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INSIDE THIS ISSUE:

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INSIDE

UK WORKPLACE STUDY REVEALS AI USAGE NOW CONSUMES 1.37GWH OF ELECTRICITY A YEAR

New research from Uswitch Business Energy, the comparison and switching service, estimates that the average workplace team generates around 24 AI prompts each working day, from drafting emails and creating content to analysing information and automating routine admin.

To estimate the national impact, Uswitch combined its survey findings with YouGov research showing that 32% of British workers use AI in their jobs and Gallup research on average workplace team sizes. Assuming an average team of 12 employees, each generating two AI prompts per working day, this suggests that up to 11 million workers across Britain's workforce of 34.4 million people generate an estimated 22 million AI prompts every working day.

While a single AI request uses only a small amount of electricity, the cumulative impact is significant. Using Google's estimate that a typical Gemini text prompt consumes around 0.24 watt-hours (Wh) of energy Uswitch estimates workplace AI usage consumes approximately 5.28 MWh of electricity each working day. Assuming a standard five-day working week, this equates to around 26.4 MWh per week and approximately 1.37 gigawatt-hours (GWh) each year.

This is enough electricity to power around 508 typical UK homes for a year, based on Ofgem's Typical Domestic Consumption Value for annual household electricity use.

The research found differences in reported AI usage across sectors, with IT & Telecoms teams reporting the highest estimated level of AI-assisted activity (35 tasks per team per working day), followed by Finance (29), Education (22), and Healthcare (21).

TOP 5 INDUSTRIES BY AVERAGE DAILY AI PROMPTS

- IT & Telecoms – 35
- Finance – 29
- Education – 22
- Other – 21
- Healthcare – 21

The research found that employees aged 25-34 reported that their team completed an average of 30 AI-assisted tasks every working day, the highest of any age group. Workers aged 18-24 report that their teams average 27 AI-assisted tasks, while workers aged 55 and over report that their teams complete just 18 AI-assisted tasks per day.

Ben Gallizzi, energy expert at Uswitch, comments: "AI has rapidly evolved from an emerging technology into an everyday business tool. As more organisations adopt AI to support tasks such as content creation, customer service and administration, the cumulative energy demand from these tools will continue to grow.

"Although each prompt uses a relatively small amount of energy, the scale of adoption means businesses are collectively generating billions of AI interactions every week. As organisations continue to embrace AI, understanding the impact this could have on future electricity demand will become increasingly important.

"Businesses already carefully monitor energy use from equipment, heating and lighting. As AI becomes more deeply embedded in workplace processes, organisations may also need to consider how digital tools contribute to their overall energy footprint."

Ben's expert tips to help businesses reduce the energy impact of AI tools:

- **Audit your AI tool usage.** Start by understanding which AI tools your teams are using and how frequently they're using them. Usage patterns vary significantly across departments; marketing and customer service teams tend to be the heaviest users. Identifying where AI is being used most intensively can help you estimate its potential energy impact and identify opportunities to improve efficiency
- **Consolidate AI platforms where possible.** Many organisations are running multiple AI tools simultaneously across different teams, often with overlapping functionality. Consolidating onto fewer, more energy-efficient platforms can simplify workflows, reduce duplicate tasks and help teams use AI more efficiently.
- **Factor AI into your energy planning.** As AI adoption grows across your workforce, so will your energy demand. When reviewing your business energy tariff or forecasting future usage, it's worth factoring in how AI usage may evolve over time to ensure you're planning effectively for future demand.
- **Encourage efficient prompt habits.** Not all prompts are equal in terms of energy use. Training staff to write clear, precise prompts that get useful outputs first time, rather than iterating through multiple attempts, can reduce unnecessary processing. Small improvements in how AI is used, when adopted across an organisation, can contribute to more efficient and responsible use of technology.

Ben Gallizzi – Uswitch

To keep costs low, make sure you're on the right business energy tariff at **Uswitch Business Energy**.

Image: Baxi

SCHOOLS FACE HEATING DECARBONISATION CHALLENGE AS POLICY AND FUNDING LANDSCAPE SHIFTS

Schools across the UK are facing growing pressure to decarbonise heating systems as policy expectations evolve, funding routes shift and ageing estates continue to compete for limited investment.

Decarbonising the Education Estate – Policy and Regulatory Landscape, a new report commissioned by heating and hot water solutions provider **Baxi** and prepared by **Talan UK and Ireland**, maps the regulations, funding opportunities and practical considerations shaping the move to low-carbon heating across the UK education estate.

The education sector is responsible for 37% of all public sector emissions, making school estates a significant part of the UK's journey to net zero. Much of that challenge sits within the buildings themselves, as heating and powering school buildings account for 27% of emissions.

As 87% of schools continue to rely on gas as their primary heating source, improving energy efficiency and planning for lower-carbon heat will be central to reducing emissions across the education estate.

The guide explores the overarching policy frameworks and the funding and regulatory levers designed to help schools decarbonise, including:

- The Department for Education's Education Estates Strategy
- The Future Buildings Standard
- The Public Sector Decarbonisation Scheme
- The Condition Improvement Fund
- School Condition Allocations
- Great British Energy initiatives

Cost and condition pressures add to the constraints caused by emissions alone, with ageing buildings and competing investment priorities restricting schools from modernising their heating systems.

Jeff House, director of policy and external affairs at Baxi, said: "Schools are being asked to cut emissions while managing rising energy costs, ageing buildings and intense pressure on capital budgets. Heating is one of the most practical places to start, but it is also one of the areas where schools need the clearest advice. What schools need now is practical guidance that helps them understand which options are available, what is likely to work for their estate and how to plan upgrades in a way that supports carbon, cost and comfort goals."

According to the report, heat pumps can reduce carbon emissions by between 55% and 65% compared with an A-rated boiler. Hybrid heating solutions, which combine gas boilers and heat pumps, are another stepping stone for schools striving to reduce emissions amid tightened budgets.

Jeff said: "We've been in this business for 160 years – we've seen it all. Read the report. If you have questions, get in touch. We stand ready to support your school to cut carbon, reduce costs and improve pupil and teacher comfort." To download Decarbonising the Education Estate – Policy and Regulatory Landscape, click **here**.

WINNING SUPPORT FOR ENERGY-SAVING PROJECTS: INSIGHTS FROM AN ENERGY LEADER

Duncan Cockburn, BT head of energy operations and environmental compliance and a Chartered Energy Manager from the Energy Institute, looks back on what works in pitching energy improvements to business owners.

While the work of an energy manager involves finding and developing projects that help companies save energy, those projects cannot begin without obtaining the requisite approvals. Which means that communication skills are essential for the success of energy managers.

'The first conversation with the decision maker should not be, "Here's a report I've done, can I have some money please?" I found that that's not very successful,' points out Duncan Cockburn, with a touch of dry understatement.

'The hardest thing is the first sell: "I want you to spend money to do this because I tell you this is going to happen,"' he continues. As an energy manager, he takes on the role of the intelligent customer on behalf of his employer, to inform his colleagues the financial decisionmakers who will not necessarily understand the complexities of energy management. And once the first project goes well, the trust generated helps ease the way in future conversations.

But they are all sales pitches, essentially. Even at BT, which has a very strong net zero ethos, he is aware that his proposal is competing with other business ideas for the money.

'So you have to be able to say, this is better than that, because in two years' time, I'm going to pay the money back, and we're going to continue to save from that point.'

He credits Energy Institute training courses, particularly the Level 3: Advanced Energy Manager, with providing him the confidence in his abilities to put forward the business case. Or as he puts it: 'that I've got it right, that the idea is sound, that other people are doing it, that it's been tried and tested elsewhere.'

Part of that confidence came from the breadth of the course, which covers not only technical topics such as energy procurement and renewables but also human-centric topics of leadership and behaviour change.

But Cockburn also highlights the importance of the interpersonal element. In addition to the 120 hours of self-paced online training, the course features three three-day blocks of face-to-face training in London. That was where Cockburn was able to meet, and get to know, professionals like him working in very different contexts. That helped open his eyes to other ways of working.

Making the most of such an opportunity demanded good levels of communication, he says, as during conversations with other attendees he had to find a way to make them understand technical detail without having had any of experience of it. Or, as he puts it, explaining the importance of air conditioning in a telephone exchange to an energy manager at Port Talbot steelworks.

But good communication for Cockburn is also about hearing feedback while on the job. He adds: 'Being able to learn from what you're being told, particularly when it's negative, helps shape the future argument to make it more successful.'

He gives an example from his own experience, recalling how some of his early energy savings proposals involved changing people's behaviour. But they didn't land well, and faced resistance with comments such as "You can't put a 2, 3, 4, 5% reduction in cost or energy on the fact that somebody may or may not turn off a switch."

Rather than admit defeat, Cockburn pivoted towards recommending automation, which avoided the problem. 'Very quickly, a lot of my business cases were about control; taking away the human element.'

Agility, and confidence, both bolstered by training from the Energy Institute, has helped Cockburn become more successful when pitching energy management proposals to his employer.

He concludes: 'I've gone into conversations about business cases and not taken the business case I've spent six months developing, because I know that of the three that I've got, that one is just not going to win, so there's no point having the negative conversation... You can only do that when you know what you're competing against, what their priorities are, and how to communicate your own.'

The Level 3 Advanced Energy Manager face-to-face sessions return in autumn 2026. The first of three sessions takes place 5-7 October in London **Level 3: Advanced Energy Manager | Energy Institute.**

Cockburn also recently described his experiences further on the Level 3 course in a short Energy Institute video: **There's real money to be made in energy management – Here's how.**

Written by Will Dalrymple MEI, Head of Content, Energy Institute.
www.energyinst.org

WHAT NEW TECHNOLOGIES WILL WE SEE WHEN THE FUTURE ARRIVES?

Rinnai Director Chris Goggin looks at and discusses the potential next generation of energy technology ideas and appliances that could deliver economic and efficient power to residential and commercial properties in the near future. New and original approaches will replace traditional and well referenced methods of heating and hot water provision. History is saturated with case histories of a process and pattern of technological replacements.

We are not simply watching new products emerge; we are witnessing the next major transition in how heat, hot water and energy will be produced, stored and delivered. There are numerous contributing factors forcing an entire global industry's demise and parallel replacement with the introduction of technologies that are created to be more economic, efficient and eco-conscious for the consumer in both home and commercial properties

History shows that incumbent energy systems do not disappear because they are familiar, they are replaced when a better mix of cost, convenience and performance becomes available. The whaling industry is a grand example of new ideas and subsequent technology replacing older and established methods. Before Kerosene was discovered and introduced whale fat was used as an important ingredient that helped to light indoor and outside streetlamps. Archaeological evidence from 3000 BC suggests that Arctic Inuit tribes are believed to have hunted whales as a source of food and fuel. Other cultures adopted this strategy and whaling became a huge global industry throughout the 1500s and 1600s. This period of whale hunting created widespread demand for whale oil that spread across the centuries until around 1854-1856.

Once Kerosene arrived as a cheaper and mass-produced form of energy, whale blubber was no longer the key substance used for domestic and commercial fuel. The American whaling fleet of ships had been steadily built up and consisted of a peak 199 ships in1858. By 1860 – a timeline that coincides with the introduction of Kerosene, that number had dropped to 167 ships. When 1876 began only 39 whaling ships remained,

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demonstrating the effect of Kerosene upon the American whaling industry.

A continuity of new ideas regularly impacts societal consumption and the world is in another liminal period of transition that sees fossil fuels being ignored in favour of cleaner renewables and alternative synthetic energies. But how are these renewables being extracted and dispersed to paying customers?

The future of energy will not be defined by a single winner. It will be shaped by a mix of technologies that can meet different customer, infrastructure and cost realities. The technologies that will matter most are not just those that are technically possible, but those that are scalable, commercially practical and easier for customers to adopt.

Conventional methods of renewable energy manufacturing are well documented. These approaches include turbines for wind that capture, trap and circulate energy into transmission grids that keeps properties warm and is the cause for heating water.

A main criticism of wind energy is the installation of turbines that have to be constructed and installed in often scenic and rural areas. Homeowners in the local area complain of dwindling house prices and landscape obfuscating. The Chinese have begun to experiment with alternative manners of wind energy capture that seemingly eradicate these concerns.

Instead of fixed wind turbines the Chinese have begun to extract energy from offshore floating wind turbines. This new innovation looks like a blimp that hangs in the air, think of the Good Year zeppelin, shaped like a jet engine, but used for renewable power production. Utilising a portable approach to trapping and converting wind energy into electricity arrives with several immediate benefits: the first being a 40% reduction in material usage when compared to traditional fixed wind turbines. Electrical costs are also cut by a further 30%.

A floating wind turbine is positioned around 300-to-500 metres, a higher elevation than a fixed installation. this allows the capture of higher winds and therefore produces a greater yield of renewable power at a lower cost in terms of materials and revenue. Full scale commercial availability of floating wind turbines is expected.

A researcher for the Aerospace Information Research Institute (AIR), Gong Zeqi, under the Chinese Academy of Sciences is quoted as saying. "When wind speed doubles, the energy it carries increases eightfold, triple the speed, and you have 27 times the energy," (Interesting Engineering, 24th Sept 2025)

China is optimistic regarding the potential of airborne wind power. The National Development and Reform Commission will research development priorities for large-scale high-altitude wind-power generators from 2016 to 2030.

China has successfully tested this new technology and highlights a moment of change for the offshore wind industry and for renewable fuel as a whole. Other forms of renewable energy that rely on fixed technology will want to emulate this success and begin to make the harvesting of clean energy smaller or more mobile, more cost effective and less consuming of all related materials.

Identical innovation is being employed for hydrogen refuelling of cars. A cited difficulty of hydrogen powered cars is refuelling. A standard hydrogen car is equipped with a small battery that requires power from an outlet. As there are few hydrogen refuelling stations companies such as Toyota have engineered a solution.

Hydrogen cars can now be fuelled by handheld cartridges that are manually inserted. This means improved customer convenience and instant energy access to hydrogen car owners.

Although hydrogen fuelled cars are not performing at a high commercial standard, multinational brands that are renowned for solid manufacturing principles such as Toyota are introducing these ideas in anticipation of expected market growth.

Hydrogen will only move forward at pace where innovation solves everyday usability, infrastructure and convenience barriers for customers.

Toyota Motor Corporation achieved record-high global vehicle sales in 2025, selling approximately 11.3 million units and marking a 4.6% year-on-year increase. These statistics position Toyota as the global top-selling car manufacturer for the sixth consecutive year.

New innovations that supply further options to property heating and hot water are now being becoming apparent. Thermochemical energy storage can be developed and introduced as an additional option for domestic and commercial property owners who require warmth and hot water.

A thermochemical energy storage system will be able to fuel a domicile's heating and hot water through a chemical reaction. Thermochemical energy storage relies on heat from either industrial waste or power from excess solar panels that is added to materials such as salt hydrate or hydroxide. This heat breaks the materials down and separates into two distinct chemical forms.

Both forms are stored separately at room temperature that traps the stored heat. Because both forms are kept apart all heat is absorbed and can only be released by a prompted interaction. Energy is released once both separate forms are forced back together releasing the energy as strong and efficient heat for commercial and domestic properties.

There are a number of benefits associated with thermochemical storage systems, these include: very high energy density, no heat loss - can store energy captured during the summer period for winter months, temperature versatility in different applications – meaning that alternative chemical reactions can yield greater levels of heat. For example, heat of 100°C can be produced for low-grade residential heat or heating to over 800°C and can be used for industrial purposes.

In terms of energy, a majority of global leaders have realised that fossil fuels are essentially the modern-day equivalent of whale blubber. Designers and engineers of low carbon technology are working to provide the next "kerosene" and are presenting various innovative options in doing so. Technological upgrades require previous methods to be rested into history, as the process of timeless refinery continues.

Rinnai is working towards supplying all contractors, specifiers, system designers and customers with information and knowledge that improves awareness of in-coming technological options and insight into the direction of global energy supply.

Join the free Rinnai newsletter for updates on technology and policy
https://www.rinnai-uk.co.uk/contact-us/newsletter-sign

THE CHEAPEST UNIT OF ENERGY IS STILL THE ONE A BUILDING DOES NOT WASTE

Nati Harpaz, CEO of Dotz Nano Limited

For energy managers, the case for improving building performance is rarely the problem. The difficult part is turning a sound idea into a project that can compete for capital, survive procurement and deliver savings without disrupting the people who use the building.

That is especially true across older public-sector and institutional estates. Heating, hot-water and ventilation systems have often been extended over decades. Metering can be patchy. Controls may not communicate with one another. A plant room can appear to be doing its job while quietly using far more energy than it needs.

The usual response is to start with equipment: replace the boiler, install a heat pump or upgrade the building management system. Sometimes that is exactly the right answer. But buying new equipment before understanding how a building actually behaves can lock an organisation into an expensive solution without addressing the underlying waste.

The better place to start is with three practical questions. Where is energy being used? Where is it being wasted? And which changes can be measured well enough for someone to stand behind the result?

BEGIN WITH THE BUILDING, NOT THE PRODUCT

Every building has its own operating pattern. A hospital, hotel, university and council office may use similar equipment, but their occupancy, hot-water demand, operating hours and tolerance for disruption are entirely different.

That is why a useful feasibility study must go beyond a desktop estimate. It should establish a reliable baseline, combine historical bills with live metering, identify how the existing plant behaves under different loads and determine whether controls, maintenance or equipment changes will make the greatest difference.

In many cases, the first opportunity is not wholesale replacement. It may be correcting poor sequencing, reducing unnecessary run times, recovering heat that is currently discarded or matching generation more closely to demand. The aim is not to install the most technology. It is to achieve the best performance from the building as a whole.

AI NEEDS EVIDENCE, NOT HYPE

Artificial intelligence is becoming a familiar part of the energy conversation, but it should not be treated as a magic layer placed over weak data.

Used properly, software can detect patterns that are difficult to see in monthly bills. It can compare energy use with occupancy, weather and plant conditions, flag unusual behaviour and continuously adjust how connected systems operate. That can help energy teams move from reacting to high bills towards managing performance as it happens.

But the value comes from the combination of software, reliable sensors, live metering and practical engineering. If the data is incomplete or the recommended change cannot be implemented safely, the algorithm has achieved very little. Energy managers should ask what is being measured, how decisions are made, what happens if connectivity is lost and whether savings can be independently verified.

CHANGE WHO CARRIES THE PERFORMANCE RISK

Even when the technical case is strong, many projects stall at the same point: capital expenditure.

Public-sector organisations face no shortage of competing priorities. An energy upgrade must often compete with frontline services, maintenance backlogs and other essential works. A project with a multi-year payback can be attractive on paper and still remain unfunded.

Performance-based energy services offer another route. Under this model, a provider can fund, install, operate and maintain agreed upgrades, with its return linked to verified savings rather than an upfront equipment sale. The building owner avoids carrying the full initial capital cost, while the provider has a direct incentive to keep the system performing.

This is the approach we are developing through Dotz Energy, combining live data, AI-assisted optimisation and physical upgrades where the evidence supports them. The important point, however, is broader than any one provider. The commercial model should align everyone around the same result: lower energy use, lower cost and measurable carbon reduction.

The safeguards matter. Baselines must be transparent. Savings calculations must be agreed in advance. Responsibilities for operation, maintenance, data access and equipment ownership must be clear. Energy managers should also understand how the arrangement deals with changes in occupancy, tariffs or building use.

The next phase of building decarbonisation will not be won by technology alone. It will be won by combining good engineering, trustworthy data and commercial models that make action easier to approve. For many estates, the biggest breakthrough may not be a new piece of equipment. It may be removing the need to choose between reducing energy waste and funding everything else the organisation has to do. **https://dotz.tech/**

HOW A UK UNIVERSITY ACHIEVED 6.22% VERIFIED ENERGY SAVING, BUILT FOR ESOS AND SECR REPORTING

With ESOS Phase 3's second progress update due 5 December 2026, and Phase 4 qualification landing the same date, energy managers face a familiar pressure. Every figure submitted is public, and every action plan needs board level sign off. That means the numbers behind it need to hold up.

A UK university large enough to fall within ESOS's mandatory reporting threshold, its energy estate spread across multiple sites in a market town rather than a single enclosed campus, took that seriously. Across four buildings, each with different loads and equipment ages, the university installed voltage optimisation to reduce consumption, then brought that reduction under continuous monitoring through Pulse, an energy management system, to verify the saving held over time rather than fading after installation.

The results, measured rather than estimated, came to a 6.22 percent average reduction in energy use across the four sites. That translated to 59,247 kWh saved and 12.27 tonnes of CO_2 avoided, figures drawn from live monitoring data, not a one-off projection.

For an energy manager, that distinction matters more than the headline number. ESOS progress updates ask for energy consumption reduction that has been achieved, not anticipated, and SECR reporting draws on the same underlying data. A saving that cannot be verified against real, ongoing consumption figures is a liability at the point someone has to defend it, whether that is the Environment Agency or your own board.

This case also reflects something energy managers raise often, that compliance reporting itself has become a workload problem as much as a technical one. A verified savings figure that maps directly onto ESOS and SECR requirements, updated continuously rather than recalculated by hand each year, removes a step most estates are still doing manually.

Powerhub Solutions is a UK energy efficiency company delivering voltage optimisation, refrigeration energy management, solar PV and Pulse, an energy management system built for ESOS and SECR reporting, across more than 3,000 UK sites.

THE ENERGY MANAGER'S NEXT THREE YEARS: FROM BUYING ENERGY TO MANAGING THE WHOLE SYSTEM

Claire Slade, Data & Communications Manager, Major Energy Users' Council (MEUC)

For many energy managers, the job has traditionally been defined by a relatively familiar set of priorities: securing supply, managing contracts, monitoring consumption, controlling costs and keeping the business informed about changes in the energy market.

Those responsibilities are not going away. But over the next three years, they are likely to become part of a much bigger and more complex role — and this is a role MEUC, the Major Energy Users' Council, exists to support.

The direction of travel is clear. As renewable generation grows, demand becomes more flexible and the UK works towards its 2030 clean power ambitions, businesses face continued pressure to control costs, decarbonise operations and justify investment — and no individual energy manager can be expected to navigate all of that alone.

Two shifts illustrate the scale of the change. Businesses are increasingly being encouraged to change when and how they use electricity — shifting demand, managing storage, adjusting processes or participating in flexibility markets. That creates opportunities, but also questions: Is the existing infrastructure capable of responding to price signals? Is there enough data to understand the demand profile? Who within the business owns the decision — energy, operations, finance, sustainability or procurement?

At the same time, many businesses are considering electrification, on-site generation, storage, heat pumps, hydrogen, PPAs and other technologies. Each may have a compelling case in isolation, but the challenge is understanding how they interact with procurement, network capacity, operational resilience, capital investment and long-term strategy.

In other words, the question is becoming less "What is the best energy contract?" and more "What energy system does our business need?"

POLICY WILL MATTER TOO

The policy environment adds another layer. For eligible energy-intensive manufacturers, the British Industrial Competitiveness Scheme (BICS) is due to begin in April 2027, exempting eligible businesses from certain electricity policy costs. Following the Government's April 2026 update, the scheme now covers more than 10,000 businesses, with support expected to cut electricity costs by up to 25% for those eligible.

For those who qualify, this could materially change the economics of procurement and investment. BICS is only one part of the picture, though. Energy managers will also need to keep an eye on market arrangements, network costs, carbon policy, grid connections and water resilience.

None of this happens in isolation. A decision to electrify a process can increase electricity demand. Increased demand can create a network constraint. That constraint can affect the timing and cost of a project. The resulting load profile can influence procurement decisions — while the business may also be weighing a PPA, on-site generation or flexibility.

FROM MANAGING ENERGY TO MANAGING THE PORTFOLIO

This is perhaps the biggest change facing the energy manager: the role is becoming less about managing individual commodities, contracts or projects, and more about understanding the organisation's entire utilities portfolio — which means new conversations inside the business.

Energy managers may increasingly find themselves working alongside finance teams on investment cases, operations teams on flexibility, procurement on risk, sustainability teams on decarbonisation and senior management on competitiveness and resilience. It also means good data becomes essential — an organisation can't decide which sites to electrify, or whether a procurement strategy makes sense, without confidence in the underlying information.

For many organisations, therefore, the next three years will involve not just doing more but joining things up better.

THE VALUE OF THE COMMUNITY

This is one reason the energy management community matters. MEUC brings together major energy and water users alongside organisations working across the wider utilities sector, providing a forum for information, discussion and the exchange of practical experience.

That peer perspective is particularly valuable when there is no obvious template to follow: What are other major users doing about flexibility? How are they approaching procurement? Where are they investing? What has worked — and, perhaps more importantly, what has not?

LOOKING TOWARDS 2030

This is the context for MEUC's Buying and Using Utilities Live Autumn 2026, taking place on Wednesday 14 October at AMTC, Coventry.

The theme is "The Next Three Years: Managing your energy and water portfolio through to 2030" — a deliberately practical focus on the decisions major users need to make as cost, carbon, data, capacity and investment considerations increasingly overlap. The event also takes place as the BICS process moves towards implementation, making the timing particularly relevant for eligible businesses.

The event won't provide a single answer to what the future energy system looks like — few organisations could realistically expect one. Instead, the value lies in stepping back from the immediate pressures of contracts, projects and individual issues to consider how the pieces fit together, alongside hearing from experts and other major users facing many of the same questions.

Because 2030 is no longer a distant strategic target. For an energy manager, it is already influencing today's procurement decisions, investment cases, infrastructure plans and conversations with senior management.

The next three years will require energy managers to look beyond the traditional boundaries of their role, connecting market knowledge with operational reality, financial priorities, decarbonisation and long-term strategy. Buying and Using Utilities Live Autumn 2026 is where that conversation starts.

REGISTER NOW

Buying and Using Utilities Live Autumn 2026. Wednesday 14 October 2026 | AMTC, Coventry | 09.00–17.00. The event is free to attend for MEUC members and other major energy and water end-users. For more info and to register, visit **www.meucnetwork.co.uk/events/buu-live-autumn26**

WHY RESILIENT BUSINESSES ARE INVESTING IN ENERGY EFFICIENCY BUILDING UPGRADES

Mark Caskey, Managing Director, Projects, Mitie

For too long, refitting commercial buildings with technologies such as solar panels, battery storage and heat pumps has been treated primarily as a sustainability initiative. While cutting carbon emission is important, the greater opportunity for businesses lies in strengthening its long-term resilience. Organisations that invest in the upgrade and retrofit of their properties will be better placed to manage volatile energy costs and reduce exposure to market uncertainty.

With 80% of the buildings that will exist in 2050 already standing today, improving current real estate will be critical if businesses are to remain competitive and fit for the future. The question is no longer whether retrofit is needed, but how quickly it can be delivered. Achieving that will require greater policy certainty, stronger investment incentives and a workforce with the skills to meet growing demand.

THE COMMERCIAL CASE FOR RETROFIT

The business case for investing in the retrofit of commercial buildings has never been stronger. By improving the efficiency of building systems, lowering energy consumption and generating more energy on-site, organisations can build resilience into their operations and better manage long-term costs.

The results speak for themselves. Over the past three years, our energy optimisation programmes have helped customers save more than £60 million in operating costs while cutting carbon emissions by over 500,000 tonnes. For this reason, high-performing buildings are becoming increasingly attractive to occupiers and delivering more value for landlords. BREEAM-certified buildings achieve, on average, a 20.6% higher capital value, while a one-grade improvement in EPC rating is associated with a 3.7% increase in value.

As demand grows for buildings that can offer greater energy security and lower operating costs, commercial landlords who invest in energy-efficiency upgrades can command higher rents and strengthen asset values, while those who delay risk falling behind.

REMOVING BARRIERS TO INVESTMENT

Commercial buildings account for almost a quarter (23%) of carbon emissions from the UK's building stock, yet businesses do not have access to the same level of support as households when investing in low-carbon technologies.

While schemes such as the Warm Homes Plan have helped drive energy upgrades in homes, there is an opportunity to do more to encourage investment across commercial properties. Commercial landlords can claim a 100% tax deduction on certain plant and machinery, but some key technologies, including solar and water heating systems, continue to receive less favourable tax treatment. Many energy efficiency improvements also attract 20% VAT, while homeowners benefit from a temporary 0% rate on equivalent technologies.

Although organisations increasingly recognise the role of retrofit in strengthening business resilience, the cost and complexity of large-scale projects can still slow progress. Third-party funding can help bridge the gap, but for organisations to invest with confidence, regulation is still required.

SOLVING THE GREEN SKILLS CHALLENGE

Policy alone will not unlock retrofit at scale. The industry also needs the people with the technical skills to deliver it. Whether upgrading building fabric, installing low-carbon technologies or using smarter energy management systems, success depends on a workforce with the expertise to design, install and maintain this technology.

According to Essential Green Skills, without investment in green skills training, one in five retrofit and energy efficiency jobs could go unfilled by 2030. Encouragingly, the scale of the challenge is being recognised with £5 million recently being committed to help 5,000 young people develop the skills needed for the energy transition. While this is a step in the right direction, addressing a skills gap of this size will require investment at a much larger scale.

Industry, education providers and government must work together to identify skills gaps, attract new talent and ensure apprenticeship reforms are targeted where they can have the greatest impact. We offer more than 90 apprenticeship programmes, including pathways in heat pump engineering, solar technology and EV infrastructure. However, organisations can't solve this challenge alone. Building the workforce needed for the transition will require a coordinated effort.

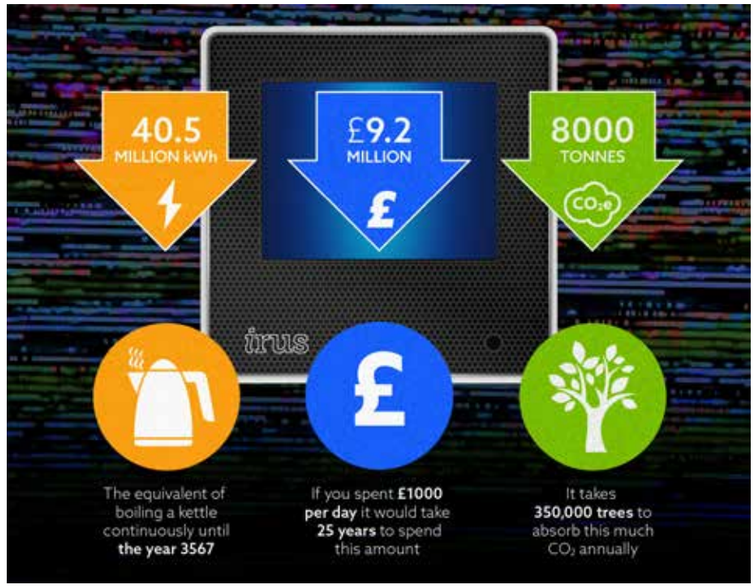
FROM AMBITION TO ACTION

The organisations in the best position to navigate an increasingly uncertain energy landscape will be those that view retrofitting their buildings as an investment in their future. While commercial retrofit is effective in reducing emissions and supporting the UK's sustainability ambitions, its primary value lies in strengthening business resilience and energy security.

The challenge now is turning ambition into action. That means creating the right conditions for investment in energy upgrades while ensuring the workforce is in place to meet demand. **www.mitie.com**

INTELLIGENT CONTROL DELIVERS 40.5M KWH SAVINGS

Prefect Controls' Irus platform has prevented almost 40.5 millionkWh of unnecessary energy use across the UK student accommodation sector during the past year, according to analysis of live system performance data.



The figures, calculated on all occupied bedrooms connected to the Irus ecoSystem as of June 2026, reveal annual savings of 40,492,535kWh, avoiding 7,985 tonnes of CO_2e emissions and delivering a combined cost saving of £9,232,536 for operators.

Importantly, reductions are achieved without compromising student comfort.

Unlike systems that restrict heating availability, Irus focuses on eliminating unnecessary heat input. Students retain full control of their environment and can activate the system's boost function whenever additional warmth is required.

SAVING ENERGY ONLY WHEN IT'S BEING WASTED

Irus continuously analyses room conditions and occupancy, reducing energy input when bedrooms are empty or when windows are opened. As soon as occupants return or close the window, normal operation resumes.

This approach is based on a simple principle: heat should be available when it is needed and not wasted when it is not.

"These savings are not achieved by restricting heating. The system simply prevents unnecessary energy consumption. Residents can always call for heat through the boost button whenever they want it." Adrian Barber – Head of Communications – Prefect Controls.

REAL-WORLD PERFORMANCE ACROSS THE LARGEST STUDENT ACCOMMODATION DATASET IN THE UK

There are more than 90,000 Irus control units installed, some deployed in communal areas or controlling services other than heat sources. This latest analysis focuses on live bedrooms controlled by the Irus Portal and comprises both electric panel heaters and 'wet' radiators.

Performance calculations are based on post-installation analysis from representative portfolios:

- Electric heating averaged 609kWh per bed reduction, based on 6,474 bedrooms.
- Wet heating averaged 815kWh per bed reduction, based on 2,007 bedrooms.

Using electricity prices of £0.256/kWh and gas prices of £0.065/kWh, the resulting annual savings across the platform amount to £9.2 million.

OCCUPANCY INTELLIGENCE RATHER THAN RESTRICTION

The PBSA sector has long recognised that occupant behaviour has a major influence on building performance. Heating empty rooms, spaces where windows are open, and the use of prohibited supplementary heaters are all situations that create avoidable energy demand and unnecessary carbon emissions.

Responding automatically to real-world conditions – by physically turning heat sources off and on – Irus ensures that energy is only consumed when it delivers genuine value.

"The scale of these figures demonstrates just how much avoidable energy consumption still exists. As the sector works towards net zero, technologies that eliminate waste while maintaining comfort will play an increasingly important role in delivering both environmental and commercial performance."

"The most important point is that there is no restriction of heating or limiting residents' ability to keep their rooms warm. Irus simply prevents waste rather than denying heat."

"Students remain in complete control whenever they want additional warmth. That balance between wellbeing and sustainability is critical. Intelligent controls enhance the resident experience while helping operators reduce carbon emissions and running costs." Gareth Chaplin – Head of Energy & Sustainability – Prefect Controls

SUPPORTING NET-ZERO AMBITIONS

Using Department for Energy Security and Net Zero (DESNZ) carbon factors for 2025, the reduction in energy consumption equates to 7,985 tonnes of CO_2e emissions avoided.

Prefect believes the latest figures demonstrate that intelligent occupancy-based control can provide one of the most effective routes to improving building performance while maintaining comfort and student satisfaction.

As energy costs remain volatile and net-zero commitments become increasingly demanding, preventing unnecessary energy consumption, not restricting heating, may prove to be one of the most important principles in the future of controlling student accommodation energy consumption. www.prefectcontrols.com

BEYOND THE ENERGY DASHBOARD: TEST CHANGE BEFORE YOU INVEST

Satish Swaroop,
President & CEO, CEBS Worldwide

Energy managers are not short of data. Half-hourly meter readings, BMS data, tariffs, weather data and equipment schedules can all contribute to a better understanding of how a building is performing. The challenge is what happens next.

A dashboard can tell us that demand reached a particular level at 7:00 pm, that consumption increased compared with the previous month, or that a building has a relatively poor load factor. All of this is useful. But none of it, by itself, answers the question an energy manager ultimately has to deal with: *what should we change?*

That distinction between monitoring and decision-making is becoming increasingly important.

Consider a building with a pronounced evening peak. The first response should not necessarily be to invest in new equipment. We need to understand what is contributing to the peak, whether it is persistent and whether there are operational changes that could address it.

Could plant schedules be adjusted? Is heating or cooling starting too early? Are different systems operating simultaneously when they do not need to? Would on-site generation help? Could battery storage reduce peak grid demand?

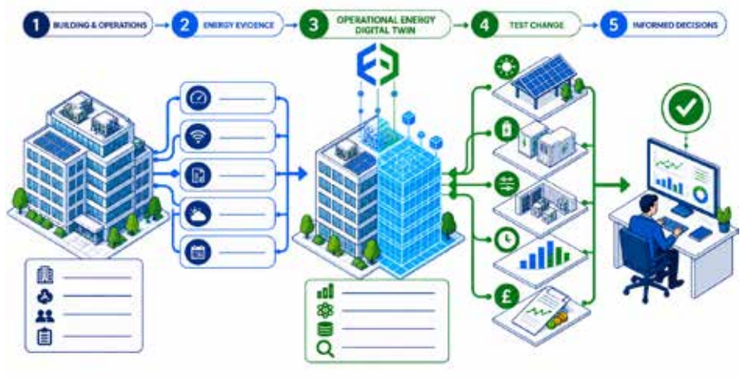
These are quite different questions from simply asking how much energy the building consumed.

FROM OBSERVATION TO INVESTIGATION

This is where an Operational Energy Digital Twin can be useful. The purpose of a Digital Twin should not be to create a more elaborate dashboard or an impressive three-dimensional representation of a building. The value comes from connecting available energy evidence with property and operational context and then providing a controlled environment in which potential changes can be investigated.

Take rooftop solar as an example. Identifying suitable roof area and estimating annual generation is useful, but it is only the beginning. The more interesting question is how that generation aligns with the building's demand profile.

Battery storage introduces another set of considerations. When would the battery charge? When should it discharge? Is the objective to reduce peak demand, increase the use of on-site solar, respond to tariffs, or achieve a combination of these?



A Digital Twin allows these alternatives to be considered against a common baseline before investment is committed.

The same principle applies to less capital-intensive measures. Changing an operating schedule may cost very little compared with installing new technology, yet its effect can still be tested alongside solar, storage or other interventions.

TEST THE DECISION, NOT JUST THE TECHNOLOGY

This changes the role of the energy model. Instead of producing a single forecast or savings figure, it becomes a way of asking structured "what if?" questions.

What happens if operating hours change? What happens during winter rather than summer? What if solar capacity is increased? What if storage is added? What if two measures are implemented together?

The objective is not to predict the future with absolute certainty. It is to compare reasonable alternatives using a consistent set of assumptions and evidence.

A Digital Twin does not compensate for poor data. Where evidence is incomplete, that limitation should be visible rather than hidden behind an apparently precise model.

There is an important discipline required here. Measured, derived and modelled information are not the same thing.

If an electricity value comes directly from a meter, it should be identified as measured. If a demand profile has been calculated from available evidence, that should be clear. If solar generation or battery behaviour is simulated, the resulting values are modelled outcomes, not measured savings.

This may sound like a small distinction, but it matters when the results begin to influence investment decisions.

A polished visualisation should never create more confidence than the underlying evidence justifies.

MOVING TOWARDS DECISION SUPPORT

We have applied these principles in developing ENERGE TWIN, an Operational Energy Digital Twin developed by CEBS Worldwide. One lesson from that work is that the most useful question is rarely: "How much energy did we use?"

The more valuable questions are usually: Where should we look? What could we change? What might happen if we changed it? And how strong is the evidence supporting that conclusion?

Energy dashboards will continue to have an important role. But as buildings become more connected and energy decisions become more complex, there is an opportunity to move beyond monitoring towards structured decision support.

Before making the change - particularly an expensive one - it makes sense to test the decision first. **www.cebsworldwide.com**

THE UK'S NEW ENERGY REALITY REQUIRES A PROCUREMENT RETHINK

Miles Thomas, Chief Commercial Officer, AMPYR Distributed Energy

The traditional procurement strategy whereby contracts were negotiated yearly to secure the cheapest energy rates worked well when markets were stable and prices low. There were inevitably some disruptions, but these were only temporary before the waters calmed again.

The energy landscape today, however, is fundamentally different. We are in the midst of a transition towards renewable sources whilst the impacts of geopolitical tensions are being keenly felt, with energy prices spiking as supplies of vital fuels are constrained.

Faced with that sort of uncertainty, a short-term approach to energy procurement isn't just a problem for balancing the books at the end of the year, it is a potentially existential risk. Indeed, businesses – particularly those in more energy intensive sectors – that are continuing to rely solely on electricity bought from the grid and therefore with fluctuating prices have already found that their energy bills are biting deeply into revenues.

However, there is an alternative. One that can help businesses move beyond a short-term strategy to one that secures long-term stability whilst also helping them operate more sustainably. That solution is onsite generation.

A NECESSARY EXERCISE

Businesses that continue to rely exclusively on imported energy are competing against those that are reducing their exposure to risk through investing in their own energy generation. Onsite generation gives businesses control over their energy costs and removes the impact of external pressures and market fluctuations.

A total reliance on the grid risks leaving businesses structurally disadvantaged compared to competitors pursuing alternative options. Onsite generation, on the other hand, gives businesses a structural advantage by reducing grid dependency and instilling agency.

Instead of being a defensive exercise in energy procurement, onsite generation embeds a structural resilience which allows businesses to take control of their procurement.

TAKING CONTROL THROUGH ONSITE GENERATION

One of the most effective ways for businesses to improve energy resilience is by generating more of their own electricity, for example in the form of large rooftop solar installations or ground-mount solar with a private wire connection, which can be deployed across a range of commercial and industrial assets. These can also be installed without upfront capital expenditure through the use of onsite Power Purchase Agreements (PPAs).

The benefits of onsite generation extend beyond lower energy bills to long-term price certainty and a reduced dependence on volatile wholesale markets. This gives businesses a competitive advantage over their counterparts continually exposed to fluctuating prices and heavily reliant on government support. Taking control of their electricity generation gives businesses the confidence of a long-term and reliable energy procurement strategy.

A FAR-SIGHTED STRATEGY?

This is not to say that businesses are currently without support. In particular, the British Industrial Competitiveness Scheme (BICS) and the Energy Intensive Industries (EII) Scheme, which are intended to shield businesses from the impact of rising energy costs and reducing energy bills through financial support and levy exemptions, has been a welcome Government response to ongoing instability in the Gulf.

These schemes are unquestionably well-intentioned, but they also do little to actually address the problems that are facing UK businesses because they do not address the underlying cause. As it stands, the UK itself remains reliant on international wholesale energy markets, which we can exert only a very limited influence on. As a result, whilst the Government can use taxpayer funds to help businesses pay their bills, unless businesses find alternative energy sources, the actual cost of energy bills won't come down in the long term,

The end result is likely to be that businesses become dependent on taxpayer-support to meet their energy bills, which is simply not sustainable in the long-term at a time when there are so many other demands on the Exchequer.

REPLACING DEPENDENCE WITH ASSURANCE

It is right that the Government helps businesses during times of exceptional disruption. However, businesses should also be encouraged to help themselves become more resilient rather than simply offsetting their costs, particularly when the latter comes at a continuous cost to the taxpayer.

There is no reason why the adoption of onsite energy should not be made a pre-condition for businesses becoming eligible to receive government support, this is a no-cost obligation for businesses, unlike the levies BICS and EII are set up to tackle, and no cost to the taxpayer which is ultimately the result of the schemes, delivering far greater savings By providing an incentive for businesses to help themselves, the promotion of onsite generation strengthens industry competitiveness and removes the reliance on taxpayer-funded subsidies. These two things in combination would have a transformative impact on industrial energy costs. Crucially, this allows government funding to be directed towards developing technologies that have long-term potential but are not yet commercially viable without support.

In addition to benefiting the taxpayer, businesses that adopt onsite energy replace their dependence on government support with the assurance of a sustained supply of reliable, affordable power over the coming decades. Alongside offering them a competitive advantage against those who continue to rely on the grid, businesses that invest in greater control over their own energy supply through onsite generation will also be better placed to withstand future volatility. With the UK's energy challenge no longer simply about securing the cheapest energy contract year on year, it is time for businesses to rethink procurement and look to onsite generation for a successful long-term energy strategy. **www.ampyrde.com**

HYBRID PPAS: WHAT EUROPE'S BIGGEST BAKER CAN TEACH ENERGY MANAGERS ABOUT HEDGING VOLATILITY

Annie Scanlan, Managing Director of the RE-Source Platform, looks at what a major renewables deal says about where energy procurement trends are heading.

Amid increasingly unpredictable times for European electricity markets, the business case for long-term energy agreements has rarely been stronger. Corporate power purchase agreements (cPPAs) give companies greater electricity price certainty, helping them manage price volatility while supporting their decarbonisation goals. And the PPA market is evolving. As renewables play a larger role in the energy mix, buyers and sellers are looking at how different assets such as wind and solar can be combined to add flexibility and value. Repsol, an energy supplier based in Madrid, this summer announced nine 12-year virtual power purchase agreements (VPPA) with Bimbo Group, the world's largest baking company, covering around 150 GWh a year. A VPPA is a financial agreement where renewable electricity is sold into the market at an agreed price. The deal is equivalent to 100% of Bimbo's electricity consumption across 18 production sites in Spain, Portugal, France and Italy.

WHAT'S NEW IN THIS PPA

What makes this deal interesting is how the nine VPPAs are combining wind and solar capacity in Spain. By pairing both assets, generation is spread across more hours than with either technology alone. It's a good indication of the market moving towards a portfolio approach which better matches the profile of variable renewable power.

WHY HYBRIDISATION IS GETTING ATTENTION

So what is a hybrid PPA? Hybrid procurement structures combine different assets and technologies: wind, solar, and storage. Weather variability, limited grid capacity or other conditions impacting generation create risks like price cannibalisation and negative pricing. This price volatility impacts the value of the energy generated. Hybridisation gives buyers and sellers more options to manage this. Adding long-duration battery storage adds flexibility, allowing power to be captured for use or dispatch in the evening, when customers are most exposed and price and demand is higher.

A GROWING MARKET

Spain and the UK are the strongest markets for hybrid structures, but we have also seen momentum in Poland, Romania and Norway. And from a variety of sectors: from energy intensives like steel and aluminium to banking, rail and retail. Carrefour Polska, for example, signed a wind and solar PPA in Poland for around 70 GWh a year. Insulation manufacturer Rockwool and Eurowind Energy signed a 10-year hybrid corporate PPA in February for around 70 GWh a year, sourcing from a Polish wind farm and solar farm. The market is still maturing, but there is growing momentum and significant potential.

And that is exactly why RE-Source exists. Each November we bring together 1,400 decision makers in Amsterdam from across Europe's renewable energy value chain, to help make more deals like these happen, and support faster decarbonisation. By coming to Amsterdam, you can meet the people who can move your renewables procurement and electrification strategy forward.

TEN YEARS OF RE-SOURCE

This year we celebrate RE-Source's 10-year anniversary, from 3 to 5 November at the Beurs van Berlage in Amsterdam. With this milestone edition we are celebrating a decade of advancing corporate sourcing by connecting corporate energy buyers with energy suppliers and providing tools and knowledge to navigate their renewable journey.

THREE SESSIONS AT RE-SOURCE FOR YOUR DIARY

Aside from the latest on hybrid deals – what else can you expect at RE-Source 2026?

Energy Buyers Day on 3 November is geared towards one thing: sending you home with tips that you can apply to your own decarbonisation strategy. By meeting peers and attending practical and interactive sessions, we will arm you with the tools to confidently meet potential suppliers over the following two days. Topics covered this year include: renewable procurement basics, AI and energy, long-duration energy storage, scope 3 emissions, and biogas.

Wednesday 4 November kicks off with the matched B2B meetings – think speed dating where you can discuss your site's energy needs. The conference starts with a session on where the renewables market is heading: "Europe's PPA market: data and trends" (15:10).

If the Bimbo hybrid deal caught your eye, the next session is for you: "Optimal hedging? The case for hybrid renewables and storage PPAs" (16:30). We'll unpack how these structures work, why the evening peak is where the hedging value sits, and how energy buyers can implement hybrid deals.

Straight after, don't miss "System transformation: power grids and demand-side flexibility" (17:30), which turns to grid connections and how industrial energy buyers can make flexibility part of their business case for electrification. Check out the programme for much more!

Registrations are open now, and it is free for energy buyers - as always.

I hope to see you in Amsterdam.

https://resource-platform.eu/re-source/

‘BUSINESS AS USUAL’ ENERGY BUYING IS NO LONGER FIT FOR PURPOSE

Chris Bowden, founder and CEO of SQE (formerly Squeaky Energy)

Almost all energy procurement strategies across industrial and commercial (I&C) businesses are rooted in a world that no longer exists.

There was a time when the playbook was simple: stay compliant, drive incremental efficiency gains, and secure the “best price” through periodic tenders. It was a model built for stability, where wholesale markets moved within predictable bounds and risk could largely be managed through timing.

That world has gone.

From the COVID-19 pandemic to the war in Ukraine and now escalating instability in the Middle East, energy markets have been repeatedly disrupted. These are not isolated events, they are signals of a structurally more volatile era, and the idea that prices will “settle down” into a stable equilibrium is increasingly difficult to justify.

In August 2022, UK power prices reached a monthly average of £370/MWh, peaking at £571/MWh in a single day, before hitting record highs in September. At the time, this was seen as extraordinary.

Date	Spain (OMIE)	Italy (PUN)	UK (EPEX)
01/03/2026	€22.49	€136.09	€106.31
02/03/2026	€19.01	€136.58	€103.20
03/03/2026	€19.64	€125.45	€105.87
04/03/2026	€16.97	€133.62	€98.57
05/03/2026	€23.12	€123.34	€105.50
06/03/2026	€8.16	€129.28	€98.24
07/03/2026	€21.28	€119.22	€100.86
08/03/2026	€22.25	€131.73	€91.43
09/03/2026	€17.14	€130.63	€117.58
10/03/2026	€19.25	€122.95	€96.16
11/03/2026	€5.51	€143.19	€94.75
12/03/2026	€19.56	€137.36	€117.89
13/03/2026	€21.84	€128.09	€90.41
14/03/2026	€24.28	€143.43	€89.84
15/03/2026	€0.00	€112.55	€93.28
16/03/2026	€23.82	€147.28	€92.65
17/03/2026	€26.06	€125.43	€96.44
18/03/2026	€10.51	€147.67	€96.93
19/03/2026	€23.77	€144.18	€91.75
20/03/2026	€10.87	€119.78	€107.82
21/03/2026	€32.41	€124.32	€89.82
22/03/2026	€7.74	€148.56	€121.66
23/03/2026	€25.06	€152.19	€103.11
24/03/2026	€12.51	€142.84	€92.42
25/03/2026	€14.36	€142.79	€106.49
26/03/2026	€35.83	€127.38	€86.20
27/03/2026	€4.11	€142.36	€97.35
28/03/2026	€15.48	€133.32	€101.32
29/03/2026	€0.18	€117.52	€86.20
30/03/2026	€21.08	€151.60	€118.80

But similar dynamics have already re-emerged. When tensions in the Middle East intensified, oil prices surged past $114 per barrel for the first time since 2022, with knock-on effects across global gas and power markets.

Volatility is no longer the exception, it’s the baseline and living in hope that markets will return to how they once were is not a strategy any energy buyer can fall back on.

RENEWABLES ARE THE FOUNDATION OF STABILITY

These repeated shocks are exposing a deeper truth than many people are willing to admit: energy security and the energy transition are not competing priorities.

Fossil fuel-based systems are inherently vulnerable. They depend on continuous extraction, transportation, and global trade, often through narrow and politically sensitive routes. When disruption occurs, the impact is far reaching.

Renewables change that dynamic. Once built, their operating costs are predictable and largely insulated from commodity price shocks. In a volatile world, that stability has real economic value.

The contrast across Europe makes that clear.

While many countries experienced sharp electricity price increases following recent geopolitical tensions, Spain has remained comparatively resilient. Since 2019, it’s doubled its wind and solar capacity – adding 40GW – and significantly reduced its reliance on gas-fired generation.

In marginal pricing markets like the UK, where gas often sets the price of electricity, this matters because when gas prices spike, the effect flows directly through to power prices.

FROM HEDGING TO ACTIVE LOAD MANAGEMENT

What this means at a system level is clear. The question for businesses is – how can they respond within it?

Hedging remains essential. Fixing prices in the forward market provides budget certainty and protects against extreme swings – it’s the foundation of any sound energy strategy. But it shouldn’t be the ceiling.

Smart organisations are now building on this foundation, treating their hedged position as a baseline, and layering active decision-making on top.

If a business can anticipate when short-term prices will spike, and it has the ability to reduce or shift consumption during those periods, it can effectively “sell-back” energy it no longer needs – capturing the difference between your hedged price and the higher market price.

This is where mechanisms like the GB day-ahead market, operated through the N2EX auction, become strategically important. The day-ahead price reflects what electricity will cost tomorrow, not what you agreed months ago, and for businesses with flexible contracts and operations, it provides a real-time signal.

Crucially, these buyers do not wait for prices to be published. Instead they use forecasting tools to anticipate market movements – tracking variables such as renewable generation, demand forecasts, gas prices, and system margins – which allows them to plan ahead.

Because operational decisions often require time, it’s often too late for a business to act if it waits until prices are confirmed.

But when it has the ability to forecast, it can position itself to take advantage. And when spreads between forward and day-ahead prices widen - as they often do during periods of stress - the financial impact can be significant.

This is how energy shifts from being purely a cost centre to something that can actively generate value.

WHAT DOES IT TAKE TO ACT?

This approach is not universal, but it is increasingly accessible. To implement it effectively, energy buyers must have three elements in place.

First, flexible load. Businesses need operations that can be adjusted within a day, whether that’s manufacturing processes, refrigeration, or large-scale energy systems. Where flexibility is limited, technologies like battery storage can play a role.

Second, the right contract structure. This typically means a flexible supply agreement with half-hourly settlement and the ability to vary consumption positions. Without this, participation is restricted.

Third, market intelligence. Acting without a clear view of likely price movements is not strategy, it’s speculation. Forecasting capability is essential to move from reactive to proactive decision-making.

It’s also important to be clear about what this approach is, and what it is not. This is not about a business exposing its entire energy position to volatile spot markets. The core demand remains hedged, providing price certainty.

What a business is doing here is selectively using flexibility to respond to short-term signals. In other words, capturing incremental value without compromising stability.

That distinction matters, particularly for those at board level. This is not a matter of increasing risk, it’s about managing it more intelligently.

CONFIDENCE WITHOUT FULL CAPABILITY

For many businesses, this level of market participation is still out of reach.

Research by SQE shows that 80% of energy buyers believe their current electricity supply arrangement is no longer suited to today’s market, with nearly a third strongly agreeing.

This gap is important, because it highlights that energy buyers recognise the landscape has changed, but most are still operating in structures that limit their ability to respond, or capitalise.

Notably, only 28% describe themselves as ‘very confident’ in managing wholesale price volatility.

The fundamental question should no longer be: how do I avoid the market? Instead it should be: does my contract allow me to participate in it?

Because a supply contract is not just a billing mechanism, it’s the framework that either enables a progressive strategy or blocks it. Too many organisations remain passive, treating volatility as something to endure rather than act on.

It can be hard to accept that disruption as the new norm. But the organisations that do - and build the capability to engage with it - will be the ones that come out ahead. Because in this market, inaction is not stability, it’s mounting risk. **https://www.sqe.energy/**

THE FUTURE IS HYBRID: HOW RENEWABLE-PLUS-STORAGE PROJECTS ARE CHANGING EUROPE'S ENERGY LANDSCAPE

Teresa Casacchia, Head of Storage EMEA and APAC, BayWa r.e.

Hybrid renewable-plus-storage projects are becoming a key part of Europe's energy transition. By combining renewable generation with Battery Energy Storage Systems (BESS), these assets don't just generate green power, they also make it much more flexible, controllable and valuable.

Why does this matter? Because Europe's electricity system is shifting at a fundamental level. Last year, wind and solar accounted for 30% of EU electricity generation, overtaking fossil fuels for the first time. This milestone underlines how central variable renewables have become to the power mix.

Now, as their share grows, the system needs more flexible capacity that can manage fluctuating renewable output. Developers and investors also need ways to protect asset value against changing market signals, grid constraints and regulatory requirements.

Hybridisation is key for this. It is a strategic evolution of renewable assets, which is why we need to rethink how they are designed, operated and monetised so they can continue to drive forward the energy transition.

FLEXIBILITY, DISPATCHABILITY AND SYSTEM VALUE

The primary benefit of hybrid assets is to make power systems much more flexible. Solar and wind generation are variable by nature but pairing them with storage can create more controllable and dispatchable output. This helps reduce curtailment by capturing excess generation when output is high and releasing it when the system needs it.

Hybrid assets are being evaluated as flexible infrastructure serving multiple system and market needs. They are no longer judged solely on how much renewable energy they produce, but how effectively this energy can be integrated into the system.

GRID REQUIREMENTS ARE SHAPING DESIGN

As a result, grid conditions now play a greater role in how hybrid projects are developed and operated. Grid congestion costs in Europe reached €5.2bn in 2022 and could rise as high as €26bn by 2030. This has prompted developers to design projects around grid availability, export limitations and network requirements from the outset.

This is also changing how hybrid assets are configured. Flexible connection agreements, export limitations, grid-forming capabilities and evolving network codes now influence everything from battery size and duration to control systems, charging strategy and revenue modelling.

FROM TECHNICAL DESIGN TO COMMERCIAL OPTIMISATION

These system benefits are also changing how hybrid projects are planned. As storage becomes central to managing grid constraints, as well as curtailment risk and flexibility opportunities, decisions around BESS sizing and operation are becoming increasingly commercial.

This means analysing energy spreads, cycling strategies, ancillary services opportunities, degradation assumptions, offtake structures and site-specific grid constraints together. This is important because a larger battery is not automatically better. The right size and operating approach depend on the revenue model, risk appetite and long-term objectives of the asset owner.

A MARKET LEARNING CURVE

Hybridisation is advancing alongside a wider market learning curve. PV- or wind-plus-BESS solutions and emerging hybrid PPAs are gaining traction across Europe, but they remain innovative structures. Banks and investors are gaining confidence around revenue stability, risk allocation and long-term cashflow predictability.

That is not unusual for an emerging asset class. However, progress needs to be rapid, as Europe needs a more flexible electricity system, and renewable assets need to adapt to that reality. As more projects are developed, financed and operated successfully, confidence should continue to grow – which is why we need to ensure market frameworks mature quickly enough to support deployment at scale.

HYBRIDISATION AS A STRATEGIC EVOLUTION

One of the strongest arguments for hybrid renewable-plus-storage projects is their ability to future-proof renewable portfolios. Even where the business case is not yet fully established, integrating storage considerations early in project development preserves optionality and enables assets to adapt when the time comes.

For investors and asset owners, this can help protect long-term value. As power price volatility increases and curtailment risks grow in some markets, the ability to shift output, manage exposure and respond to system needs has become even more valuable.

Hybridisation is becoming a strategic evolution of renewable infrastructure, and one that will play an increasingly important role in shaping Europe's energy future – if we pave the way for it now. **www.baywa-re.co.uk**

WHEN THE BACKUP FAILS: THE REAL COST OF GETTING STANDBY POWER WRONG

Chris Connors, Project Sales Director, DTGen

The recent rail disruption across the north-west was a reminder of how much modern life depends on power systems that we never see. A short drop in the mains supply took out a Network Rail operations centre in Manchester. The resulting lag meant the knock-on effect cascaded across six train operators, displacing trains and crews and leaving commuters stranded well into the following day.

We don't know the specifics of that site. But it raises a question I spend a lot of my working life on: if the mains supply fails, does the backup actually do its job?

Most people assume that if there's a generator on site, they're covered. But reality is more complicated than that, and the gap between having a backup supply and it performing the moment it's needed is where organisations can get caught out.

MIND THE (START-UP) GAP

A standby generator can't predict when it will be called on and obviously isn't running continuously. If the mains fails, there is always a short break in supply while the set starts, comes up to speed and takes the load - within seconds, but not instantly.

For most sites, that momentary delay isn't an issue. But for some, it is. Where a load is genuinely critical and even a few seconds of interruption is unacceptable, an uninterruptible power supply (UPS) sits between the mains and the equipment. A UPS is essentially a very fast battery system that steps in the instant the mains drops, holding the critical load while the generator starts and takes over. It's why data centres invest heavily in UPS protection, because they simply can't afford to wait for the generators.

When a site with backup installed still loses power for a sustained period, it raises the question of whether the critical equipment was protected in that window at all, or whether the protection was there but didn't operate as intended.

AVAILABLE ISN'T THE SAME AS CONNECTED

There's a second failure point that is often ignored: the changeover switch, or automatic transfer switch.

In a typical standby setup, the generator has no direct link to the mains. The changeover switch is what monitors the incoming supply, and when it sees the mains fail, it signals the generator to start. Once the set is running at the right voltage and frequency, the switch breaks the connection to the failed mains and makes the connection to the generator.

The point here is that the generator can be running perfectly, up to speed and ready to take load, and the site can still go dark. If the changeover switch fails to break from the failed mains and connect the backup source, perhaps through a fault in its mechanism, or simply because it's never been properly tested, the transfer never happens. The generator is available but not connected. Externally it will look like the backup has failed, but the weak link was the switch, not the generator itself.

MAINTENANCE IS THE THING THAT GETS FORGOTTEN

In my experience, the most overlooked issue in backup power isn't specification. When a system is designed, the rating, the coverage and the transfer time usually get the right attention. Instead, the problem comes later. Once a generator is sited and commissioned, it's too easily forgotten, and the maintenance routine slips or is not delivered in a robust way.

This presents a false economy, because a generator is only ever going to be as good as the infrastructure around it - the cables, connections, fuel and fuel tanks - and only as reliable as its upkeep. If starter batteries aren't maintained, or fuel quality isn't monitored, or if any of several other elements aren't carefully reviewed, you can end up with a generator that fails to start.

Good testing means more than a weekly walk-round to check for leaks and obstructions, as valuable as that is. It means running the set on load, regularly, to prove it can deliver stable output under real conditions. Checking that the engine fires is simply not enough. And it means a longer full-load test once a year to confirm the set still meets its rating.

THE REAL COST IS THE RECOVERY

Sadly, the direct outage is rarely the main event. As the rail disruption showed, a very short interruption can displace complex, interdependent operations and trigger days of knock-on chaos, with the commercial, operational and reputational damage far outweighing the seconds of power lost, or the costs involved with maintaining plant adequately.

The crucial point here is that getting backup right isn't a box-tick exercise. It's a question of specification, maintenance and testing, sustained over the life of the asset. The value of standby power is measured in the interruption it avoids. **www.dtgen.co.uk**

CONTINUOUS FLOW HOT WATER HEATING – STILL PART OF THE FUTURE

Rinnai looks at the continuing role of natural gas and alternative gases in the current energy offering.

Geopolitical strife and military conflicts in the Ukraine and the Middle East theatre continue to impact global energy costs, so what alternative gaseous fuels can fill the void that fossil fuels previously inhabited? Furthermore, despite natural gas attracting and maintaining a reputation for being easily manipulated on the global market, traditional energy sources still hold many user benefits.

UK energy provision is operating under several mitigating circumstances: the first issue confronts uncertainty regarding viable and renowned alternative energies. Although wider electrification is being introduced, there are numerous challenges to adding towards grid capacity, such as – insufficient grid connection time scales for new projects and inadequate infrastructure that suffers from a lack of investment.

A further issue when thinking of UK energy provision, is the dominance of natural gas. Media outlets fail to mention the viability of an evolution in UK power dispersal that gaseous forms of power can introduce.

The acceptance and usage of gas-based energies like renewable methane, hydrogen, LPG, or BioLPG, as opposed to large-scale electrification is a conceivable option when you consider the scale of active gas infrastructure.

When the observer aggregates all information regarding current energy infrastructure and governmental direction that favours electrification, compatibility between the two weakens.

The UK is second behind Germany in natural gas consumption, in a European context, whilst also ranking second in gas generated electrical power in 2024, with 30.3% of final electricity being produced through natural gas. Market statistics published by trusted sources and media show that in 2024 there were 1.5 million gas boilers installed across all sectors in the UK, most of which were replacements.

Natural Gas is integral to grid flexibility by fulfilling the role of a reliable baseload energy source. When alternative renewable energies such as solar or wind are low on production levels, Natural Gas can be easily accessed to provide adequate power to UK customers.

As natural gas is still highly relevant to the UK customer, continuous flow technology is the practical, economic and technical solution for hot water provision to any and every site throughout the UK. Natural gas appliances such as continuous flow water heaters are an innovation that instantly provides hot water upon command and demand.

Gas is only combusted when required which means that the customer only pays when hot water is being used, unlike a storage tanker system that must retain water temperature through constant heating therefore creating higher costs.

As a continuous flow water heater only operates when required system efficiency becomes optimised whilst costs and emissions are reduced. The size dimensions of an instantaneous water heater mean that a wall mounted installation is quicker and leaves less material waste whilst installation space is also reduced.

Natural Gas also offers a pathway towards alternative technologies such as renewable gas blends such as hydrogen-blends ready hot water heaters, gas boilers, and hybrid systems. Hydrogen-blends ready equipment and hydrogen gas mixes could play a role in future UK gas usage and assist in reducing emissions. Along with other renewable gases such as Biomethane and BioLPG.

Rinnai

Just last year Centrica and National Gas completed a 2% hydrogen gas blends trial at Brigg Power station in Lincolnshire, demonstrating technical and end-user feasibility. The hydrogen gas blends were used to generate electricity that provided power to local businesses and domiciles, with no reported issues.

The UK is considering plans to introduce a 2% - 5% hydrogen gas blends with further plans to extend the gas mix ratio to 20% sometime in the future. There are also interesting developments with Biomethane as another viable alternative.

Although work is underway in transitioning towards cleaner energies Natural gas still provides 85% of UK properties with essential warmth and water heating capabilities. According to figures released by the International Energy Agency (IEA) Natural gas still contributes 36.8% of final UK energy provision in 2024.

Off grid customers of fuels have a range of energies to select from, namely LPG and Bio-LPG. LPG was the lowest carbon emitting source of fuel for the 15% of UK businesses and domiciles that function off grid. Emissions from LPG are 33% less than coal and 15% lesser than oil. From 2023 and 2033 the UK LPG market is expected to grow by 12.82% and has attracted £600 million of investments between 2022 and 2025.

BioLPG can significantly reduce emissions when compared to oil and LPG. Liquid Gas UK – the trade association for the LPG and biopropane industry – has published an industry census revealing over £100 million is currently being invested in BioLPG, whilst the European market for LPG is expected to expand by 19.80% during 2026 and 2035.

Together, both BioLPG and LPG can reach and decarbonise off grid properties that other fuels and technologies find difficult to locate and effect.

Other notable synthetic gasses that are worth exploring are e-methane and biomethane. E-methane is the abbreviated name given to electro-methane, a gas which is created by extracting captured carbon dioxide and then blended with green hydrogen, itself produced via renewable energy. Green hydrogen electricity is converted into a storable low carbon gas – e-methane.

Biomethane is produced in a separate process – methane is captured from natural biological waste and forms during a natural process called “anaerobic digestion.” In the absence of oxygen microorganisms will begin to break down matter yielding a gas - methane. Once impurities are removed the methane gas becomes upgraded and biomethane is created.

Both biomethane and e-methane are capable of identical operating behaviour when compared to fossil fuels and can therefore be placed into existing infrastructure. Biomethane and e-methane can immediately fulfil the role of fossil fuels without any fracture towards appliance operating efficiency, commercial activity, or societal cohesion.

Gas fired appliances and natural gas infrastructure all still offer UK customers a solid role in the present, near and future. Innovations such as the continuous flow water heater have reduced energy costs whilst providing savings on fuel consumption and carbon output. Although unfashionable, natural gas and related technologies will continue to provide domestic and commercial applications with a cost effective and limitless supply of clean hot water.

If energy supplies become restricted there are numerous alternative gaseous energies capable of fulfilling the role of natural gas. LPG, BioLPG, e-methane and hydrogen all possess the potential of maintaining the role the natural gas occupies.

Visit **www.rinnai-uk.co.uk**

THE CHP TRANSITION: WHY ACTING NOW MATTERS

Matt Caville, Senior Advisor for Decarbonisation of Complex Sites at Energy Systems Catapult, on the replacement decision facing hundreds of public sector sites.

Gas-fired combined heat and power (CHP) is a mainstay of large public sector sites but the window on replacing it is closing. CHP reliably generates electricity more cheaply than the grid supplies it, delivering heat as a crucial by-product and providing a degree of resilience at sites that cannot afford to lose power. For a long time, it also reduced emissions, but the carbon case has fallen away.

Grid electricity has decarbonised faster than many expected and running a gas engine is now typically the more emissions-intensive way to meet a site's demand. Because so much of this capacity was installed during public sector CHP investment in the 2010s, many energy managers are approaching a replacement decision at broadly the same time.

THE SCALE OF THE PROBLEM

Our analysis of the Combined Heat and Power Quality Assurance (CHPQA) scheme dataset found 309 CHP installations across the public sector estate, representing around 414 MW of behind-the-meter generation. Roughly 70% sit in the health sector, with universities and further education accounting for much of the rest. These are not marginal or supplementary plant. They're the primary source of heat and power for some of our most operationally critical buildings.

Three quarters of that fleet is approaching a replacement decision within the next decade. That's more than 280 sites which need to decide, at some point before 2035, whether to replace like for like, refurbish, or switch.

A CHP unit typically runs for 15 to 20 years, so a decision taken in 2028 sets a site's emissions profile well into the 2040s, beyond the public sector's emission reduction targets of 50% by 2032 and 75% by 2037. These decisions are often handled as plant renewals within a maintenance budget, when in practice they determine whether a site can decarbonise at all.

THE COST-CARBON TENSION

For most energy managers, the barrier to acting is cost.

Non-domestic electricity currently costs around 25p/kWh against gas at roughly 5p/kWh. That price ratio makes on-site gas generation economic. It's also why every low-carbon alternative we've modelled costs approximately two and a half times more to operate than the CHP it would replace. That tension sits at the centre of most replacement decisions.

Replacing on-site generation with electrified heat typically means importing significantly more power. Yet around 27% of CHP capacity sits in areas facing grid congestion.

With the Public Sector Decarbonisation Scheme now closed to new applications, the capital route that underwrote much of the last five years of progress has narrowed considerably.

These pressures make like-for-like replacement the path of least resistance. Repeated across 280 sites, that choice would extend fossil fuel dependency at some of the country's most critical estates by 15 to 20 years, and risks adding stranded assets to public balance sheets.

THE CASE FOR ACTING NOW

If a project takes three to five years to plan, and the grid connection takes longer still, sites with CHP reaching end of life in the early 2030s need to be in feasibility work now.

That doesn't mean switching to a single low-carbon technology everywhere. For many sites, the practical route is phased: a primary low-carbon heat source with a smaller retained CHP in a transitional or resilience role. With a clear and funded exit plan, this approach delivers near-term carbon savings. From the conversations we've been having with NHS Trusts and energy managers across the public sector estate, the organisations making the most progress are those treating replacement as part of a site energy masterplan rather than as a line in the maintenance budget.

WHERE TO START

If you have CHP on your site, three steps are worth taking this year: establish the age and remaining life of your units; check whether your site sits in a grid constrained area or a designated heat network zone; and get the replacement decision onto your capital planning agenda while it's still a planned investment rather than an unplanned one.

Our full report sets out the analysis behind these figures, the technology options and potential for innovation to support the transition, and case studies from the University of Warwick and Kingston Hospital NHS Foundation Trust.

We're also developing the model behind this analysis into a self-help tool for individual sites to test replacement options against their own data. More on this to follow in the coming months.

To read the full report and access our free Public Sector Decarbonisation Guidance, visit: **https://trimrly.com/psdg**

CLOSING THE GAP BETWEEN NET ZERO AMBITION AND DELIVERY

Nazia Afreen, Sustainability, ESG & Net Zero Consultant, **www.eic.co.uk**

Many organisations have completed much of the initial work supporting their Net Zero ambitions. Carbon footprints have been calculated, targets established and energy audits undertaken, providing a clearer understanding of the measures available to reduce emissions.

These commonly include LED lighting, solar PV, heat pumps, building management system improvements, fleet electrification and supplier engagement. Individual recommendations may be technically credible, yet remain disconnected from available capital, asset replacement cycles, operational requirements, grid capacity and wider organisational priorities.

A comprehensive roadmap should establish priorities, identify dependencies and set out a practical sequence for investment. It should assign responsibility, define the route to approval and explain how performance will be measured. Without this structure, organisations can be left with an extensive list of opportunities and no clear process for turning them into decisions.

ESTABLISHING THE RIGHT INVESTMENT PRIORITIES

Simple payback remains widely used when assessing energy and carbon reduction projects. It provides a straightforward indication of how quickly expenditure may be recovered, but can favour smaller measures offering an immediate return over projects capable of delivering greater long-term value.

A three-year LED lighting project may appear more attractive than a heating or electrical infrastructure project with a seven or ten-year payback. The latter may address an ageing asset, reduce maintenance expenditure, improve operational resilience, enable future electrification and deliver a considerably larger carbon reduction over its working life.

Where an asset is approaching the end of its useful life, the investment case should reflect the expenditure that would have been incurred through its eventual replacement. Retaining it also carries costs associated with maintenance, energy consumption, reliability and operational risk. Assessing the full lifecycle brings decarbonisation into established capital and asset-management processes, rather than treating each project as a standalone sustainability initiative.

UNDERSTANDING SEQUENCE AND DEPENDENCIES

The order in which projects are delivered can materially affect their cost, scale and performance.

Heat electrification provides a useful example. Replacing gas-fired heating with heat pumps may support a substantial reduction in Scope 1 emissions, although moving directly to equipment selection can result in an oversized, expensive or operationally unsuitable solution.

An effective feasibility assessment should consider heat demand, operating hours, controls, fabric performance, plant condition, flow temperatures and electrical capacity. Improvements to controls or building fabric may reduce demand sufficiently to change the capacity of the proposed heat pump, together with its capital cost and infrastructure requirements.

Wider plans for the site must also be considered. EV charging, battery storage, electric process equipment and future production growth may all place additional demands upon the same electrical infrastructure. Examining these projects separately can lead to duplicated work, avoidable expenditure or capacity being allocated without sufficient regard for future requirements.

A credible roadmap should provide a coordinated view of the estate and its likely development over the next five, ten or fifteen years. Establishing dependencies at the outset allows investment to be planned in the correct sequence and prevents current decisions from restricting future options.

CREATING A RELIABLE BASELINE

Organisations may have access to half-hourly consumption data, utility invoices, building management systems, sub-metering and carbon reporting platforms. Its value depends upon whether it provides a reliable account of current performance and the factors influencing consumption.

A reported reduction in energy use does not necessarily demonstrate that an intervention has delivered the expected result. Production may have fallen, occupancy may have changed or the building may be operating for fewer hours. Consumption may also increase following an efficiency project because operating hours or output have grown.

A robust baseline should account for variables that materially affect performance, including weather, occupancy, production levels and operating hours. Establishing this position before investment allows expected savings to be modelled consistently and provides an agreed method for measuring performance following completion. Where the baseline is poorly defined, comparisons become less reliable, forecast savings are harder to substantiate and the organisation may struggle to demonstrate the anticipated outcomes.

CONNECTING SUSTAINABILITY WITH ORGANISATIONAL DECISION-MAKING

Responsibility for Net Zero targets often sits with sustainability teams, whilst many decisions required to achieve them are taken elsewhere. Procurement influences supplier selection and Scope 3 emissions. Estates and engineering teams manage assets. Finance controls capital allocation. Operations determines how buildings and processes are used, while senior leadership establishes investment priorities.

A deliverable roadmap should reflect this distribution of responsibility. Each project requires a named owner, an agreed route through technical and financial approval, clarity over the source of capital and appropriate measures for monitoring performance.

Closing the gap between ambition and action requires a structured investment programme based upon whole-life value, reliable baseline data, clear dependencies and shared accountability. Developed on this basis, the roadmap provides a practical route from technical opportunity to funded delivery, supported by defined responsibilities and measurable financial, operational and carbon outcomes.

BEYOND THE WHOLE BUILDING APPROACH

Davide Natuzzi, assistant director, energy, carbon & technical, Salix

For many energy professionals, the whole building approach has become a valuable way of thinking about decarbonisation. It has helped move the sector away from isolated interventions and towards a more integrated understanding of building performance, recognising that fabric, heating, ventilation, controls and operation all influence long-term outcomes. This thinking has been embedded across many public sector decarbonisation programmes, where success increasingly depends on how measures work together rather than on the performance of any single technology.

It's a term we at Salix have used very often over the years as we have delivered funding schemes on behalf of government, whether it is across the public sector or our housing programmes.

However, the conversation now needs to go further.

While carbon reduction remains essential, estates today face a broader set of challenges, including energy price volatility, security of supply, electricity network constraints and the growing impact of climate change. Digital technologies and artificial intelligence are also transforming how buildings are monitored, managed and optimised.

The next evolution is a whole asset resilience approach, bringing together energy efficiency, decarbonisation, energy security, climate adaptation and digital innovation into a single decision-making framework.

In summary, this means moving beyond individual risks or interventions to consider how assets perform under complex and linked stresses. This may include extreme heat and water scarcity to flooding, energy disruption and digital failure. It's imperative to maintain essential services, protect people and support long-term economic resilience.

This will be a key focus for government, and all of us moving ahead.

LOOKING BEYOND CARBON

Historically, energy projects have been judged largely on two outcomes: reduced energy consumption and lower carbon emissions. Today, organisations are increasingly asking wider questions:

- How secure is our energy supply?
- How vulnerable are our buildings to extreme weather?
- Can critical services continue during disruption?
- How can data and AI support smarter decisions?

A low carbon building is not automatically a resilient building. Many projects deliver significant energy savings but remain vulnerable to overheating, flooding or operational disruption. Buildings designed around today's conditions may struggle to perform effectively over the next 20 or 30 years as climate risks increase.

This is where energy professionals can add real strategic value by connecting decarbonisation with resilience and long-term asset planning.

Consider a leisure centre replacing gas boilers with heat pumps. If the project also improves fabric performance, upgrades controls, installs solar PV and battery storage, and addresses overheating risks through shading and ventilation improvements, the outcome becomes far more than a decarbonisation project. It becomes an asset that is cheaper to operate, more comfortable for users and less exposed to future risks.

Geothermal energy exemplifies a whole-asset approach to decarbonisation, providing long-term low-carbon heat, protection from energy price volatility, and infrastructure resilient to climate-related disruptions. The University of York's geothermal, supported through the Public Sector Decarbonisation Scheme, demonstrates how public-sector investment can simultaneously deliver carbon reduction, energy security, and operational resilience.

FOUR PILLARS OF A FUTURE-READY ESTATE

A whole asset resilience approach can be built around four interconnected pillars.

1. **Energy efficiency and carbon reduction.** Improving building fabric, optimising HVAC systems, deploying low-carbon heating and investing in renewable energy continue to provide some of the greatest opportunities for reducing emissions and operating costs. Buildings with lower energy demand are easier to operate during supply constraints, network pressures or periods of disruption. Simply put, reducing demand makes everything else easier.
2. **Energy security and resilience.** Recent years have highlighted the importance of energy security. Technologies such as solar PV, battery storage and demand flexibility are often justified through carbon savings or reduced costs, but they also deliver resilience benefits.
3. **Climate adaptation.** There's clearly a growing need to focus on climate adaptation. Many buildings were designed for weather patterns that no longer exist. More frequent heatwaves, intense rainfall and flooding are creating challenges that estates were never designed to withstand.
4. **Funding and investment strategy.** Delivering whole asset resilience requires a strategic approach to investment rather than funding projects in isolation.

A solid business cases should consider whole-life value, bringing together carbon reduction, energy security, climate adaptation and operational resilience benefits.

THE ROLE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence is beginning to transform estate management. We see this in our daily work at Salix. For example, we see it in our work on carbon reporting where measurement and verification are so important.

AI-driven platforms can analyse large volumes of data. They allow organisations to move from reacting to problems to anticipating them.

STANDARDS SUPPORTING A WHOLE ASSET RESILIENCE APPROACH

Several established standards already support this broader way of thinking.

The latest version of PAS 2080 promotes systems thinking, collaboration and whole-life decision-making while recognising wider environmental and resilience outcomes alongside carbon reduction. ISO 50001 supports energy management, ISO 55001 provides a framework for asset management, while ISO 22301 and BS 65000 offer guidance on organisational resilience and business continuity. For climate adaptation, ISO 14090 and ISO 14091 provide practical approaches for assessing climate risks and planning long-term responses.

Together, these frameworks reinforce a common principle: assets should be managed not only to reduce carbon, but also to remain resilient, adaptable and valuable throughout their operational life.

LOOKING AHEAD

It seems that the role of the energy professional is changing. We are no longer simply managing utilities or delivering carbon reduction projects. Increasingly, we are helping organisations make strategic decisions about energy security, climate adaptation, operational continuity and long-term asset performance.

The whole building approach has provided a strong foundation. The next step is to widen the lens from individual buildings and carbon savings to the resilience of entire estates.

We need to think carefully about whole asset resilience: creating buildings, homes and estates that are low carbon, secure, adaptable and intelligent enough to thrive in a changing environment.

At Salix, we're looking forward to being part of this next phase, future-proofing our homes and buildings and helping create places that are ready to thrive for years to come.

For more information about Salix, visit our website.

HYBRID HEATING SYSTEM CONTROLS: A TECHNICAL FRAMEWORK FOR COST-OPTIMISED DECARBONISATION

Pete Seddon Head of Technical at Rinnai looks in detail at getting the max performance in terms of performance and economy of a Hybrid Heating Hot Water System.

The transition toward Net Zero is reshaping energy infrastructure across the UK and globally. As national policy accelerates decarbonisation, consumers and building operators & owners face increasing pressure from rising fuel prices, volatile energy markets, and the growing cost of goods and services. One of the most challenging sectors to decarbonise is the heating and hot water (H&HW) sector, which represents a significant proportion of national emissions.

Heating and hot water in buildings account for 37–38% of total UK carbon emissions, equivalent to roughly 32% of all greenhouse gas output. Direct emissions from residential and commercial heating alone contribute 17–23% of the national total. While legislation increasingly favours full electrification in newbuild properties, these developments represent only a small fraction of the UK's building stock. The overwhelming majority consists of existing buildings, many of which are thermally inefficient, spaceconstrained, or limited by electrical capacity.

Because of these constraints, a hybridised approach – integrating heat pumps with existing boiler systems - offers a technically robust and economically viable pathway for reducing emissions without imposing prohibitive operational costs.

HEAT PUMPS AS A DECARBONISATION TECHNOLOGY

Heat pumps (airsource, watersource, and groundsource) are widely promoted due to their ability to deliver more thermal energy than the electrical energy they consume. This performance advantage is quantified using the Coefficient of Performance (COP), defined as:

$$COP = \frac{Useful\ Heat\ Output}{Electrical\ Energy\ Input}$$

By contrast, boiler efficiency is expressed as a percentage:

$$\eta\ \text{boiler} = \frac{\text{Useful Heat Output}}{Fuel\ Energy\ Input}$$

Figure 1: Cost of energy per kWh of heat delivered.

Electricity Unit Price	£ 0.200	Cost to consumer	Gas Unit Price	£0.055	Cost to consumer
Heat Pump COP	2.5	£ 0.0800	Boiler Efficiency	75%	£0.0733
	2.6	£ 0.0769		77%	£0.0714
	2.7	£ 0.0741		79%	£0.0696
	2.8	£ 0.0714		81%	£0.0679
	2.9	£ 0.0690		83%	£0.0663
	3	£ 0.0667		85%	£0.0647
	3.1	£ 0.0645		87%	£0.0632
	3.2	£ 0.0625		89%	£0.0618
	3.3	£ 0.0606		91%	£0.0604
	3.4	£ 0.0588		93%	£0.0591
	3.5	£ 0.0571		95%	£0.0579

Modern condensing boilers typically achieve efficiencies in the 88–94% range, where under optimal conditions, a boiler only achieves its highest efficiency when it is in condensing mode.

COST EFFICIENCY MISCONCEPTIONS

A common misconception is that heat pumps are inherently more expensive to operate due to the higher unit cost of electricity relative to gas. However, when COP values exceed approximately 2.5. the price disparity between heat pumps and boilers is minimal, as seen by Figure 1.

TEMPERATURE SENSITIVITY AND SYSTEM EFFICIENCY

HEAT PUMP PERFORMANCE VARIABLES

Heat pump efficiency is highly sensitive to:

- Outdoor air temperature (for ASHPs)
- Required flow temperature to meet building heat demand

As outdoor air temperature decreases or the flow temperature increases, the compressor must work harder, in turn reducing the COP.

BOILER EFFICIENCY VARIABLES

Whilst the variables that affect the efficiency of boilers are:

1. Higher return temperatures (>55–60°C) prevent condensing operation
2. Lower system temperatures improve efficiency

In many existing buildings, legacy systems operate at 80°C flow / 60°C return, resulting in realworld boiler efficiencies as low as 70% for older units and mid80% for modern condensing boilers.

Lowering system temperatures benefit both technologies, but heat pumps gain disproportionately, often surpassing boiler costefficiency at moderate outdoor temperatures due to the big increase in COPs at lower temperatures for heat pumps.

THE CASE FOR HYBRID HEATING SYSTEMS

A hybrid system can integrate heat pumps and boilers under a unified control strategy. This configuration leverages the strengths of each technology while mitigating their weaknesses.

WHY HYBRIDISATION WORKS

Hybrid systems:

- Reduce reliance on highcarbon fuels without requiring full electrification
- Optimise operational cost by dynamically selecting the most efficient heat source
- Avoid expensive electrical upgrades
- Maintain resilience and redundancy
- Enable staged decarbonisation rather than disruptive system overhauls

This approach is particularly advantageous for buildings with:

- High peak heat loads
- Limited electrical capacity
- Poor insulation
- Space constraints
- Continuous heating requirements (e.g., care homes)

TECHNICAL CONTROL STRATEGY FOR HYBRID SYSTEMS

The core of a hybrid system is the control logic that determines when the heat pump, boiler, or both should operate. We can use predetermined outdoor air temperatures to bring on the boilers to work with the heat pumps or just the boilers by themselves.

A calculation can be carried out using the end user's unit rate to determine the economic balance point – determining the outdoor air temperature at which heat pump operation becomes more expensive per kWh of heat than boiler operation.

Above this temperature:

- Heat pump operates as primary heat source
- Boiler remains off or provides peakload support

Below this temperature:

- The Heat Pump and Boiler can operate together or
- Boiler takes over as primary heat source
- Heat pump may shut down or provide limited preheat
- This ensures the system always operates at minimum cost per delivered kWh.

EXAMPLE: 100 KW CARE HOME APPLICATION

A care home with a continuous heating requirement provides a representative case study.

OPERATIONAL CHARACTERISTICS

- High annual heat demand
- Long heating season
- Need for reliability and redundancy
- Often limited electrical capacity

HYBRID SYSTEM BENEFITS

- Heat pumps handle most of the heating during mild and moderate weather
- Boilers provide peakload support during cold spells
- System temperatures can be reduced to improve overall efficiency
- Operators gain predictable running costs and reduced carbon intensity

STRATEGIC ADVANTAGES OF HYBRID CONTROLS

- Dynamic control ensures the lowest cost heat source is always prioritised using predetermined set points.
- Heat pumps operate during periods of high COP and lower grid carbon intensity.
- Hybrid systems reduce peak electrical demand, supporting national decarbonisation goals.
- As insulation improves or tariffs shift, control parameters can be updated without replacing equipment.
- It can allow end users to gradually switch to a point of use carbon free system.

CONCLUSION

Hybrid heating systems provide a technically sophisticated, economically rational pathway for decarbonising the UK's existing building stock. By integrating heat pumps with boilers under intelligent control logic, operators can achieve:

- Lower operational costs
- Reduced carbon emissions
- Improved system resilience
- A scalable route toward full electrification

This approach acknowledges the practical constraints of existing buildings while enabling meaningful progress toward Net Zero. **www.rinnaiuk.com**

LOW CARBON HYBRID HEATING SYSTEM CONSIDERATIONS: CHOOSING THE RIGHT TECHNOLOGY AT THE RIGHT TIME

Chris Caton, Product Director – Commercial, Ideal Commercial Heating

In a perfect world, every commercial building could immediately transition to a low carbon electric heating solution. However, existing buildings present a set of challenges that means decarbonisation is a journey, not a single event. Hybrid systems provide an effective bridge on that journey, allowing energy managers to make meaningful carbon reductions while working within the practical limitations of their buildings.

WHAT IS A HYBRID HEATING SYSTEM?

Hybrid heating systems combine heat pumps as the lead source with a complementary heat source supporting peak demand or extreme operating conditions, most commonly high-efficiency gas boilers.

The two most common configurations for hybrid heating systems are bivalent and parallel.

In a bivalent arrangement, one heat source replaces another at a defined temperature or load threshold. This typically sees the heat pump covering the base load with boilers taking over during peak demand.

In a parallel configuration, the heat pump operates to deliver as much heat as possible within its optimal performance range. Boilers operate alongside the heat pump during peak demand periods or when higher temperatures are required.

CAN ALL COMMERCIAL BUILDINGS USE HEAT PUMPS?

There is understandable enthusiasm around heat pumps, and rightly so, yet not every building can be served by heat pumps alone.

Many commercial buildings were never designed for low temperature heating (heat pumps operate at a maximum flow temperature of 55°C, whereas commercial gas boilers typically operate at a flow temperature of 70°C to 80°C). Their existing radiators, fan coil units, air handling units, heat interface units, underfloor heating, pipework and controls often rely upon traditional higher operating temperatures that can be difficult and expensive to modify.

Electrical infrastructure presents another significant challenge. Many sites simply do not have sufficient incoming electrical capacity to support a full heat pump installation without substantial upgrades. These upgrades can introduce considerable cost, lengthy timescales and disruption to building occupants.

Then there's the space issue. Traditional plant rooms are internal, but heat pumps require external space, careful consideration of airflow and appropriate acoustic design. Not every site can accommodate these requirements easily.

In these situations, hybrid systems allow us to introduce heat pumps as part of the solution, whilst recognising on-the-ground constraints.

CAN DOMESTIC HOT WATER RUN OFF A LOW CARBON SYSTEM?

Domestic hot water is often one of the most challenging aspects of commercial heating decarbonisation.

Space heating and hot water have very different operating requirements. Heat pumps perform most efficiently when delivering relatively low flow temperatures. Domestic hot water, however, demands significantly higher storage and distribution temperatures to satisfy both user expectations and hygiene requirements. Attempting to satisfy both demands from a single heat source can lead to compromises in efficiency.

For this reason, we're increasingly seeing decoupled solutions become the preferred design strategy, with dedicated domestic hot water generation, whether through dedicated air source heat pumps, standalone cylinder systems or highly efficient gas-fired water heaters.

WHAT ARE THE FINANCIAL IMPLICATIONS OF DECARBONISATION?

Perhaps the greatest advantage of hybrid systems is that they allow decarbonisation to happen progressively.

Few organisations have unlimited capital budgets and replacing an entire heating system in one project is not always feasible. Hybrid systems allow organisations to install heat pumps alongside existing or replacement condensing boilers, reducing emissions immediately while spreading investment over several years. This phased approach also reduces operational risk.

As energy managers, you can evaluate actual heating demand, monitor system performance and develop future investment strategies based on real operational data rather than assumptions.

It also prevents unnecessary oversizing of heat pumps, helping to optimise both capital expenditure and long-term operating costs.

Most importantly, it enables meaningful progress today rather than delaying projects while waiting for ideal conditions that may still be several years away.

SUPPORTING THE TRANSITION TO NET ZERO

There is no question that heat pumps will play a central role in the future of sustainable commercial heating. However, achieving net zero is not simply about replacing every boiler with a heat pump. For many existing commercial buildings, hybrid heating systems represent a practical solution on the road to decarbonisation. They allow us to put the right technology, in the right building, at the right time.

To find out more about this subject, book Ideal Commercial Heating's CIBSE-approved 'Low carbon hybrid heating system considerations' CPD at **idealcommercialboilers.com/cpd-courses**.

DECARBONISING HEAT IN EXISTING BUILDINGS

WHAT TO CONSIDER WHEN INSTALLING A HEAT PUMP IN AN OLDER BUILDING

Sachin Vibhute, HVAC and Heat Pumps Technical Consultant at LG

The age of a building tells you surprisingly little about whether a heat pump will be easily installed or not. However retrofitting heat pumps is generally assumed to be a more difficult task, especially with the majority of heating systems in the UK being designed long before heat pumps were even created.

LOOK BEYOND THE ASSUMPTIONS

Before installation, an engineer will want to establish how the current system operates, and how much heat is retained or released. The existing pipework and insulation will affect what is possible, and some buildings will need alterations before a heat pump can work effectively.

Underfloor heating is frequently regarded as a prerequisite for heat pumps, but this isn't always accurate; while it works very well with them, it is not essential. What matters is whether the heating system can deliver the heat the building needs at the temperatures the heat pump is designed to provide.

Cold weather is frequently cited as another reason heat pumps are ruled out too quickly. On the contrary, the temperatures experienced in a UK winter are well within the territory heat-pump engineers are already exploring. At LG, we've established a research consortium in Alaska in 2023 to study high-efficiency cold-climate heat pumps, with research partners testing performance in labs there.

Naturally, some buildings will prove more difficult once the assessment begins. Space may be tight or the building may have a larger heat demand. In those cases, several heat pumps can be configured in a cascade arrangement, sharing the load between them. Individual units can then come into operation as the building needs them, allowing the system to respond to changes in demand. This can be particularly useful where the available plant space makes a single larger unit difficult to accommodate. It also gives engineers more scope to work with the constraints of an existing building, finding a configuration that fits the space and heat demand they have.

The assessment also extends beyond the heating system itself. An installer will need to consider where the equipment can be located and whether the Distribution Network Operator needs to be notified before or after installation.

The installation itself needs planning around how the building is used. The time required will depend on its scale and complexity, and connecting a new system can mean some disruption to heating and hot water. Fortunately, forward planning can help keep that disruption to a minimum.

WORKING WITH THE EXISTING BUILDING STOCK

Gas heating is still the primary source of emissions from public-sector buildings in the UK. Many of these premises will remain in use for years to come and require installation of new energy systems as the drive for clean energy accelerates.

Heat pumps can provide around three to four units of heat for every unit of electricity they consume because they draw heat from their surroundings and transfer it into the building. The IEA estimates that they can reduce greenhouse-gas emissions by at least 20%, compared with gas boilers, even when the electricity supplying them is emissions intensive. As more renewable electricity comes onto the grid, the emissions associated with running them can fall further.

Across an estate, an assessment can help to identify the buildings where heat-pump deployment can begin and those that will need more work. Some might require changes to the fabric or existing heating system before installation makes sense. That gives energy managers a practical basis for deciding where to start and what work will be needed before the unit is mounted.

THE IMPORTANCE OF PRACTICAL TRAINING

To scale heat-pump installations, and reduce energy emissions, it's crucial to address the current skills gap. Heat-pump training must put installers in front of the equipment itself, from system design through to commissioning and troubleshooting. Practical training in facilities that recreate real installation conditions helps build problem solving skills before having to deal with them on site. Installers also need the confidence and experience to install heat pumps in a number of different applications including historic properties through to contemporary offices.

A detailed up front assessment can help establish any complexities indicating what is and isn't possible, across a large estate, that gives energy managers the chance to plan for difficult buildings, broadening the reach of the decarbonisation programme. **https://www.lg.com/uk/**

WHY A NATIONAL WATER STRATEGY MATTERS & WHAT BUSINESSES CAN DO TODAY

Water has become one of the UK's most pressing infrastructure challenges. Population growth, climate change, ageing assets and increasing demand from industry are placing unprecedented pressure on water resources.

While much of the national conversation has focused on pollution and investment in water companies, many experts now believe the issue requires a more coordinated approach.

That was the message behind a new report from the Aldersgate Group, which has called for a National Water Strategy alongside reforms to regional water governance.

The organisation argues that water should no longer be managed through fragmented decision-making but instead through a long-term framework that brings together government, regulators, water companies, businesses and local stakeholders.

Although these proposals are aimed at policymakers, they carry an important message for businesses too. Organisations that rely on water can no longer afford to view it as an unlimited, low-cost utility.

Instead, water needs to be managed as a strategic business resource.

WHY IS A NATIONAL WATER STRATEGY BEING PROPOSED?

The Aldersgate Group believes the UK's current approach to water management is too fragmented to deal with future challenges.

Responsibility for water resources is spread across multiple organisations, regulators and regional bodies. At the same time, demand for water continues to increase from housing, manufacturing, agriculture, energy production and emerging sectors such as AI data centres.

Climate change is also creating more frequent droughts in some areas and greater flood risks in others.

The report argues that a coordinated national strategy would:

- Improve long-term planning
- Better protect water supplies
- Encourage investment in infrastructure
- Strengthen regional decision-making
- Support economic growth while protecting the environment

Whether or not these recommendations are adopted, one thing is already clear: businesses will increasingly be expected to use water more efficiently.

WATER IS NO LONGER JUST ANOTHER UTILITY BILL

For many organisations, water has traditionally received far less attention than electricity or gas. Businesses often invest heavily in reducing energy consumption while knowing very little about how water is being used across their sites.

Yet water costs extend beyond the supply itself.

Excessive consumption can increase:

- Wastewater charges
- Energy costs for heating or pumping water
- Equipment maintenance costs
- Operational downtime
- Environmental impact

Understanding water usage can therefore deliver savings across multiple areas of a business.

THE IMPORTANCE OF ACCURATE WATER INFORMATION

One of the themes running throughout discussions about national water planning is the importance of better information. Governments need accurate data to plan future infrastructure.

Water companies need better forecasting to balance supply and demand. Businesses also benefit from understanding exactly how much water they use and where opportunities for improvement exist. Yet many organisations still rely solely on monthly or quarterly invoices.

These bills provide a total figure but rarely explain:

- Where water is being used
- When consumption increases
- Whether leaks are present
- Which systems consume the most water
- How usage compares with previous months

Without detailed information, improving efficiency becomes difficult.

WATER CONSUMPTION ANALYSIS PROVIDES VALUABLE INSIGHTS

Modern monitoring technologies give businesses far greater visibility over water usage than ever before.

Using Automated Meter Reading (AMR) and water flow data logging, organisations can monitor consumption throughout the day rather than waiting for invoices to arrive.

Detailed consumption analysis can identify:

- Unexpected overnight water use
- Hidden leaks
- Continuous flows
- Seasonal changes
- Equipment operating inefficiently
- Abnormal spikes in demand

These insights allow businesses to investigate problems before they become expensive.

WATER AUDITS TURN DATA INTO ACTION

Monitoring shows what is happening, and a professional water audit helps explain why. Experienced water consultants combine consumption data with site inspections to identify practical improvements.

A comprehensive commercial water audit may include:

- Reviewing water bills
- Checking billing accuracy
- Assessing meter performance
- Inspecting water infrastructure
- Identifying leaks
- Reviewing water-intensive processes
- Recommending efficiency improvements

Many businesses discover opportunities to reduce consumption without affecting productivity or operational performance.

Image by congerdesign from pixabay.com

EVERY DROP SAVED SUPPORTS LONG-TERM RESILIENCE

A National Water Strategy is ultimately about making the UK's water resources more resilient. The same principle applies at business level.

Organisations that improve efficiency today will be better prepared for future challenges, including:

- Rising utility costs
- Water supply restrictions
- Environmental reporting requirements
- Sustainability targets
- Business growth

Reducing unnecessary consumption also helps protect water resources for communities, agriculture and future development.

GOOD WATER MANAGEMENT INVOLVES MUCH MORE THAN REDUCING CONSUMPTION

Businesses should also consider:

- Water bill validation
- Incorrect billing, estimated readings or drainage charging errors can result in organisations paying more than necessary.
- Regular bill validation ensures businesses only pay for the services they actually receive.

LEAK DETECTION

Even relatively small leaks can waste thousands of litres of water over time. A professional leak detection service identifies hidden problems before they become major operational or financial issues.

WATER STRATEGY

As businesses expand, relocate or invest in new facilities, understanding future water requirements becomes increasingly important.

Developing a long-term water strategy allows organisations to plan infrastructure, improve efficiency and reduce future risks.

SUSTAINABILITY AND CORPORATE RESPONSIBILITY

Water stewardship is becoming an increasingly important part of Environmental, Social and Governance (ESG) reporting.

Customers, investors and supply chain partners increasingly expect organisations to demonstrate responsible resource management.

Reducing water consumption can help businesses:

- Lower their environmental footprint
- Reduce wastewater generation
- Strengthen sustainability reporting
- Support corporate environmental commitments
- Improve reputation with customers and stakeholders

Good water management is no longer solely about compliance; it is becoming an important indicator of responsible business practice.

WHY SPECIALIST SUPPORT MATTERS

Every business uses water differently. A manufacturing plant has very different requirements from a hotel, healthcare facility, office complex or distribution centre.

Experienced water management consultants understand these differences and tailor recommendations accordingly.

Rather than applying generic efficiency measures, they assess each site's infrastructure, operations and commercial objectives before identifying the areas where improvements will deliver the greatest value.

This allows businesses to invest where it will have the biggest impact while avoiding unnecessary expenditure.

PREPARING FOR THE FUTURE STARTS TODAY

Calls for a National Water Strategy reflect growing recognition that the UK's water resources require better long-term planning, greater collaboration and smarter management. While policymakers debate future reforms, businesses do not need to wait before taking action.

Improving visibility over water consumption, identifying inefficiencies and developing a long-term water strategy can deliver immediate financial savings while strengthening resilience for the future.

www.h2obuildingservices.co.uk

PREPARING YOUR PORTFOLIO FOR FUTURE MEES TIGHTENING

Alex Au Yeung, Energy Consultant, TEAM Energy

Image: TEAM

The UK Government's long-awaited update to Minimum Energy Efficiency Standards (MEES) provides greater clarity for commercial property owners and asset managers. The Government has confirmed its intention to introduce a more targeted approach, under which private rented non-domestic buildings over 1,000m² in England and Wales would be expected to achieve a minimum Energy Performance Certificate B rating by 2031, where cost-effective and subject to secondary legislation. The proposed interim EPC C milestone has been removed.

While these changes provide additional time, they should not be interpreted as a relaxation of standards. Building energy performance remains closely linked to the UK's net-zero objectives, and expectations for commercial property are likely to continue increasing over the coming years.

For organisations managing property portfolios, the challenge is not simply meeting a future compliance deadline, but making informed investment decisions that reduce risk, protect asset value and improve building performance over the long term.

WHAT CURRENT POLICY SIGNALS TELL US

The latest proposals reinforce EPC B by 2031 as the central policy objective for larger private rented non-domestic buildings over 1,000m² in England and Wales. Although the Government has shown flexibility on delivery timescales and scope, there is little evidence of a reduction in overall ambition for improving energy performance across the commercial property sector.

The removal of interim milestones should not be viewed as a reduction in regulatory pressure. Existing flexibility mechanisms, including the seven-year payback test and exemptions, are expected to remain, meaning only improvements that are practical, affordable and cost-effective would be required. Future policy may also place greater emphasis on operational energy performance, carbon intensity and ongoing reporting, alongside Commercial Energy Performance Certificate ratings. As 2031 approaches, compliance and enforcement are also likely to come under greater scrutiny.

In other words, the future of MEES is less about a single compliance date and more about continuous improvement expectations.

SCENARIO PLANNING: PREPARING FOR MULTIPLE REGULATORY OUTCOMES

With the future shape of MEES still evolving, organisations should avoid planning against a single regulatory outcome.

The most likely scenario is a gradual tightening of standards, with EPC B remaining the key milestone for larger private rented non-domestic buildings and enforcement increasing over time. However, the policy could continue to evolve, and interim thresholds or broader requirements could return in future. In this scenario, buildings rated E to G may face increasing risk if improvement plans are delayed.

A more significant shift would see greater emphasis placed on actual energy use and carbon performance alongside EPC ratings. This could lead to more detailed disclosure requirements and a stronger focus on building performance in operation, making energy data, monitoring and optimisation increasingly important.

Whatever form future regulation takes, the common theme is clear: organisations that understand their portfolio, prioritise investment and improve visibility of energy performance will be better placed to adapt.

MOVING FROM COMPLIANCE TO ASSET STRATEGY

As standards evolve, MEES should be considered within the wider context of asset management rather than as a standalone compliance exercise.

Effective planning begins with understanding where the greatest risks and opportunities exist. Not all assets require the same level of investment, and decisions should take account of factors such as current Commercial EPC ratings, operational performance, lease commitments, occupancy patterns and future asset plans.

Timing also matters. Aligning energy improvements with planned refurbishments and maintenance programmes can help minimise disruption, control costs and avoid rushed retrofit programmes closer to regulatory deadlines.

Achieving EPC B will typically require a combination of building fabric improvements, system upgrades and operational optimisation. Organisations developing an EPC B compliance strategy are likely to achieve better outcomes when these measures are planned as part of a wider asset management programme rather than relying on a single intervention.

At the same time, energy data is becoming increasingly important. Better monitoring and analysis can help organisations understand building performance, assess improvement pathways and identify opportunities to reduce both energy use and operating costs.

THE VALUE OF EARLY PREPARATION

Although the regulatory framework continues to develop, the benefits of early action are already clear. A structured, long-term approach can help organisations prioritise investment, manage compliance risk and align energy performance improvements with wider business objectives.

Those that incorporate energy performance into broader asset management strategies are likely to be better positioned to respond to future changes, whatever form they take.

FUTURE-PROOFING PORTFOLIOS FOR A LOW-CARBON MARKET

The revised 2031 timetable changes the timeline and narrows the immediate scope, but it does not change the direction of travel. Property owners and asset managers now have an opportunity to take a more measured and strategic approach to improving building performance, particularly across larger private rented non-domestic assets that may fall within the proposed threshold.

For many organisations, the greatest risk is not acting too early but leaving decisions until regulatory requirements become more defined. Whether future policy focuses on EPC ratings, operational performance or a combination of both, the portfolios that are already investing in energy efficiency, performance data and long-term asset planning will be best placed to adapt.

Ultimately, MEES readiness is becoming less about compliance alone and more about creating portfolios that are resilient, efficient and fit for a low-carbon future. **www.teamenergy.com**

Explore how our event unfolds here

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