megawatt-hour from the draft estimate to £15.69 per megawatt-hour. As energy costs rise, we are seeing more interest from our clients in private wire renewables. These direct connections between on-site renewable energy assets and users bypass grid charges. As such, they offer price stability against market volatility.

More building owners and developers are now turning to private-wire wind and solar projects to secure predictable, low-carbon power. It enhances their sustainability credentials. It also shields them against wholesale price swings. The benefits? Cost savings and faster net zero alignment.

Joseph Padbury, Associate Director

SEE EXAMPLE OF COED ELY SOLAR FARM POWERING LOCAL HOSPITAL →

'Commercial fleets are set to consume half of all EV charging energy'

eMobility

According to a report from Transport for South East, commercial fleets account for just 15 percent of UK vehicles. However, the same report says they generate over 40 percent of carbon dioxide emissions from road transport and are set to consume half of all electric vehicle (EV) charging energy once fully electrified. This last statistic means that strategic infrastructure planning is critical. We need to install the right types of chargers, in the right quantities, and in the right locations. We also need to identify where grid upgrades are most needed. In the past, organisations may have faced challenges such as fragmented and low granularity of data. However, AI-based tools like StratEV and ZEVDecide are helping to pinpoint demand hotspots and optimise infrastructure deployment.

Ben Bowler, Technical Director

WHAT IS ZEVDECIDE? →



'More organisations are exploring the opportunity to use battery storage to support critical loads'

Battery storage

Diesel generators have long provided energy supply backup. As the UK transitions away from fossil fuels, more organisations are exploring battery storage to support critical loads when needed. We are looking at this for a large pumping station and expect to see more feasibility studies like this in the coming year.

For some energy users, it is too early in their own transition journey for them to feel confident to make the switch. For others, it goes hand-in-hand with their exploration of behind-the-meter solutions as part of a low-carbon, lower-cost power solution (see Solar section).

As well as providing resilience and grid-balancing services, batteries can provide an income stream by selling power back to the grid.

Tom Shilton, Director

THE CASE FOR RENEWABLES AND BATTERY STORAGE →

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