NOV/DEC 2026

EM Magazine

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Estimating real world heat pump performance with SPF



Every day our expert teams at Salix are committed to supporting organisations achieve their carbon reduction targets, improving the lives of communities across the country.

We're committed to working with governments across the UK to reduce our carbon emissions. Our job is to deliver and administer grant and loan funding on behalf of the Department for Energy Security and Net Zero, Scottish and Welsh governments and more. This is delivered across the public sector as well as housing with schemes including the Social Housing Decarbonisation Fund and Public Sector Decarbonisation Scheme.

We're also proud to be work in partnership with Greater Manchester Combined Authority (GMCA) supporting the new Public Building Retrofit fund.

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We are keen to help create spaces where people can thrive, whether it's hospitals, schools, leisure centres or homes.

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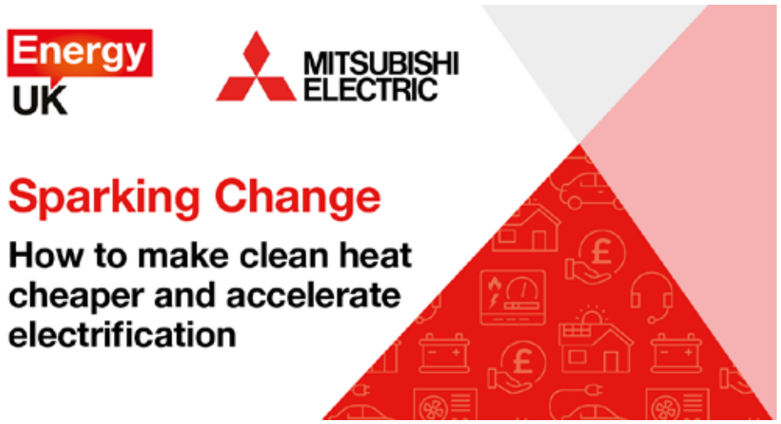


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INDUSTRY SETS OUT PATH TO BRING DOWN ELECTRICITY PRICES AND DELIVER CLEAN HEAT FOR HOMES AND BUSINESSES

The Government must bring down the cost of electricity relative to gas or risk continuing to lock homes and businesses into high prices, according to a new report from Energy UK.



Sparking Change: How to make clean heat cheaper and accelerate electrification, supported by Mitsubishi Electric, sets out how a proposed reduction in the electricity-to-gas price ratio – known as the spark gap – could encourage at least 250,000 additional domestic heat pump installations by 2030 and boost the competitiveness of UK businesses while strengthening energy security.

In the year leading up to July 2026, when the impact of increased wholesale gas prices resulting from international conflict began distorting the spark gap, electricity costs were around four times as much as gas per unit. Policy costs added to electricity bills contribute to this imbalance by artificially increasing prices and weakening the financial case for switching to clean heat – despite heat pumps being far more efficient than gas boilers.

The report calls for a **long-term ambition to reach a spark gap ratio of 2.5:1 for households**, and sets out a pathway to achieve an interim target of 3:1 by 2030 by:

- **Removing all remaining policy costs from electricity bills** and either placing into general taxation, at a cost of £2.5 billion per year, or a new financing mechanism to distribute the cost of levies over a much longer period.
- **Moving the gas standing charge onto the unit rate from April 2028** supported by price protections for low-income, high gas consumption households and regulatory changes to manage the risk of supplier costs recovery.
- **Improving access to low-cost green finance and tailored advice** to overcome knowledge barriers and drive uptake of clean heat solutions.

Bringing the spark gap down to a ratio of 3:1 by 2030 could save a medium dual-fuel customer around £40 on their annual energy bill. If they were to install a heat pump, this could rise to £300.

Moving policy costs into general taxation has already been proven to drive down the cost of electricity against gas. Energy UK estimates the temporary 75% Renewable Obligation discount announced in the 2025 Autumn Budget reduced the spark gap from 4.4:1 to 4:1.

DELIVERING CHANGE FOR BUSINESS

Tackling the high cost of electricity is also vital for UK businesses, which face some of the highest industrial electricity prices in the G7. The report places the non-domestic spark gap between 4.2:1 and 4.5:1, depending on the type of and size of business, falling to a range of 3.9:1 and 4.3:1 in 2029/30.

This slight fall will not be enough to encourage businesses to move away from gas heating. Without any formal targets or policies to drive the uptake of clean heat, the non-domestic will remain exposed to volatile international gas prices.

To bring down the spark gap in a meaningful way for businesses, the report calls for:

- **Removal of Renewables Obligation (RO) and Feed-in Tariff (FiT) costs for all businesses** by moving into general taxation, at an average of £4.8 billion until 2031 when costs will start to decline, or an Energy Transition Funding Scheme.
- **Reforms to business energy taxes** by taking Climate Change Levy charges off non-domestic electricity, which would cost the Exchequer an average of £632 million per annum between FY2027/28 and FY2030/31.
- **Support for business electrification and energy demand management** by:
  - Introducing a Business Energy Upgrade scheme for SMEs.
  - Offering a targeted electricity price discount focused on space heating to enable larger firms to achieve a 10% return on capital costs through energy bill savings.
  - Reforming Enhanced Capital Allowances (ECAs) to support the uptake of low-carbon, highly efficient equipment.

Dhara Vyas, Chief Executive of Energy UK, said:

"Homes and businesses across the UK are struggling with high energy costs while a key driver of those costs remains unchallenged. The single most effective step the Government can take to improve affordability, make better use of our energy system and accelerate the uptake of cleaner technologies is to reduce the price of electricity relative to gas.

"Tackling the gap between electricity and gas prices will make it easier for people to choose clean, electric heating options, encouraging electrification across the UK as the best way to deliver more stable, secure energy prices for customers. Without action to tackle the root causes of high electricity bills, too many are locked out of these benefits.

"Closing the spark gap will also help tackle cost-of-living pressures, drive reindustrialisation, and strengthen the resilience of our energy system and national security."

Russell Dean, Heat Pump Expert at Mitsubishi Electric, said:

"This report clearly highlights a pressing challenge we must now address: UK businesses face some of the highest electricity prices in the G7, and for homeowners, electricity has historically been four times more expensive than gas.

"We have seen welcome measures, like the recent the VAT cut on electricity bills, trying to tackle this but ultimately, temporary relief alone is not enough to reduce this fundamental imbalance.

"We must instead see lasting policy reform to permanently rebalance electricity and gas prices and make low-carbon heating affordable for many more homes and businesses. Narrowing the price difference between electricity and gas to 2.5:1 in the long-term – with an interim 2030 target of 3:1 that could help heat pump uptake boom to at least 250,000 – would massively accelerate the UK's transition to low-carbon heating."

The report Sparking Change: How to make clean heat cheaper and accelerate electrification is available here: **https://www.energy-uk.org.uk/publications/sparking-change-how-to-make-clean-heat-cheaper-and-accelerate-electrification/**



AGEING INFRASTRUCTURE AND CYBER THREATS TOP UK WATER RESILIENCE CONCERNS, NEW SCHNEIDER ELECTRIC RESEARCH FINDS



Schneider Electric, a global energy technology leader, has released The Water Crunch Report, revealing how muchwater resilience is becoming a critical issue for UK businesses and water systemdecision-makers.

One in three (33%) UK business leaders expect water quality or availability to become a serious barrier to operations or growth within the next five years, and a further 37% place that point six to ten years away.

Ageing infrastructure is the most frequently cited obstacle to protecting business operations from water-related disruption: 57% of UK business leaders identify it as a main barrier, compared to 36% across Europe. Cybersecurity is also prominent. Six in ten (60%) rank cyber threats among their top three business continuity risks. Among UK water system decision-makers, 75% identify external cyberattacks on connected water infrastructure as a major threat to resilience.

The research lands against the backdrop of the UK's most severe drought in decades, as well as an increase in the number of cyber security threats to critical infrastructure. Findings point to a growing need to treat water resilience as both an infrastructure and a cybersecurity priority as systems become more connected.

SMART TECHNOLOGY UPTAKE IS STRONG, BUT DIGITAL-TWIN ADOPTION LAGS

UK business leaders report widespread use of smart water technologies to help cut operating costs, protect business continuity and strengthen sustainability performance. Seven in ten (70%) have implemented smart meters and real-time consumption monitoring, while 73% have automated controls for pumps, valves or treatment systems. Nearly two-thirds (63%) have integrated water management platforms, such as SCADA.

However, digital-twin and network-modelling technology remains less common among water system decision-makers: just 25% have deployed it, despite its potential to identify system vulnerabilities early. Three-quarters (75%) say they are aware of the technology but have not yet implemented it.

Clearer regulation could also help strengthen resilience. Four in ten (40%) UK water system decision-makers say clearer regulatory standards would have the greatest impact on their ability to protect operations from water disruption.

"Water resilience depends on more than recognising the risk." said Alex Richards, Vice President for Industrial Process & Automation, Schneider Electric. *"It requires investment in infrastructure, better visibility of water networks and strong cybersecurity as those networks become more connected. The UK findings point to a clear tension: many organisations are adopting smart water technologies, yet ageing infrastructure remains a major barrier, and digital-twin deployment among water decision-makers is still limited. Improving resilience means combining modernisation with clearer standards and robust protection of connected systems."*

"It's easy to write off this summer's droughts and impact on industry as a one-off, but this is now a structural feature of operating in the UK and Europe," said Sophie Borgne, Water & Environment Segment President of Schneider Electric. *"Right now, around half of the UK and EU are under some level of drought, according to the EU's European Drought Observatory. Reusing water can reduce our dependence on rivers and reservoirs already under strain, yet less than 1% of treated urban wastewater is reused across the UK today. The organisations investing in smart water technology are turning water efficiency into a competitive advantage."*

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ENERGY AS A SERVICE – EXPLAINED



Bob Downing, VP of Sales - Energy Solutions, AVK-SEG

The main barrier in the data centre industry right now is no secret. It's widely known that grid and power constraints are the biggest blocker to data centre operations, with the wait for a grid connection spanning up to ten years. Primary hubs like Dublin, Frankfurt, and the Netherlands are experiencing moratoriums or restrictions to power.

AVK has always had a solutions-focused outlook. Our priority is problem solving with an innovative approach, providing a logical route around problems that block progress. The solution we're proposing: Energy as a Service (EaaS). Energy as a Service will provide the one most important thing that data centre developers are searching for right now: Speed to Power.

WHAT IS ENERGY AS A SERVICE FOR ON-SITE POWER SOLUTIONS?

EaaS is a way that data centre operators can access power without experiencing the constraints of pursuing a traditional grid connection, resulting in years of stagnancy. Microgrid, BTM (behind the meter) technology provides a way to generate on-site power – an independent energy station that powers the data centre without requiring a connection with the grid service in that area. This offers grid independence for a higher level of resiliency and bypassing grid fluctuations in power. It also allows Speed to Power – a microgrid can be operational within 2-4 years as opposed to waiting up to a decade for a grid connection, allowing for increased operational years. The only problem: the upfront CapEx.

Traditionally, data centre operators have the financial responsibility in the equation, funding the construction and subsequent maintenance of the microgrid, whilst owning the asset. With Energy as a Service, the operator shifts from buying the equipment, to buying the outcome. EaaS allows customers to purchase only the power they receive, instead of the infrastructure generating it. So, who owns the infrastructure? That's where AVK comes in.



INFRASTRUCTURE FUNDED, OWNED, AND OPERATED BY AVK

Along with EaaS comes a data centre operator's need for external funding. That's where AVK is introduced into the process. We're proud to now offer a funded service for on-site power generation for data centres via our new funding arm, AVK Capital. AVK Capital will fund and own, whilst Core AVK operates prime power with microgrid technology for data centres to become operational, up to eight years in advance.

It's our contractual process that is the differentiator to our usual offering. The developer signs a Power Purchase Agreement (PPA) and pays per kWh as an operating expense. The data centre operator is therefore able to bypass the upfront investment as well as the asset ownership, alleviating the pressure on their books. AVK finances and owns the on-site power infrastructure directly. With this comes speed to power for the operator, as well as the financial freedom of having the CapEx disappearing from the balance sheet entirely.

WHAT'S IN IT FOR YOU?

There are multiple benefits to accessing power using the route of Energy as a Service (EaaS). Let's go through them.

MOVING TO YOUR OPEX SHEET

This structure has the biggest impact to your balance sheet. Suiting data centre developers of all sizes, from emerging companies to hyperscalers, removing the upfront investment that is required for BTM technology alleviates pressure and financial burden. Operating costs are a much less intimidating figure, meaning a developer can avoid debts and focus on making profit.

BYPASSING OWNERSHIP

Ownership of large technology assets comes with responsibilities; servicing and maintenance of the systems. Not only is this an additional monetary responsibility, but it is a requirement to ensure the technology is running at its optimal performance. This responsibility can be removed with our EaaS model – the assets are owned by AVK, meaning that maintenance requirements are off your to-do list.

SPEED TO POWER

There's no downplaying how valuable Speed to Power in data centre development is right now. With funded off-grid technology, data centre construction can begin much sooner without the years of waiting for a traditional grid connection. This means an operational data centre years before the alternative, meaning you can benefit from a faster route to profit.

TRUSTING AVK

We are the only power provider to be offering end-to-end power solutions, BTM solutions, and a funded option. Our extensive offering is something that we have enhanced over years of experience, and will be a true asset to your data centre operations.

Our end-to-end solutions are comprised of standby solutions, modular PowerPods, microgrid technology and ongoing servicing, along with fuel cells, battery technology and sustainable focuses such as managing carbon at source. There isn't another company out there offering what we are, and it's all informed and supported by our 37-year history in power solutions for data centres. All your power needs provided under one partner, with the skills and knowledge to bring innovation to your solution.

Our recent investment from Partners Group is allowing us to fund your power solutions, offering the Speed to Power that will give you the advantage in the market. If you're interested, contact our team – we'll start this process together.

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WHAT FULL BUILDING VISIBILITY LOOKS LIKE IN PRACTICE

A Newcastle student accommodation block has become the first site in the UK to run every module of the Irus ecoSystem. The result is a building that reports on its own energy, water and safety performance, and acts on waste the moment it appears.



Every energy manager knows the problem. Waste is rarely obvious – a heater runs in an empty room., a tundish drips heated water down the drain, a tap is left running, a shower goes on too long, a hob is left on, etc. Each one is small. Together they add up to higher bills, more carbon and, sometimes, genuine risk.

For student accommodation operators, the pressure is on. Energy costs are high, sustainability targets are tightening, and the duty of care to residents goes beyond keeping rooms warm. Operators need to know what's happening in their buildings, and they need to act on it quickly.

Resolving these issues has culminated in Camden Court.

A TEN-YEAR PARTNERSHIP

Camden Court is an on-campus building in Newcastle upon Tyne, operated by Unite Students in partnership with Northumbria University. It is home to more than 350 students, in en-suite rooms and self-contained studios.

It's also the latest demonstration of a ten-year partnership between Unite Students and Prefect Controls. The collaboration has helped develop the Irus ecoSystem. Unite Students provided live buildings to test new modules, led deployment across its estate and gathered resident feedback. Prefect led technology development, system design and integration.

Across Unite Students' wider estate of around 100 sites and 40,000 rooms, Irus saved 18.2 million kWh and more than 4,500 tonnes of carbon last year alone.

"Together we've created something that's delivering measurable value across our estate, helping us to significantly reduce our energy consumption and carbon emissions while supporting resident comfort," says Ian Bamforth, Head of Estates at Unite Students. "It has given us far greater visibility of building performance, helping us to deliver more consistent room temperatures, faster fault resolution and healthier living environments for students."

ONE BUILDING, ONE CONNECTED SYSTEM

Camden Court is the first site in the UK to have every Irus module installed. The work covered 345 rooms and took seven weeks.

Heating comes first. SpaceHeat delivers heat to each room, but only when it's needed, also tracking temperature, humidity, occupancy and energy use. Residents have individual control through ControlSensor, and operators keep oversight from a single portal.

Hot water is next. SmartTank controls water heating and measures use, temperature, and waste, catching avoidable losses such as tundish flow.

Water monitoring runs right down to the outlet. Sensors on taps and toilets pick up continuous flow and track water temperature to support Legionella management. ShowerSense shows residents how their use compares with their neighbours'. Humidity sensors flag the conditions that lead to damp and mould before they take hold.

Flat-level metering makes unusually high use visible straight away. While HobSensus, fitted to all electric hobs, cuts power automatically if a hob is left unattended and becomes dangerously hot.

TURNING DATA INTO ACTION

Communication with residents ties it all together. Through Prefect's Behavioural Sustainability Initiative, operators can message a single room or the whole building. The system also sends automated nudges based on what's happening in each room, such as a prompt to ventilate when humidity rises or advice on consumption when use is high.

The building doesn't just record waste. It responds to it, often before anyone needs to step in.

THE RESULT

Camden Court gives Unite Students full visibility of energy, water and safety performance, down to individual rooms, and the ability to act the moment an issue arises. For energy managers looking to get more from existing buildings, it's a clear picture of what connected control can deliver. **www.prefectcontrols.com**

ENERGY OPTIMISATION: MANAGING THE WHOLE ENERGY SYSTEM

Rising energy costs, changing market conditions and growing pressure to demonstrate environmental performance are forcing organisations to rethink how they manage energy. Dominic Simonnet, Director of Projects & Capital Partnerships at Plug Me In, argues that the next step is to move beyond individual technologies and optimise energy as a whole.



For those responsible for managing energy across a site or portfolio, the challenge is no longer simply reducing consumption. It is understanding when, where and how energy is being used, and finding ways to make that energy work smarter.

A site may already have solar PV, an energy management system or a competitive electricity tariff, but that does not necessarily mean its energy strategy is optimised.

Energy markets remain difficult to predict, while geopolitical events can quickly affect costs and supply. At the same time, organisations face increasing pressure to demonstrate progress on carbon reduction, ESG and environmental performance, while regulatory requirements are also becoming more demanding. These pressures are unlikely to disappear, making it vital to understand the value available from existing energy infrastructure and future investment.

START WITH THE DATA

The logical starting point is not technology, but data. Understanding consumption can reveal patterns that are invisible on a monthly bill. When is demand highest? How much electricity is being consumed during expensive periods? Could battery storage reduce peak demand or take advantage of lower-cost periods?

These questions allow organisations to assess where investment could have the greatest impact rather than selecting technologies first and making them fit afterwards.

This is particularly important for large energy users. A battery may provide value through several routes, while solar can reduce grid consumption, but the financial case depends on the site's specific consumption profile, tariff structure, network charges and operating patterns.

The same applies to EV charging. For a fleet operator or large workplace, simply installing chargers may increase electricity demand and create additional peaks. Integrating charging with solar, battery storage and intelligent scheduling can allow vehicles to be charged when electricity is cheaper or when on-site generation is available.

BEYOND INDIVIDUAL TECHNOLOGIES

Rather than treating different elements of an energy strategy as separate, organisations should consider how they can work together as a whole.

This could mean moving consumption away from expensive periods, storing electricity when costs are lower, using on-site generation more effectively and, where assets qualify, participating in flexibility or grid-service markets.

Network charges are another consideration. Transmission and distribution costs can significantly affect the economics of energy use, meaning reducing demand during relevant charging periods can be as important as reducing total consumption and thus, potentially, meter type.

There is another dimension to optimisation: energy assets can potentially create value as well as reduce costs.

Battery storage, for example, can be used not only to manage on-site consumption but also, where the asset and market conditions allow, to participate in grid balancing and flexibility services. Aggregation can bring multiple assets together, while battery optimisation and energy trading can create additional revenue opportunities.

These opportunities will not be available or appropriate for every organisation, but they demonstrate why energy infrastructure should be actively managed rather than simply installed and maintained.

MAKING THE NUMBERS ADD UP

The objective of energy optimisation is not simply to use less electricity, but to use it more intelligently. However, any proposal is only as reliable as the assumptions behind it.

Our current modelling suggests that a fully optimised strategy could deliver electricity cost reductions for fixed rate, flexible or pass-through tariff customers of around 30% to 60%, although the actual opportunity will vary between sites. These figures are based on internal analysis and modelling of live customer data. The results should be viewed as an indication of potential rather than a guaranteed outcome.

The same principle applies to projected revenue from flexibility markets, battery trading and other services. Market participation depends on the asset, connection, meter configuration, market conditions and eligibility.

For energy managers, transparency over these assumptions is essential. A credible proposal should show not only the headline saving, but where that saving comes from and which elements are based on historical data, modelling, market assumptions or theoretical performance.

FROM PROJECT TO ONGOING MANAGEMENT

Optimisation does not end when equipment is installed. An energy strategy that worked well when a battery or solar array was commissioned may not remain the most effective several years later as tariffs and consumption patterns change.

Continuous monitoring and active management can help identify these changes and adjust how assets operate. For organisations with multiple sites, this also creates the opportunity to look at the portfolio as a whole rather than treating every building independently.

As organisations balance cost, environmental and operational demands, the technologies are only part of the answer. The greater opportunity lies in making them work together.

https://www.plugmein.com/

WHY BUILDINGS UNDERPERFORM DESPITE AMBITIOUS ENERGY TARGETS

Graeme Hamilton, Managing Director – Energy, OCS



Organisations are investing heavily in decarbonisation plans, but many still struggle to achieve the energy savings they expect. The reason is often not strategy or technology, but the way buildings are managed once they are operational.

However, despite the planning and ambition, many organisations are still struggling to achieve the results they expected. Across countless estates, intention still fails to translate into performance. The root of the problem is that energy management is treated as a strategy exercise when it is, in practice, an operational discipline.

A building's energy performance is shaped daily by how systems are run, how assets are maintained, and how decisions are taken in real time. That is why the distance between what a building was designed to achieve and what it ultimately delivers remains one of the most persistent challenges in the built environment.

WHEN OPERATIONAL REALITY TAKES OVER

A building can be completed to the highest environmental standards and still fail to perform once it is occupied and in daily use. Once day-to-day pressures arrive, including compliance obligations, budget constraints, shifting patterns of occupancy and competing priorities, original ambitions start to weaken.

Healthcare illustrates this well, where clinical need will always take priority. Heat pumps, for example, warm spaces more gradually than the gas boilers they replace. If a ward is uncomfortably cold and patients are elderly or recovering from surgery, temperatures may be increased manually to improve comfort.

The immediate problem is solved, but if settings are not reviewed afterwards, systems can continue working harder than necessary for extended periods. The result is higher energy use despite the building having been designed correctly in the first place.

THE PEOPLE CLOSEST TO THE ASSET

This is why facilities management matters so much to the energy transition. FM teams must balance cost, compliance, comfort, safety and sustainability across all operations. They understand first-hand how buildings perform in practice rather than how they were expected to perform on paper. Working alongside assets every day gives them a detailed understanding of how spaces are used, how systems respond to changing demands and where inefficiencies can emerge. That perspective puts them in a unique position to identify opportunities for improvement and ensure energy strategies translate into measurable outcomes.







It is often FM teams who identify sources of energy waste others miss. Simultaneous heating and cooling, poorly configured set-points and underused building management systems can all drive unnecessary consumption. Individually, these issues may appear minor, but together they can have a significant impact on both costs and carbon emissions.

To identify and address those inefficiencies effectively, FM teams need access to robust data rather than assumptions or periodic audits that capture only a single moment in time. This provides operational teams with visibility of how buildings perform day by day. Live and historic data reveal where losses are occurring, where systems have drifted from their intended settings and where interventions will deliver the greatest value.

Combined with the operational expertise of FM teams, these insights enable issues to be identified, addressed and monitored over time, helping buildings perform as intended and ensuring energy strategies deliver lasting results. They also provide the robust evidence organisations increasingly need to support carbon reporting, demonstrate compliance and justify investment decisions. As stakeholders, regulators and funding bodies place greater emphasis on measurable outcomes and long-term value, access to reliable performance data is becoming ever more important.

CLOSING THE DELIVERY GAP

However, identifying opportunities and generating evidence is only part of the challenge. The real test lies in translating those insights into improvements that are implemented, maintained and sustained over time. The delivery gap is the distance between identifying an energy improvement and actually seeing it installed, running and still saving energy years later. Advice alone rarely crosses it.

At OCS, the launch of our Energy Services business unit reflects a straightforward recognition: customers need more than assessments and audits. They need a route from early assessment through to delivery, maintenance and optimisation. Bringing engineering, energy and FM expertise into one structure allows improvements to be identified, implemented and then sustained.

Full-lifecycle thinking matters because energy performance is never finished at handover. Solar panels, upgraded controls and low-carbon heating systems still need to perform effectively once they are in operation. Without ongoing maintenance, monitoring and optimisation, expected savings and carbon reductions can quickly erode.

Better energy management will not be achieved through strategy alone. Plans, investment and technology all matter, but their success depends on what happens after implementation. Organisations that want to cut waste, reduce carbon and build more resilient estates must give operational management the attention it deserves. The future belongs to those that can turn energy ambition into day-to-day delivery. **www.ocs.com**

BETTER ENERGY MANAGEMENT STARTS WITH BETTER DATA

Angela Bishop, UK CEO of Zühlke



For energy managers, securing energy at the right price is only part of the challenge. As markets fluctuate, renewable generation grows and electrification increases demand, organisations need better insight into when and how they use energy. Connecting data across energy systems, and using tools such as AI to analyse it, can help businesses control costs, improve efficiency and respond to changing conditions. Better information also helps energy managers explain what is driving costs and secure buy-in from colleagues for proposed changes.

The key question energy managers will be asking is: how can we adapt to changes in the energy system while keeping the business running? Combining meter readings with production plans, equipment schedules and tariff information can reveal when demand could be shifted with minimum impact on operations. For example, deciding whether to switch off an industrial oven until power prices fall involves weighing potential savings against the disruption of stopping and restarting production. This requires an understanding of equipment constraints, production commitments and whether the site's tariff allows it to benefit from changing prices. AI can support this analysis by forecasting consumption and identifying patterns, but the foundation is reliable data that is accurate, accessible and usable across systems.

Realising these benefits requires better connections between relevant data sources both within an organisation and across the energy sector. Wider efforts to improve data sharing matter because energy managers may need information from suppliers, network operators and equipment providers alongside their own site data. The practical value lies in bringing that information together to assess a specific operational or investment decision.

Better information also helps energy managers demonstrate their value to the wider business. Energy management often involves complex technical considerations that can be difficult to communicate to colleagues focused on costs and operational performance. For example, assessing an investment in rooftop solar requires an understanding of the site's consumption patterns, expected generation, installation costs and tariff arrangements. Comparing scenarios can show how the financial case changes under different assumptions about future demand and prices. This helps energy managers build a stronger business case, demonstrating potential savings, return on investment and the trade-offs behind their proposed changes.

For businesses, it is vital to look beyond a platform's immediate capabilities. A tool that solves an immediate problem may offer limited long-term value if it cannot exchange information with existing systems. Whether adopting AI or other digital tools, energy managers should consider interoperability, data quality and security alongside cost and functionality. The level of engineering and assurance should also reflect the task. Analysing historical consumption to inform a human decision is different from automatically controlling equipment in response to price signals. The latter requires rigorous integration and testing because an incorrect or delayed instruction could affect operations.

Organisations need not wait for a fully connected energy system to make progress. They can start with a costly or recurring decision that better information could improve, assess the quality of available data and test a solution against current performance. Measuring the results of any changes, helps establish whether the investment reduces costs, improves efficiency or strengthens operational performance, and whether it merits wider adoption.

As the energy transition changes how businesses buy, use and manage energy, energy managers face practical questions. Are we getting value for money, where can we reduce consumption, and when should we shift demand? How can we explain the costs and trade-offs to the rest of the business? Answering them requires reliable data that can move between systems and organisations. AI can help turn that information into better decisions and make the reasoning behind them easier to explain, but its value depends on those foundations. Getting them right can give energy managers greater confidence in their recommendations and a clearer basis for securing support. **www.zuehlke.com**

ANDY BURNHAM: A NEW DIRECTION ON NETZERO & POSSIBLE FUTURE PATHWAYS?

Rinnai Director Chris Goggin evaluates the new potential path of UK emissions reductions under Prime Minister Andy Burnham. As NetZero has become increasingly polarising both domestically and internationally by some mainstream media outlets, the UK's pursuit of carbon neutrality must be adapted to match both public demand and market forces. Continue reading to see the how and why of NetZero being altered to combat diminishing political and public support fuelled by global economics and media misinformation.



To begin this article, it must be clarified that there is no political bias that has motivated any aspect of this reportage. Transparency must be used to provide the UK market with information that provides insight into the misinformation and weaponisation of energy. At the time of writing, it is widely accepted that 97% of the global scientific community accept that accelerated climate change is due to global industrial practises.

Global fuel provision is a discernible aspect of opposing political thought and is therefore the subject of distinct interpretations made by opposing ideologies. This article's intention is to not suggest any political bipartisan support but to explain why energy is a key component of domestic as well as international economics and politics.

UK NetZero ambitions are still in place and legislated into law. The UK's primary net zero legislation is anchored by the Climate Change Act 2008, which was amended in 2019 to legally bind the government to reaching a 100% reduction of net greenhouse gas emissions by 2050 compared to 1990 levels. However, there is loud disillusionment in sections of mainstream media and politics.

The scientific led aim of UK carbon neutrality has been increasingly used to polarise viewpoints and is now considered by a significant minority as an unnecessary cost that is preventing personal and national economic growth.

Damage to the reputation of NetZero is so successful there have been calls for a rebranding by the Energy Security and NetZero Committee, a cross-party group of MPs who advised the Prime Minister to refrain from using the term "NetZero" as the term has "lost much of its significant positive association," and instead has become a "lightning rod for opposition to climate action." Additionally, the committee also suggested that "NetZero" should be dropped from the governmental department title of: "Department of Energy Security and NetZero."

Instead, the UK's new Prime Minister Andy Burnham has reconfirmed his support for NetZero aims by introducing a new People's Power project. This £30 million scheme will focus on implementing community-based renewable energy. Communities across the UK will soon be able to construct and control their own renewable energy supply.

The investment stems from Great British Energy, a publicly owned company created by the UK government to invest in local clean energy projects. In time, over 1,000 community led renewable energy projects will be financed by Great British Energy.

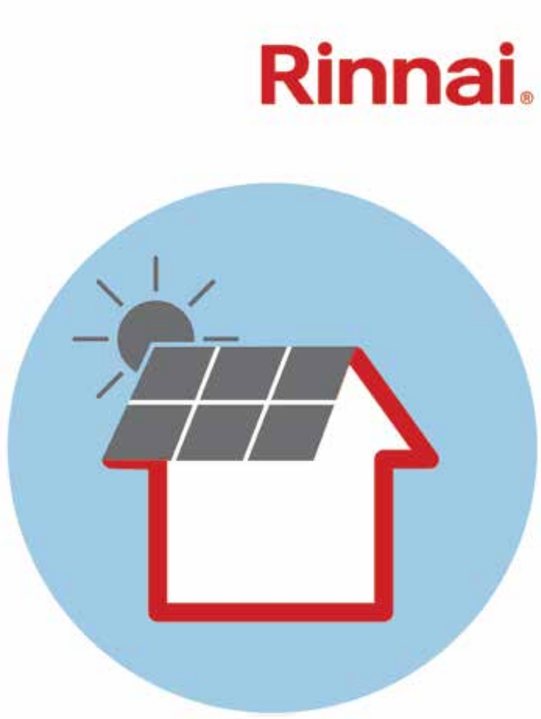
Additionally, Andy Burnham has announced the creation of Great British Grid, a publicly owned company designed to bring energy costs in line with Europe inside ten years. Great British Grid will apply pressured competition for renewable grid connection projects.

In a recent newspaper article Andy Burnham wrote, "Every council and community group awarded funding will have at least part-ownership in its renewable energy projects. That means, in the years ahead, more and more communities in Britain will do more than simply host solar panels and wind turbines. They will own a stake in them and retain a share of the wealth they create."

Prime Minister Andy Burnham has taken this course of action regarding community renewable projects because of past success in rejuvenating Manchester's public transport system from his time as Mayor of the city.

Control of buses and trams was handed over to a central system as opposed to the private sector which had been in place for nearly 40 years. Fares were capped and free transport was issued to the young and old. Despite being centrally controlled, the public benefits from having all financial proceeds being placed back into the transport network with the aim of upholding steady and cost-effective public service standards.

Although a positive step towards clean power introduction to UK communities, it remains to be seen if the same public friendly approach to local transport can be utilised in local clean energy provision or domestic fuel policy and if this approach aligns itself with current public and mainstream media support.



It appears that Andy Burnham is pivoting away from free market conditions to a more flexible approach. From an objective view, free market conditions under which water and rail companies operate, have not produced cost-effective and adequate public services. In particular the water companies are shackled with billions of debt.

There are many obstacles that Andy Burnham will have to confront in his attempt to introduce community renewable energy projects. Great British Energy has been created to introduce renewables only. No oil, gas or electricity will be dispersed by Great British Energy, meaning that solar and wind will be prioritised.

This will provide a level of dissent from homeowners who prefer to keep landscapes untarnished from solar PV modules and wind turbines, a concern that some sections of the mainstream media perpetuate. As well as supporting homeowners, some mainstream media outlets are also culpable of spreading significant misinformation related to inflating overall government cost and by diminishing environmental impact, or by claiming that natural weather patterns are the sole cause of accelerated climate change.

As NetZero has been demonised by select sections of the mainstream media Andy Burnham has been forced to apply a vaguely populist approach to UK decarbonisation. This is evident in a range of modifications to MEES standards.

The first applies to the ruling that states from 2031 buildings over 1000 sq meters must upgrade their MEES status to band B. Other notable proposals include the 2030 EPC Band B upgrade for non-domestic buildings under 1000 sp meters being moved to 2031, and the abolishment of the 2027 band C upgrade - for domestic properties, will remain in 2030.

Reviewing in further detail regarding required MEES standards upgrades, non-domestic rented buildings over 1000 sq meters are now advised to enhance their MEES status from band E to band B by 2031. The previous date for final energy system refurbishment was 2030. This new direction will provide landlords with an additional year to complete their new installations.

This means that business owners must improve their energy systems by installing new or adapting existing heating and hot water apparatus to be more energy efficient by 2031. Landlords risk financial penalties as well as having their license to rent properties revoked if they do not comply.

Businesses that rent non-domestic buildings under 1000 sq ft will now no longer have to convert their on-premises heating and hot water system to band B from band E, with no incoming deadline that enforces change. This proposal is designed to provide small business owners with a balanced approach that assists financial stability.

The third proposal focuses on the abolishment of the band C upgrade of MEES standards for domestic rented properties. The previous government aimed to move this to 2027, instead the new date of compliance is set at 2030. This is also designed to alleviate landlords of having to arrange costly modifications.

All three new regulations will combine to create a version of NetZero that is less immediate in its aim of decarbonisation but more thoughtful in respect to the financial considerations of landlords and renters of domestic and non-domestic properties.

These proposals have been prioritised to ensure that any renovations towards energy systems are only considered and completed if they are practical, affordable and cost-effective.

In regard to these three new proposals of policy adaptations, what can the non-partisan observer extrapolate from this new governmental approach? All three suggestions which imply a change of direction in UK decarbonisation strategy are centered on the financial concerns of both renters and landlords of non-domestic and domestic properties. This means that the new government is prioritising fiscal equilibrium over an aggressive form of decarbonisation.

The reasons for this could be viewed as political, as a new government attempts to mould a supportive public image, it would be a sensible move to reduce future costs across the property sector to both renters and landlords, as this will shape appearance into a friendly form to both concerned parties.

An additional political benefit of rolling back elements of UK NetZero policy could be viewed as supporting a public view, or lack of. As NetZero has been demonised by opposing voices in UK media the public are keen to shift the pace of a national energy transition towards a more comfortable financial setting. A majority of the UK public understands that national energy stocks must be replaced with clean alternatives but are equally concerned with financial impact.

Andy Burnham remains an advocate of NetZero and does not wish to rebrand the environmental pursuit. However, it has also been recognised that imposing attached economic commitments to the wider public could risk near abolishment of carbon reducing aims that are enshrined in UK domestic and international law.

This is why the current government is applying a redesigned approach to the fiscal concerns held by many people in the UK. Andy Burnham will continue to assert NetZero values into his time as head of the UK state. It remains to be seen if a more flexible, if not obsequious application of UK decarbonisation will be successful, or if this too becomes the subject of media, political and public scrutiny.

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

MAKING RETROFIT WORK FOR EVERYONE: WHY RESIDENT ENGAGEMENT IS THE TRUE METRIC OF SUCCESS

Kevin Smallwood – assistant director of housing, Salix Finance



Upgrading buildings to achieve net zero targets and reduce energy demand is about more than just property. Drawing from our experience working with grant recipients delivering Social Housing Decarbonisation Fund Wave 2 and Home Upgrade Grant Phase 2 projects across England, we know it's about people.

A successful domestic retrofit project cannot be judged solely by its technical specifications or the number of measures installed; true success lies in the experience of the residents living inside upgraded homes.

To achieve success, organisations working to decarbonise the UK's housing stock need to think beyond the installation phase.

While upgrading insulation, energy sources such as solar and transitioning to low-carbon heating systems are vital steps toward our net zero targets, these technologies represent a massive cultural and behavioural shift for the people using them.

BEYOND THE HANDOVER

Making retrofit work for everyone means ensuring support doesn't stop when contractors pack up their tools.

Historically, it's often the engineering and financial complexities of the physical upgrades that have dominated project management timelines.

However, resident engagement must be treated as a core technical workstream, rather than a compliance box ticked at the end of the project.

The way that an individual, family or group lives within a property can vary greatly and when we introduce new and unfamiliar technologies into a home, we are altering how a household interacts with their living space.

Where a house has been insulated to retain heat and a gas boiler has been replaced with and air source heat pump the heating system will act in a very different way.

Where a traditional gas boiler operates on an intermittent, high-temperature cycle, an air-source heat pump relies on steady, low-temperature management.

If a resident doesn't understand how to operate their new system, the anticipated energy savings, carbon reductions and thermal comfort levels won't materialise.

Bridging this gap requires clear, continuous and accessible education.

Without this education, we risk alienating the very people these projects and schemes are designed to protect and lift out of fuel poverty.

I believe the answer lies in optimised resident engagement strategies considering three key areas.

1. USE SIMPLE LANGUAGE

An important part of resident buy-in is to ensure they understand the basics: what, when, why, how and who.

Domestic retrofit projects often see multiple surveys, different contractors and various experts involved in delivering upgrades to the same property.

When you're speaking with residents about what lies ahead, be honest, be open and be transparent on what they can expect, by when, why it's important, how they can expect to be contacted about this and by whom.

Reduce the use of technical jargon or acronyms and ensure that all engagement materials are simple, visual and accurate.

2. ACCESSIBLE COMMUNICATION AND THE PAS HANDOVER PACK

We must bridge the digital divide for vulnerable tenants while correcting a long-standing operational failure: the delivery of the handover pack.

Providing information in an easy-to-read, highly visual format is essential for true resident accessibility and understanding.

However, this simplicity must not come at the expense of compliance.

For years, PAS-mandated handovers have either been entirely overlooked or filled with documentation that's highly technical in nature and can be unfit for use by the resident.

Landlords must deliver a physical, clear and plain English handover pack that is accessible and understandable to the householder, whilst also containing all necessary legal and technical certificates required by PAS 2035.

Through our work, we've seen organisations use a mix of traditional print materials alongside websites that offer translation services, digital explainer videos and even in-person tutorials offered by staff to achieve best success.

3. ENSURE YOU'RE AVAILABLE FOR STRUCTURED, POST-INSTALLATION SUPPORT

Our work to support residents shouldn't stop when the work is complete and handing over a dense, technical manual is often insufficient.

Frontline team members such as resident engagement officers or retrofit advisers should look to provide structured, in-person 'handholding' sessions at regular intervals (e.g. two weeks, three months, six months and nine months post-installation) to walk residents through their controls during changing seasonal conditions.

A SHARED RESPONSIBILITY

As energy managers, the pressure to meet performance targets, manage supply chains and de-risk capital delivery is immense.

However, the social fabric of retrofit is what ultimately protects the financial and structural investments we make.

Government-funded domestic retrofit schemes such as the Social Housing Decarbonisation Fund and Home Upgrade Grant represent a historic opportunity to reshape the quality of housing in the UK.

Through our work with grant recipients to date, we've seen more than 80,000 homes upgraded at benefit to residents. However, with the government's commitment to upgrade five million homes by 2030, there's more great work to come.

From sparce rural communities to highly populated urban settings, we've seen organisations successfully deliver projects in a variety of housing architypes from high-rise blocks of flats to cottages dating back hundreds of years.

This has taught us the necessity in not only ensuring a unique approach for the building, but also the importance in the behaviour and way of living for the people that live within.

Similarly, our experience supporting the delivery of public sector decarbonisation projects in England, Scotland and Wales has highlighted the need to ensure we consider the people that use the space as much as we consider the fabric of the building itself.

By embedding an inclusive, people-first mindset into the DNA of project delivery, we'll ensure that the transition to low-carbon living leaves no one behind.

Let's measure our success not just by the smart meters and EPC bands, but by the comfort, confidence and wellbeing of the residents we serve.

To find out more about what we do at Salix, visit our website **www.salixfinance.co.uk**

WHY NOW IS THE TIME TO START UPGRADING INEFFICIENT HEAT NETWORKS

The Heat Network Efficiency Scheme provides an actionable opportunity to improve underperforming communal and district heating systems in England and Wales. Upgrading now can reduce waste, improve comfort, support lower carbon operation and place operators in a stronger position for the technical assurance requirements ahead, says Baxi's Elliot Newton.

Heat networks have a vital role to play in the UK's transition to lower carbon heat. When operating at their best, they provide reliable, efficient heating and hot water to multiple homes and buildings from a centralised energy source. But many existing communal and district heating systems are simply not performing as well as they should.

CHANGING REGULATORY LANDSCAPE

For operators, landlords and building owners, the message is becoming increasingly clear: inefficient heat networks need to be assessed, optimised and, where necessary, upgraded.

The case for action is supported by two important developments. First, the regulatory landscape is changing, with the Heat Network Technical Assurance Scheme (HNTAS) set to introduce mandatory technical standards for new and existing networks. HNTAS is planned to launch for new heat networks in 2027, whereas existing networks will receive extended, phased transition frameworks and performance improvement plans to upgrade over time. Second, government-backed funding is available through the Heat Network Efficiency Scheme (HNES) to support improvements to underperforming systems.

The HNTAS framework is expected to cover communal systems as well as larger district networks, with requirements focusing on areas such as heat losses, flow and return temperatures, metering, monitoring, commissioning and ongoing performance. It will increase the emphasis on measurable performance, accountability and evidence, problems that can currently be hidden in the day-to-day operation of existing heat networks.

Although the scheme is being phased in for existing heat networks to give the sector time to prepare, nevertheless it signals a decisive shift towards regulated, formal technical assurance. For operators, the advice is not to wait until compliance deadlines arrive before understanding where improvements need to be made.

FUNDING OPPORTUNITY

This is where HNES creates an immediate opportunity for the sector – the carrot to the HNTAS stick.

At the initial stages, HNES can fund optimisation studies to diagnose performance issues in existing district and communal heat networks in England and Wales that are operating sub-optimally. These might be due to the plant, pipework, controls, heat interface units (HIUs), or indeed a combination of these factors. An upgrade strategy can then be developed, supported by HNES funding and aligned with HNTAS.

Let's consider HIUs. Where HIUs that connect individual dwellings to the wider network are identified as part of the upgrade strategy, replacing existing mechanical units with modern electronic HIUs can deliver tangible benefits to operators, service teams and consumers alike.

Remote monitoring – The 24/7 real-time remote monitoring and diagnostics capabilities offered by modern electronic HIUs is a major advantage. This feature enables heat network operators to ensure optimal efficiency from the units, improves first-time fix rates and is estimated to reduce callouts and on-site visits by two thirds. The reduced disruption benefits both residents as well as operators and service teams in multi-occupancy buildings, where arranging access can delay repairs and increase cost.

Compensated heating – Upgrading to modern electronic HIUs can also help operators tackle one of the most persistent efficiency challenges in heat networks: elevated return temperatures. Lower return temperatures improve the overall performance of the primary network, reduce losses and can support more efficient generation, particularly where networks are moving towards lower carbon heat sources such as heat pumps.

Dwelling-level control – Modern HIUs also enable more precise control at individual dwelling level rather than relying on a blanket approach to heat delivery and cost allocation across the building. This enables fairer, usage-led operation while giving residents greater control over their own comfort.

Reduced standby consumption – One of the biggest issues with older mechanical HIUs is the amount of thermal energy consumed simply to keep units warm. Electronic HIUs with self-learning functionality are able to lower the temperature in the plate when appropriate, helping minimise unnecessary energy and water consumption while maintaining customer comfort.

COMFORT, COMPLIANCE AND EFFICIENCY

Of course, HIUs will not be the right solution in every building and every heat network, but the benefits outlined here from an upgrade demonstrate the value of assessing actionable efficiency improvements now.

Manufacturer expertise and support can be critical in turning heat network improvement plans into successful projects, particularly where critical aftercare support is provided to ensure ongoing high performance and meet future technical assurance requirements. With its end-to-end heat network solution service, Baxi can support operators, landlords and building owners in identifying the right approach for customer comfort, compliance readiness and long-term efficiency.

Heat network regulation is becoming more rigorous, customers deserve optimal outcomes, and HNES funding is available to help address inefficient systems. For operators of inefficient heat networks, the opportunity to address improvement is now – we look forward to lending our support.

Discover more about **Baxi's integrated solutions for heat networks**.

HEAT NETWORK REGULATION IS HERE – ARE YOU READY TO HAND OVER THE REINS?



With this year seeing the start of the new regulatory regime for heat networks, Ieman Barmaki, director of heat networks at Leep Utilities, investigates ways to reduce the implications and compliance burden that's now facing many property developers.

The new regulatory rules for heat networks have arrived, and with them a permanent shift in what it means to own and operate a communal heat network in the UK.

The framework, being administered by Ofgem, introduces a set of obligations that will be familiar to anyone who has worked in regulated utilities, but are genuinely new territory for the heat sector. It includes elements such as requiring operators to demonstrate fair and transparent pricing, maintain a priority services register for vulnerable customers, hold disaster recovery and business continuity plans, and pass a financial resilience test to satisfy the regulator that the network is in safe hands.

New operators will need to meet all the criteria before they can begin to operate. But owners of existing heat networks are currently operating under deemed authorisation by Ofgem, with the deadline to submit the full supporting documentation and formal authorisation requirements being January 2027.

That timetable is not generous. Across the market right now, operators of every type are playing catch-up, pulling together processes, documentation and billing methodologies to demonstrate compliance.

A POTENTIAL HEADACHE FOR DEVELOPERS

Historically, many developers have retained a degree of control over the heat networks serving their builds, creating a mechanism to protect residents from poor service and ensure continuity of supply.



Regulation changes the calculation entirely. The same protections that developers tried to achieve through contractual control are now being built into the statutory framework. Ofgem can intervene if prices aren't transparent and price rises aren't controlled, or if a regulated operator fails. A supplier of last resort mechanism – comparable to what exists in the electricity and gas markets – is also in development to ensure residents are not left without heat if an operator exits the market.

As a result, if a developer retains ownership or operational responsibility of a heat network, they have to become an authorised entity which meets all the regulatory obligations. It's a massive endeavour and includes everything from creating and managing entire documentation and compliance frameworks to billing systems updates – and being able to demonstrate the financial resilience to satisfy a regulator.

For an organisation whose core expertise is in designing, building and selling properties, that is a significant and unfamiliar burden.

THE INCREASING TREND FOR NETWORK ADOPTION

This regulatory burden is one of the biggest reasons why developers are increasingly choosing to divest their heat networks to a company which takes on permanent ownership and operation of the heat network, rather than managing it on a developer's behalf.

The distinction matters, as ownership is one of the key tests Ofgem uses to assess where regulatory responsibility sits. A permanent transfer of the asset – what some call an adoption, others an asset transfer – transfers the regulatory burden to the new owner – and the developer achieves a clean break.

But many of the same concerns remain for developers – how do they pass on ownership of a critical part of their project without losing control of their brand or reputation?

At Leep, we are working with developers to take on the regulatory responsibility for heat networks. It's not a new model for us: as a modern multi-utility we have operated as a regulated utility for close to a decade, and already do similar for water and electricity networks.



The frameworks that heat regulation is now introducing – guaranteed service standards, priority services registers, disaster recovery planning, financial resilience testing – are processes we already operate in our water business. We are not building compliance infrastructure from scratch; we are extending what we already do.

Leep already has deemed authorisation from Ofgem, and by January 2027, we will be fully authorised by Ofgem for heat. The statutory protections that entitles residents to – fair pricing obligations, guaranteed service standards, complaints and redress processes – are things we are already putting in place across our networks.

FLEXIBILITY IS KEY

So far, so simple. But the reality is that managing heat networks can be complex and often unique to each network. Labels such as concessions, adoptions, hybrid arrangements, managed service agreements – they can be confusing for developers looking to move forward.

What's actually important is that developers are able to get the arrangement they need for their network. And this will depend on the infrastructure, how developed it is, and the developer's timeline.

What we do know is that the old model of a 25-year concession agreement, in which the rights to operate a network sit with a concessionaire but ultimate ownership remains elsewhere, creates a set of problems in a regulated world. At the end of that period, the network reverts to the developer, which then faces a decision: manage it under a regulatory framework they have not had to engage with directly, or transfer it to a regulated entity at that point.



Neither outcome delivers as much value as an earlier full adoption does.

REDUCING THE BURDEN FOR DEVELOPERS

For developers who retain operational responsibility for their heat networks, the next few years are likely to bring significant business burden – a layer of compliance imposed on a business that was never designed to absorb it.

Most immediately, the January 2027 deadline for becoming authorised is approaching, with all of its regulatory requirements. For developers, it doesn't have to mean difficult conversations and a heavy workload, just a conversation with one of the industry operators who are ready and experienced in working within a regulatory framework.

For more information about Leep and heat networks, visit **www.leeputilities.co.uk/heat-networks/**

HOW HYBRID SYSTEMS COMBINE GAS & ELECTRICITY FOR MAXIMUM EFFICIENCY

Rinnai's Peter Seddon discusses hybrid systems and the separate technologies that combine to create an efficient configuration of components that produce heating and hot water. Continue reading to find out how a hybrid system operates and how gas and electricity are used to optimise system longevity, efficiency and performance.



A possible solution to UK decarbonisation is hybrid systems that accept two forms of fuel to ensure cost-effective and smooth operational performance that produces heat and hot water. What is a hybrid system and how do they operate to the benefit of the end-user?

Hybrid technology accepts two separate forms of power, one would be either natural gas or LPG, alongside solar thermal or a heat pump. Hybrid systems are designed to optimise factors such as outside temperature, current energy prices, property heating and DHW demand. Once data is collected Smart software will select the most economic and energy efficient fuel option to guarantee customer satisfaction.

For smart DHW hot water systems such as continuous flow water heaters used with heat pumps, the renewable heat generator provides the base load as the water heaters "top up" the temperature. This approach is inherent within the system and ensures optimal performance.

Using two separate energies offers a range of benefits for UK retrofit projects in a domestic or commercial application. The first advantage is from a financial viewpoint: as electric costs are higher than natural gas, utilising a system that accepts both renewable electricity and traditional fuel sources mean that costs will be lower and more manageable when compared to an exclusively electrical system. From a capital expenditure perspective, the cost of a hybrid is often lower than a full electric system creating lower whole of life costs.

In terms of operational performance, a hybrid heating and hot water system combines two technologies that ensures energy efficiency whilst supporting operational consistency. A hybrid system will benefit from the incorporated heat pump or solar thermal technology during favourable weather conditions whilst using the auxiliary appliance during periods of colder conditions. This will optimise the strengths of each technological approach in separate weather condition circumstances; the addition of a combustion-based water heating technology will boost the renewable base load to ensure DHW performance.

A further benefit for the end-user is that both lifecycles of each technology are lengthened. As each technology does not have to apply full effort to satisfy demand, component and overall system longevity will be increased due to a lessening of required workload.

Hybrid systems offer a practical route for environmental objectives to be accomplished. As not all customers can fully financially commit to decarbonising practises, an alternative mix of technologies that incorporates both renewable and traditional technologies and fuels is offered to bridge this gap. This practical approach introduces customers to alternative and clean energies whilst maintaining control over energy costs by still relying on conventional and more cost-effective methods of energy usage. Hybrid systems are particularly attractive for hotels, leisure facilities, healthcare environments, education buildings and multi-residential developments where high domestic hot water demand coincides with ambitious decarbonisation targets.

The Hybrid approach can also be instrumental within buildings that do not have the space, infrastructure or plant room facilities for full electrification and the increase in store hot water volumes.

A hybrid system is comprised of several features, components, technologies and fuels. The main elements of a hybrid heating and hot water system are listed below.

- **Heat Pump:** The renewable backbone of the system. Most hybrid systems utilise air source heat pumps (ASHPs). Ground source heat pumps (GSHPs) are also viable for specific applications, particularly in commercial settings.
- **Condensing Gas Boiler / Water Heater:** A high efficiency water heater serves as the auxiliary heat source. Modern condensing water heaters are designed to extract as much heat as possible from combustion gases, increasing energy efficiency.
- **Solar Panels:** When solar thermal collectors are included, they can contribute heat to the system directly or to a buffer tank. This heat can then be drawn upon before the system calls for either the heat pump, gas boiler and water heaters making it more energy efficient.
- **Control Unit / Smart Thermostat:** The 'brain' of the hybrid system, responsible for deciding which heat source to use based on real time conditions. Many units are integrated with weather compensation and predictive algorithms.
- **Buffer Tank / Hot Water Cylinder:** Optional but recommended for systems that provide domestic hot water (DHW). The buffer tank helps to smooth out demand fluctuations and improve efficiency. Other cylinders can include buffers for minimum water content and for additional hot water demand.
- **Sensors and Meters:** These measure temperature, flow rates, and energy consumption, feeding data back to the control system to enable automated switching.

Hybrid technology is a growing solution for commercial or domestic property owners who seek to limit carbon output and who cannot afford to financially commit to a true carbon neutral heating and hot water system. The profile of hybrid technology is becoming far more discernible both in the UK and Europe.

The HHGB (Hybrid Heating Great Britain) is a consortium of electric and gas suppliers, heat pump manufacturers and software solution providers. This coalition has recently released a report entitled: "Hybrid Heating Systems: Accelerating Decarbonisation in Britain's Homes." This report references analysis carried out by the DESNZ (Department of Energy Security and NetZero) that states hybrid technology can result in cost savings of up to 30% when compared to an air source heat pump.

The report also details a number of trials that have been carried out inside the UK and the Netherlands. As the Dutch housing stock is comparable to the UKs in terms of materials used in construction and the dimensions that are incorporated into the planning and building phases, any study that states a financial or operational benefit from home heating and hot water production in one country, can be also applied to the other.

The Netherlands was the location for a recent study conducted by the Association for Sustainable Heat, a leading Dutch trade association that represents manufacturing and industrial companies that specialise in producing sustainable and efficient property heating.

This particular study explored the effect of hybrid heating on 200 homes in the Netherlands. It was found that on average energy costs had annually decreased by £653, insinuating that hybrid heating and hot water provision could be the better option for customers in a financial context.

An additional trial on a smaller scale has also been conducted in South Belfast during 2024 by Pheonix Energy, the largest and most prominent gas distribution company in Northern Ireland. The trial aimed to explore the potential of hybrid technology for Northern Irish customers.

The key findings of the trial found that heating costs were 16% less than a traditional gas boiler and 20% lower than a standalone heat pump. Further reductions include a 51% removal of emissions when compared to gas boilers. Operational observations found that 84% of the heating load



was covered by the heat pump and the remaining 16% was provided by the gas boiler. As the traditional element of the hybrid system (the gas fired boiler) managed peak load, the heat pump itself operated at 354% average efficiency.

A final noteworthy trial regarding hybrid systems was held in seven domestic properties in Wales, South-West England and London between 2020 and 2022. The trial was conducted by WWU (Wales and West Utilities) who manage the gas network across the South-West of England and Wales, Passiv – a UK smart energy technology company, Delta-EE, a Scottish energy consultancy and research firm, alongside the Imperial College of London.

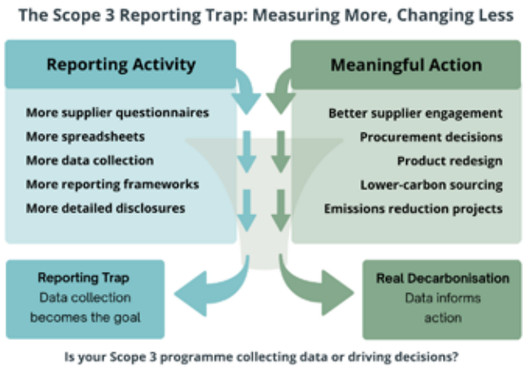
The key findings of this trial concluded that compact hybrid heating systems could potentially deliver £100 in annual energy system cost savings per installation. Up to 14 million homes could be suited to hybrid heating. Smart controlled hybrid technology can provide a flexible approach to fuel utilisation once external factors such as grid stress or outside temperature are taken into account. The trial also found that 79% of participants were attracted to hybrid heating, whilst only 16% were aware of technologies beyond gas boilers.

Hybrid systems offer an immediately deployable pathway towards lower-carbon heating and hot water provision. By intelligently combining renewable technologies with high-efficiency gas appliances, building owners can reduce emissions, manage operational costs and maintain reliable performance without the infrastructure challenges often associated with full electrification. For many UK domestic and commercial properties, hybrid technology provides a practical bridge between today's energy realities and tomorrow's net zero ambitions.

For more information on the RINNAI product range visit **www.rinnaiuk.com**

THE SCOPE 3 REPORTING TRAP: MEASURING MORE, CHANGING LESS

Graham Paul, Service Delivery Director, TEAM Energy



Is your Scope 3 programme collecting data or driving decisions?

SCOPE 3 EMISSIONS HAVE BECOME CENTRAL TO THE CORPORATE CARBON CONVERSATION.

Driven by investor expectations, customer requirements, net zero commitments and growing reporting obligations, organisations are investing significant time and resource into understanding emissions across their value chains. Supply chains are being mapped, procurement data analysed and suppliers engaged at a scale that would have been uncommon just a few years ago.

This is welcome progress. Organisations cannot manage emissions they cannot see.

However, as Scope 3 reporting becomes more established, an important question is emerging: **are businesses becoming better at reporting emissions than reducing them?**

Too often, organisations devote substantial effort to collecting data that is disconnected from decision-making. The reporting process becomes the priority, while the commercial and operational changes needed to reduce emissions struggle to keep pace.

The risk is that businesses end up measuring more while changing less.

MORE DATA DOES NOT ALWAYS MEAN BETTER INSIGHT.

For many organisations, estimating Scope 3 emissions is an essential starting point.

Spend-based calculations and industry-average emissions factors can help build an initial inventory, identify hotspots and establish a baseline where supplier-specific information is unavailable.

The challenge comes when these broad estimates become a permanent solution.

A carbon inventory may appear highly detailed while still relying on assumptions that reveal little about the performance of individual suppliers, products or materials. Two suppliers delivering the same product could have very different emissions profiles but appear almost identical in a spend-based assessment.

This becomes particularly problematic when organisations try to measure progress. Changes in emissions may reflect purchasing patterns, volumes or prices rather than genuine reductions.

As a result, businesses can produce increasingly sophisticated reports without gaining a much clearer understanding of where meaningful decarbonisation opportunities exist.

The objective should not be more data for its own sake. It should be better information where it matters most.

As reporting programmes mature, organisations should focus on improving data quality in significant emissions categories, especially where better information can support operational, procurement or investment decisions.

REPORTING FATIGUE IS BECOMING A STRATEGIC RISK.

The growth of Scope 3 disclosure is creating a substantial administrative burden.

Sustainability teams often spend months gathering information from suppliers, travel providers, logistics partners, procurement functions and finance systems. At the same time, many suppliers are responding to multiple customer requests for similar emissions information, often in different formats.

This can create reporting fatigue across the value chain.

Internal teams become focused on managing spreadsheets, questionnaires and reporting frameworks, while suppliers may begin to view carbon data requests as another compliance exercise. The result can be lower-quality responses, inconsistent data and reduced engagement.

More importantly, excessive reporting demands can divert attention away from activities that actually reduce emissions.

Organisations should therefore be selective about the information they request and clear about how it will be used. If a data point does not improve reporting accuracy, support compliance requirements or inform a business decision, its value should be questioned.

Transparency remains essential, but reporting should always serve a purpose beyond reporting itself.

SUPPLIER QUESTIONNAIRES ARE NOT SUPPLIER ENGAGEMENT.

One of the most common misconceptions in Scope 3 reporting is that supplier engagement simply means collecting supplier data.

In reality, meaningful engagement goes much further.

Suppliers vary considerably in their carbon maturity. Some have robust emissions data and reduction targets. Others are only beginning to measure their footprint. Asking every supplier for the same information is unlikely to deliver the most useful results.

Instead, organisations should focus attention on suppliers associated with their most significant emissions and where collaboration is most likely to drive change.

That may involve helping suppliers improve measurement capabilities, discussing lower-carbon alternatives or identifying opportunities to reduce emissions across the supply chain.

Procurement teams also have a critical role to play. If carbon performance is not considered during supplier selection, contract renewal or purchasing decisions, reporting remains disconnected from the commercial choices that influence emissions.

The goal should not be to collect more supplier data. It should be to create stronger supplier relationships that support emissions reduction.

The goal should not be to collect more supplier data. It should be to create stronger supplier relationships that support emissions reduction. As we explore in TEAM's guide to **five common Scope 3 reporting mistakes and how to avoid them**, meaningful supplier engagement is often the difference between producing emissions data and delivering emissions reductions.

FOCUS PRECISION WHERE IT CAN INFLUENCE DECISIONS.

Not every Scope 3 category deserves the same level of attention.

A manufacturer, property owner, retailer and professional services business will all have different emissions profiles and different opportunities to influence change within their value chains.

Attempting to achieve the same level of precision across every category can spread resources too thinly and delay action.

Organisations should focus their greatest effort on significant emissions sources and on data that informs decision-making. For less material categories, high-level estimates may be entirely appropriate.

This approach allows organisations to improve data quality strategically rather than pursuing perfect accuracy everywhere at once.

The aim is not to create the largest inventory possible. It is to create an inventory that supports better decisions.

REPORTING MUST LEAD TO ACTION.

Ultimately, the value of Scope 3 reporting lies in what organisations do with the information they collect.

A completed inventory may satisfy reporting requirements, but it does not automatically reduce emissions. Real progress comes when carbon data influences procurement strategies, supplier relationships, product design, investment decisions and operational priorities.

For every major emissions source, organisations should be asking practical questions:

- What is driving these emissions?
- How reliable is the underlying data?
- Which teams can influence the outcome?
- What reduction opportunities are available?
- What additional information would support better decisions?

If reporting cannot help answering these questions, collecting more data may offer limited value.

The organisations likely to make the greatest progress will not necessarily be those producing the most detailed disclosures. They will be those that use carbon data to inform decisions, prioritise meaningful supplier engagement and focus effort where it can have the greatest impact.

Because the purpose of Scope 3 reporting is not simply to describe the value chain. It is to change it. **www.teamenergy.com**



THE GREEN OPPORTUNITY IN DATA CENTERS: WHY YOUR DATA CENTER'S GREEN STRATEGY MIGHT BE MISSING HALF THE EQUATION

Gary Domichel, VP of Global & Channel Sales North America, Subzero Engineering



Data centers now consume nearly 2% of global energy. As the mainstay of the digital economy, that level of consumption is a problem but also an opportunity at the same time. If you push efficiency forward here, even modestly, the outsized environmental payoff scales accordingly.

So why isn't it happening faster?

PROMISE V PERFORMANCE

Many corporations pledge zero-carbon goals, a target year, and a whole load of optimistic language, only to produce rather underwhelming results. This disparity is rarely about technology; there's plenty of technology available to enhance efficiencies. So, if technology isn't the issue, what is it?

It's a lack of leadership commitment. True sustainability necessitates visible and ongoing commitment from the C-suite through budget cycles and shifting priorities. And that's where it often breaks down. Green initiatives get deprioritized the moment something else becomes more pressing, or funding dries up before gains materialize.

DESIGN GETS YOU STARTED, NOT FINISHED

For those leadership teams that do commit, the natural starting point is design. When building a new facility or retrofitting an old one, Computational Fluid Dynamics (CFD) modeling is a powerful tool. It simulates how air will move, where hot spots will form, and how cooling and containment strategies will perform before a single rack is installed.

But CFD has a blind spot: it's a prediction, not a guarantee.

Most data centers are designed once and then run for a decade or more. The cooling strategy, airflow pathways, and containment setups are typically locked in during the design phase. They're modeled carefully, validated, and then largely left to run on the assumption of the model data. But the moment a facility goes live, real life gets in the way. Not all variables are known in a data center before it becomes operational; workloads shift, and racks get added, removed, or reconfigured. Hardware begins to age and begins to run hotter than it did when it was new. Containment seals degrade, and hot aisle and cold aisle separation – perfect on a CFD model – slowly erodes through tiny, unremarkable changes such as a blanking panel left off here and a cable tray rerouted there.

None of these changes show up as an alarm. They develop as gradual inefficiencies, such as a CRAC unit working harder than it should, or a slightly elevated inlet temperature on one rack, or a few extra percentage points on the cooling bill. Individually, they're invisible.

But the simulation that justified your design decisions on day one has become far less accurate on day 500, even if nothing has visibly changed.

THE CASE FOR CONTINUOUS MONITORING

Tools like CFD modeling are essential in the planning phase, but the moment real-world variables move – and they always do – the model stops describing reality. Without a way to check actual performance against the original plan, operators are left managing a facility based on an assumption that's been silently going stale.

This is where continuous monitoring earns its place. Facilities need real-time visibility into what's happening now: actual airflow, actual cooling performance, and actual containment integrity. This needs to be tracked day to day rather than presumed from a simulation run months or years earlier.

WHAT REAL-TIME VISIBILITY ACTUALLY PROVIDES

A monitoring system built for this purpose should give operators the following:

- Day-to-day performance data, not periodic snapshots, so that any drift is caught early. It's already too late when discovered during an annual audit.
- Granular insight into airflow and containment, down to the rack or row level, where small leaks and inefficiencies originate.
- A feedback loop, not just a dashboard. Visibility is only useful if it leads to adjustment.

The value isn't just in detecting problems. It's in the ability to make ongoing adjustments to keep a facility tuned to its current conditions rather than its original blueprint.

Monitoring isn't valuable as a passive record. It needs to enable operators to act before those small inefficiencies compound into real energy and cost penalties.

TWO TOOLS, ONE STRATEGY

The takeaway here isn't that CFD is outdated or that monitoring makes design irrelevant. It's the opposite: no data center can claim to be truly green on the strength of either approach alone. CFD gives you a strong starting position, while continuous monitoring keeps that position reliable and trustworthy.

No data center can be genuinely green without the leadership team pairing strong upfront design with robust, ongoing monitoring. CFD and monitoring aren't competing approaches — they're complementary. They help to close the imbalance between what companies promise and what they deliver. The facilities that perform best over time aren't necessarily the ones with the most sophisticated design. They're the ones that treat optimization as continuous rather than finished. Real-time visibility turns green thinking from a one-time engineering decision into an operational discipline. It becomes one that adapts as the facility itself changes.

In a sector where even small efficiency gains carry outsized environmental and financial weight, that kind of ongoing responsiveness isn't a nice-to-have. It's the difference between a data center that was designed to be efficient and one that stays that way.

And closing that gap is, ultimately, a leadership decision as much as a technical one. **www.subzeroeng.com**

THE ENERGY COST CRISIS HAS A NEW DEADLINE: WINTER 2027/28

David Baumber, Chief Operating Officer, npower Business Solutions (nBS)



When it comes to energy costs, UK businesses are already paying some of Europe's highest electricity prices. Analysis from our 2026 **Business Energy Tracker** shows that large UK businesses pay 130% more for electricity than the median across 14 European Union (EU) countries.

This could explain why energy has remained the top risk for businesses for the fifth year running, with 78% of respondents expecting their costs to rise over the next 12 months.

However, the cost peak is yet to come. Our modelling indicates that winter 2027/28 will contain the highest peak-period electricity costs between now and 2031, potentially reaching around £523 per megawatt hour (MWh) during the Capacity Market (CM) charging period in January 2028. Rising non-commodity charges, particularly CM costs, are driving this peak.

That leaves businesses just over a year to prepare. For senior leaders, this should become a deadline for energy decisions, while they still have time to influence and minimise their exposure.

WHY WHOLESALE RELIEF IS NOT ENOUGH

Now in its fifth year, the Business Energy Tracker has shown how organisations have adapted to rising energy costs. However, the source of the pressure has changed.

Wholesale market volatility drove rising costs in 2022. Today, non-commodity charges increasingly influence electricity invoices. These network, policy and system costs fund everything from grid maintenance to the infrastructure needed for clean power. A key reason for the UK-EU disparity is how countries fund policy costs, with UK charges sitting on energy invoices and continuing to climb, while EU counterparts have found different models to fund their energy transitions.

Winter 2027/28 will bring that pressure into sharper focus, with non-commodity charges forecast to drive a concentrated cost shock during peak operating hours. Businesses have a limited window to prepare, particularly where changes require investment or senior approval. Reviewing their energy strategy now gives them time to assess the options and put measures in place before that winter arrives.

PREPARING FOR THE PEAK

How can energy managers prepare for the 2027/28 cost peak?

Energy managers should begin by reviewing their purchasing strategy, as traditional fixed-price contracts may no longer offer the certainty they once did. Extreme market volatility means businesses are often paying a premium for 'certainty', when a more flexible purchasing strategy may be more appropriate.

Further to this, investing in energy efficiency and online data platforms helps pinpoint how and where power is used, so businesses can direct capital towards the greatest returns. Energy managers should also conduct regular audits to ensure their agreed network capacity is correctly forecast and, where possible, reduced. This can lower Distribution Use of System (DUoS) and Transmission Network Use of System (TNUoS) charges.

Prioritising on-site generation such as solar and wind remains one of the most effective ways to secure long-term price stability. Power generated and used behind the meter is exempt from many industry levies, including Contracts for Difference (CfD) and CM charges.

Flexibility is also becoming a key component of modern energy strategies. Businesses should shift power-intensive processes away from expensive peak windows, particularly CM peak hours between 4pm and 7pm on winter weekdays, to avoid heavy surcharges. Time-of-use tariffs can help manage costs, while selling unused energy bought in advance back to the wholesale market during day-ahead price spikes can generate revenue.

Energy managers should also check whether their business qualifies for government support. Applications have opened for the British Industrial Competitiveness Scheme (BICS), which could cut electricity costs by up to 25% for eligible organisations, through exemptions from Renewables Obligation (RO) and Feed-in Tariff (FIT) costs from April 2027, with CM exemptions following in October 2027. Though, eligibility is currently limited to around 10,000 manufacturing businesses.

A FAIRER ROUTE TO CLEAN POWER

Senior leaders now need to give energy managers the backing to prepare for winter 2027/28. By the time higher charges reach an invoice, the opportunity to change purchasing arrangements or have new generation in place may have already passed.

These measures can help businesses protect themselves, but government action is also essential. Businesses cannot directly control how national policy costs are funded, and the UK's existing price disadvantage makes further increases especially difficult to absorb. The costs of the clean power transition need to be spread more fairly and over a longer period, giving businesses room to invest in the measures that will help them manage future costs and grow.

BEYOND HORMUZ: THE WIDER RISKS SHAPING WINTER ENERGY PRICES

John Dawson, Energy Trader & Market Intelligence Manager, **eic.co.uk**



Restricted LNG shipping through the Strait of Hormuz is driving the current rise in gas prices. With Gulf supply constrained, Europe and Asia are competing more aggressively for marginal cargoes just as winter approaches.

Weather-dependent generation, lower storage and disruption across the Arabian Peninsula add further pressure, particularly if cold weather raises demand before Hormuz flows recover.

EUROPE IS COMPETING FOR LNG

Europe's response to the loss of Russian pipeline gas has made LNG increasingly important. It now accounts for approximately 47% of EU gas supply, while imports reached a record 146 billion cubic metres during 2025.

Diversification has tied European prices more closely to a global market in which cargoes move towards the strongest return.

Competition intensified during summer 2026. Restricted Gulf flows reduced global supply, while available cargoes shifted towards parts of Asia. European LNG imports fell and storage injections slowed, leaving stocks just under 72% full at the end of the third quarter.

Europe can attract additional LNG, but price determines its ability to do so. If Asian demand remains strong and Hormuz constrained, European buyers may have to pay a premium to redirect cargoes. The effect is already visible further along the curve: between 1 September and 22 October, Summer 2027 gas rose by approximately 46%, while the equivalent power contract increased by around 37%.

THE RISK EXTENDS BEYOND HORMUZ

Hormuz remains central to global energy security, although additional disruption extends across the region.

Hormuz serves Gulf exports, while the Bab el-Mandeb provides access to the Red Sea and Suez Canal. The region's ports, terminals, pipelines and alternative routes belong to the same system.

Houthi activity has expanded risks to Red Sea shipping, Saudi traffic and infrastructure bypassing the Persian Gulf. Drone and missile attacks create uncertainty around ports, terminals and logistics, weakening alternative routes.

US military and diplomatic involvement adds another variable. Prices respond to supply changes and escalation risks. A threatened facility, restricted route or change in military posture can add a risk premium before shortages materialise.

THE TRANSITION HAS CHANGED RISK, NOT REMOVED IT

Renewable generation remains essential to reducing emissions and Britain's exposure to imported fossil fuels. Wind and solar supplied 38.2% of UK electricity during 2025/26, up from 33.3% in the previous period.

Greater capacity cannot guarantee consistent output. Strong solar can produce daytime surpluses requiring storage or demand flexibility, while prolonged low wind may require gas-fired stations to replace missing generation.

These risks were visible during 2025/26. A sustained low-wind period in October increased reliance on gas-fired power and contributed to an electricity-price spike. A January cold spell then raised demand while renewable generation weakened.

Britain is producing more renewable electricity, while gas provides flexibility when weather-driven generation falls. Until storage and other dispatchable technologies expand, gas will continue influencing UK power costs.

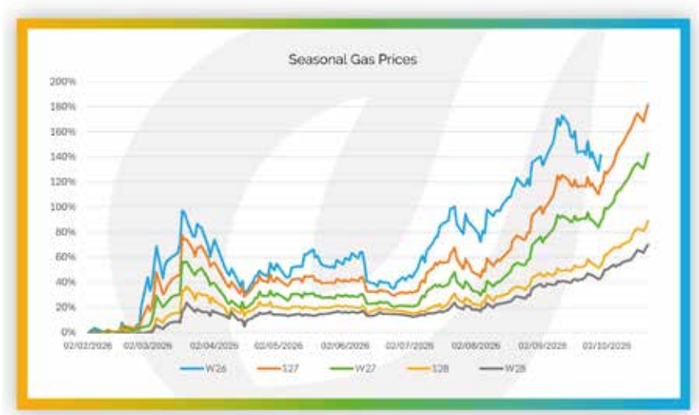
WHEN A COLD SNAP MEETS A SUPPLY SHORTFALL

January 2026 showed how quickly winter weather can move the market. Colder forecasts raised heating demand, while low wind increased reliance on gas-fired power. During the coldest period, gas generated more than half of Britain's electricity for four consecutive days.

The pressure also reached seasonal contracts. EIC's market data shows Winter 2026 gas rising by approximately 12% during January, while Winter 2026 power increased by around 5%.

That episode remained manageable because LNG reached UK terminals and Norwegian flows stayed steady. Winter 2026/27 could prove harder if similar weather meets restricted Hormuz shipping and lower storage. A cold, still period would raise heating and power demand simultaneously while replacement supply became harder and more expensive to secure.

The question is whether the market remains resilient if a cold spell coincides with constrained LNG, low storage and weak renewable output.



THREE WINTER SCENARIOS FOR ENERGY BUYERS

1. HORMUZ SHIPPING RECOVERS, WITH MILD AND WINDY WEATHER

A sustained return of Gulf LNG shipping, combined with milder temperatures and strong wind generation, would reduce gas demand, support storage and ease some of the risk premium in forward prices.

2. HORMUZ SHIPPING RECOVERS, BUT COLD WEATHER RAISES DEMAND

Restored LNG flows through Hormuz and stable pipeline imports could help contain the impact of a cold spell. Demand and storage withdrawals would rise, leaving prices sensitive to cargo availability, weather forecasts and renewable output.

3. HORMUZ REMAINS CONSTRAINED AS COLD, STILL WEATHER ARRIVES

This carries the greatest price risk. Heating demand rises, low wind increases gas-fired generation and storage falls faster. Restricted Gulf supply forces Europe to compete more aggressively with Asia for flexible LNG cargoes.

PROCUREMENT DECISIONS NEED A WIDER FIELD OF VIEW

Energy buyers should monitor Hormuz shipping first, alongside storage, LNG arrivals, Qatari output, Asian demand, Norwegian flows and UK wind generation.

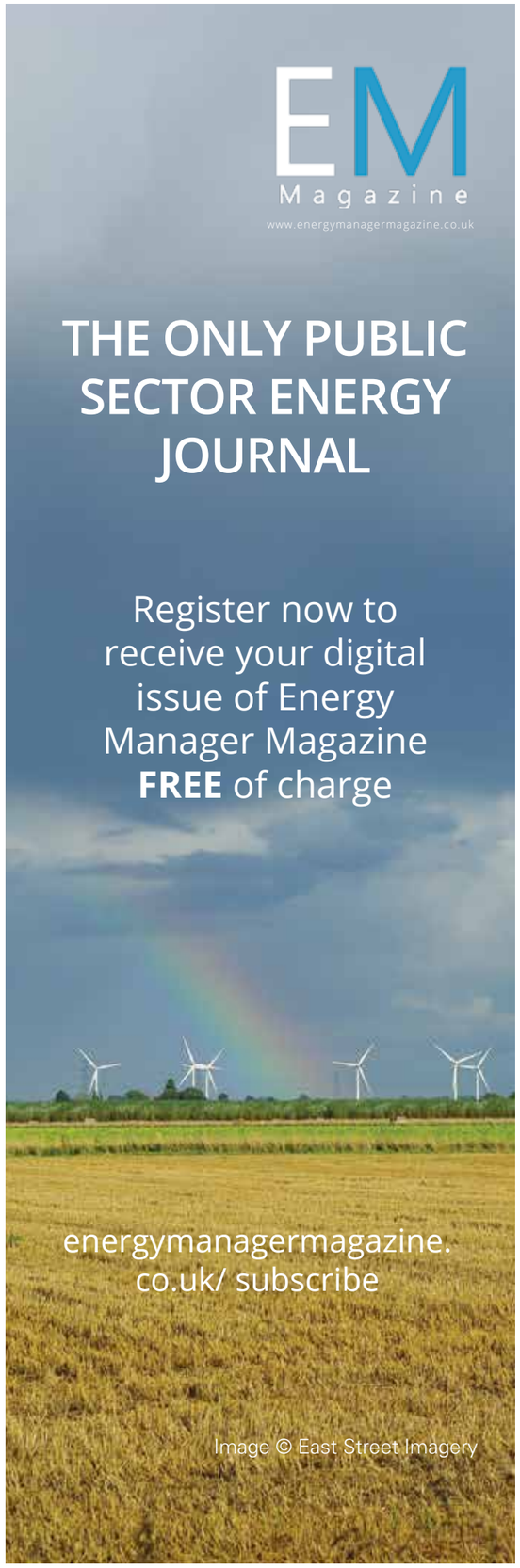
For flexible-contract buyers, position reporting remains vital, showing secured energy, remaining exposure and the effect of prices on budgets and risk parameters. Movements also extend beyond the immediate winter, with rising Summer 2028 and Winter 2028 prices suggesting the market is reassessing supply risk across several delivery periods.

Phased purchasing can reduce dependence on one market moment, but decisions should remain tied to risk appetite and operational requirements. Europe has diversified its supply, but diversification has brought greater exposure to LNG competition, maritime security and weather-driven price formation.

Winter risk begins at Hormuz but does not end there. The severity of the next price movement will depend on whether constrained LNG supply is compounded by cold weather, weak renewable output and disruption across alternative routes.

EXPLORE THE WIDER RISK PICTURE

For deeper analysis of how interconnected geopolitical, supply and weather risks could affect energy costs and security, download EIC Partnership's **Energy Market Risk Outlook** at Energy Market Risk Outlook 2026-27 Leaflet Form - EIC Partnership.



MANAGING THE GROWING SUPPLIER COMPLEXITY BEHIND THE ENERGY TRANSITION

Oliver Norman, Chief Revenue Officer, Nomia



As energy companies invest in renewable generation and modernise infrastructure, many find that their procurement requirements are changing. Technologies for wind, solar, and battery storage can bring new providers of equipment, engineering expertise, maintenance and other services into the mix, alongside suppliers supporting existing generation assets.

Expanding the supplier base to support innovation and transition can also make managing procurement more demanding, with purchasing spanning multiple projects, sites, and markets – often with different operational requirements and local buying arrangements.

Global disruption can add further pressure. Energy companies are both suppliers to other businesses and operators with extensive supply chains of their own. Rising diesel prices can increase transport and site-servicing costs, while disrupted deliveries may force teams to quickly find alternative suppliers.

Our customers tell us that striking the right balance between responsiveness and consistent oversight is often one of procurement's biggest challenges.

UNDERSTANDING THE LONG TAIL

Major infrastructure contracts are generally procurement's primary focus. But beneath this 'strategic spend' sits a much broader range of lower-value purchases, from maintenance components and specialist contractors to logistics, IT, and site services. For example, this might include replacement parts for a wind turbine or electrical testing services at a solar farm.

This activity is commonly known as 'tail spend' and is often estimated to account for around 20% of third-party expenditure but as much as 80% of purchasing transactions. While proportions vary between organisations, managing this volume of smaller purchases can place considerable demands on procurement teams.

For energy businesses, these purchases may be spread across remote assets, project teams, and local suppliers. Each requirement can involve sourcing, onboarding, contractual checks, and payment administration, drawing on procurement, finance, legal, and compliance resources.

In many cases, teams cannot give thousands of smaller purchases the same individual attention as major strategic contracts. Over time, this can lead to duplicate suppliers, inconsistent pricing, and limited visibility into purchasing activity.

CONNECTING SUPPLIER VISIBILITY WITH SUSTAINABILITY

Lower purchase value does not necessarily mean lower risk. A local contractor may be essential to maintaining an asset, while a modest purchase can still expose a business to financial or compliance risks relating to safety, responsible sourcing, or environmental standards.

As supplier networks expand, maintaining consistent information becomes harder. Records may be scattered across procurement platforms, spreadsheets, and individual sites, making it difficult to determine which checks have been completed or where documentation needs updating.

For organisations pursuing environmental, social, and governance objectives, these gaps can hinder progress. Scope 3 emissions reporting, for example, requires information on goods and services purchased across the supply chain.

Creating a single system of record that connects supplier details, contracts, compliance documentation, and transactions can provide a clearer foundation. It can help teams identify missing information, compare purchasing patterns, and support smaller suppliers in meeting relevant requirements.

COMBINING AI WITH HUMAN INTELLIGENCE

Keeping that information accurate and up to date across a growing supplier base can, however, strain even well-resourced procurement teams. AI-enabled technology can help manage this workload by automating routine onboarding and documentation checks, while also supporting activities such as categorising requirements, identifying potential suppliers, and comparing quotations.

Our experience suggests that AI-powered technology is most effective when combined with human intelligence – specifically, experienced procurement professionals who understand the commercial and operational context.

For offshore maintenance, for instance, a lower quotation may be less attractive once safety credentials, specialist expertise, and the ability to mobilise within a tight maintenance window are taken into account.

Procurement expertise helps assess those trade-offs, challenge recommendations, and determine where additional scrutiny is warranted. This combination can support faster decisions while preserving the judgement that complex energy operations require.

EXTENDING PROCUREMENT CAPACITY

Putting that approach into practice requires the right technology and expertise. For some organisations, an outsourced procurement partner can provide managed services across the tail, extending the capabilities of internal teams already focused on strategic sourcing.

A managed partner can coordinate supplier discovery, onboarding, contracting, and ongoing administration via a structured entry point. Combining AI-enabled tools with procurement specialists can also broaden access to qualified local and specialist suppliers, including alternatives when established arrangements are disrupted.

Internal teams retain responsibility for strategy and policy, while the partner supports execution and ensures consistent records throughout the purchasing lifecycle.

The right approach will depend on each energy company's assets, markets, and existing processes. As the transition broadens procurement requirements, better tail spend management may offer a practical way to strengthen resilience, support sustainability goals, and give operational teams access to the suppliers they need.

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NATURAL GAS: NAVIGATING POLICY & SUSTAINABILITY

Rinnai Director Chris Goggin reviews UK Natural gas policy and discusses long and medium-term sustainability. Natural gas remains integral towards daily UK commercial operations, so what can current policy reveal when thinking of sustainability and how does energy security and market volatility influence these observations?



Natural gas is the most dominant and familiar form of energy to most UK customers, and it has been accessed for decades. As climate change has stimulated multiple global governments to begin the phasing out of all gas-based activities, including the UK, what is the current policy and how sustainable is Natural gas usage.

Although there are many benefits for Natural gas dispersal and usage, there are also several areas in which it can be viewed disparagingly. There are three focal points that have combined to create a turbulent reputation when thinking of natural gas: production, energy security, and market volatility.

Presently employed UK government direction regarding Natural gas production is complex. Although Natural gas is the most widely employed form of energy there are some disadvantages to widespread usage. Production is in an area in which the UK does not hold an advantageous position when analysed.

North Sea oil and gas drilling attracts companies who lease specific parts of the sea that are designated into "blocks." North Sea oil and gas extraction occurs once areas located on the continental shelf have been surveyed via seismic imaging that bounces sound waves onto the seabed that produces an image, from which it can be attained whether oil and gas and reserves are present.

Once oil and gas is detected then extraction begins and when refined and finished an end-product becomes available to purchase on the international market. This is where the UK loses an advantageous position. Oil and gas extracted from UK territory cannot be sold by terms put forward by the UK government. The international market is dictated by supply and demand, geopolitical events, domestic governments, and other organisations such as OPEC.

As the UK is a small player on the international energy market, the UK cannot enforce any price to North Sea oil and gas. The UK exists as a price ***taker*** on the global energy market, not a price ***maker***.

Natural gas sustainability again perpetuates a negative effect upon the domestic energy security. Fossil fuels have been used as a strategic pressure point upon the customer base of opposing political ideologies twice inside a decade. Before the current Iran conflict a barrel of Brent Crude Oil was trading at $73, the cost is now ranging from $91 - $95 a barrel (Trading Economics).

UK energy provision is satisfied with a huge contribution from fossil fuels. The UK is second behind Germany in 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, it can be easily accessed to provide adequate power to UK customers.

In order to escape the spike in costs related to fossil fuels on the global market, the UK and many other countries that are locked into domestic fossil fuel dispersal have to transition towards clean and renewable sources of energy that are not affected by external factors such as conflict or geopolitical posturing.

Market volatility and domestic energy security is a huge reason for Natural gas being considered unsustainable for long-term UK operations. Fossil fuels negate progress in UK energy security and fail to provide a stable marketplace for free–flowing frictionless trade.

In terms of environmental impact fossil fuels are regarded as non-sustainable, as they are responsible for around 80% of all UK emissions. Natural gas can however be used in less harmful ways. One notable example is when Natural gas is used to power hybrid heating and hot water systems.

Hybrid technology accepts two separate forms of fuel or power, one would be either Natural gas or LPG for example, alongside solar thermal or a heat pump. Hybrid systems are designed to optimise factors such as outside temperature, current energy prices, property heating, and DHW demand.

Rather than relying on one fuel source or technology such as renewable electricity and heat pumps, hybrid options instead use two forms of power or heat generators to complete daily functions inside commercial applications.

Using two separate energies offers a range of benefits for UK retrofit projects. The first advantage is from a financial viewpoint: as electrical costs are higher than natural gas, using a system that accepts both renewable electricity and traditional fuel sources means that costs could be lower and more manageable when compared to an exclusively electrical system. From a capital expenditure perspective, the cost of a hybrid is often lower than a full electric system creating lower whole of life costs.

In terms of operational performance, a hybrid heating and hot water system combines two technologies that ensures energy efficiency whilst supporting operational consistency. A hybrid system will benefit from the incorporated heat pump or solar thermal technology during favourable weather conditions whilst using the auxiliary appliance during colder periods. This will optimise the strengths of each technological approach in separate weather condition circumstances; the addition of a combustion-based water heating technology will boost the renewable base load to ensure DHW performance.



A further benefit for the end-user is that both lifecycles of each technology is lengthened. As each technology does not have to apply full effort to satisfy demand, component and overall system longevity will be increased due to a lessening of required workload.

Natural gas although non-sustainable when thinking of domestic energy security, market volatility and production process, can still be called upon to provide less harmful usage especially in buildings with practical, economic and technical constraints.

Rinnai will continue to monitor and share all information that can affect product purchase options for UK customers. Providing a solid base of non-partisan energy news can improve the decision-making process of customers who wish to invest in a renewable, hybrid or natural gas heating and hot water system.

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

COULD YOUR BUILDINGS BE AFFECTED BY THE HEAT NETWORK REGULATION CHANGES IN THE UK?

New rules apply to any organisations that supply heating, cooling or hot water across multiple buildings, including hospitals, universities, industrial sites and commercial estates. Make sure you are aware of what the changes mean for your organisation – failure to comply could lead to enforcement action by Ofgem, including financial penalties and, where customers have been affected, requirements to provide redress.



Photo by Malcolm Choong on Unsplash.

Heat Networks are entering a new era of regulation, and the changes could affect more organisations than you might expect.

From January 2026, heat networks in Great Britain have been subject to a new regulatory framework, with Ofgem taking over responsibility for regulation. The new requirements introduce greater oversight of heat network operators and suppliers, with a stronger focus on consumer protection, governance and ongoing compliance.

COULD YOUR ORGANISATION BE IN SCOPE?

The definition of a heat network is broader than many organisations may realise.

The regulations can apply to district and communal heat networks, as well as certain self-supply and industrial networks. This means organisations operating their own heat network across multiple buildings could potentially be affected – including hospitals, universities, education campuses and industrial sites.

If your organisation owns or operates an energy centre, heat network pipework, substations or associated infrastructure serving multiple properties or buildings, it is worth establishing whether you have regulatory responsibilities.

WHAT HAS CHANGED?

The new Heat Network (Market Framework) (Great Britain) Regulations 2025 are replacing the previous, more limited regulatory approach under the Heat Network (Metering & Billing) Regulations 2014.

Existing operators and suppliers of relevant heat networks must register with Ofgem and provide information about their organisation, network, ownership, financial resilience and consumer protection arrangements. Existing heat networks must be registered by 26 January 2027.

Registration is only part of the picture. Organisations will also need to understand the authorisation conditions that apply to them and maintain appropriate processes to demonstrate ongoing compliance.

AND THERE IS MORE TO COME

Further technical requirements are also being developed through the Heat Network Technical Assurance Scheme (HNTAS), expected from 2027.

This will increase the focus on the technical performance, monitoring and assurance of heat networks.

For organisations operating existing networks, this makes it important to look beyond registration and consider whether current systems, data, metering, processes and governance will be able to support the requirements ahead.

NOT SURE WHETHER YOU'RE AFFECTED?

It's not always obvious whether an organisation operates a heat network that falls within the new regulatory framework.

JRP Solutions have created a quick questionnaire to help you find out. **Check whether you're affected**

WHAT SHOULD YOU DO NOW?

The first step is to establish whether your organisation and heat network are in scope and understand which regulatory responsibilities apply.

From there, a review of existing arrangements can help identify any gaps and give you time to address them before deadlines and further requirements come into effect.

WANT TO UNDERSTAND THE CHANGES IN MORE DETAIL?

JRP Solutions have created a Heat Network Regulation factsheet outlining the key changes, who could be affected and what organisations need to consider as the new regulatory framework develops. **Download the Heat Network Regulation factsheet**.

If you're unsure whether your organisation falls within the scope of the new regulations, JRP can help you understand your position and identify what needs to happen next.

Get in touch: **info@jrpsolutions.com** or book a free consultation on our website: **www.jrpsolutions.com**

ESOS PHASE 4 AND SECR IN PLAIN ENGLISH

ESOS and SECR draw on the same energy data but are separate duties with separate deadlines. Here is what large organisations need to know before 31st December 2026.

Adam Elder, ADM & Partners



Two pieces of UK energy regulation are often confused: the Energy Savings Opportunity Scheme (ESOS) and Streamlined Energy and Carbon Reporting (SECR). They overlap in the data they use, but they are separate duties with separate deadlines, and the next few weeks matter for both.

ESOS: WHO QUALIFIES AND WHEN

ESOS applies to large UK undertakings and their corporate groups. For Phase 4, a large undertaking is one that employs 250 or more people, or has an annual turnover above £44 million and a balance sheet total above £38 million. If one UK company in a group meets the test, the whole UK group is in scope.

The Phase 4 qualification date is 31st December 2026. Organisations that qualify must submit a notification of compliance through the Environment Agency's MESOS system by 5th December 2027. Size is judged over two consecutive accounting periods, so businesses close to the thresholds, or that have recently grown or shrunk, should check the rules in section 1.6 of the government guidance.

WHAT AN ESOS ASSESSMENT INVOLVES

Participants calculate total energy consumption across buildings, industrial processes and transport over a 12-month reference period. That period must include the qualification date and end before the compliance date, and should use verifiable data such as invoices and meter readings where reasonably practicable. They then cover at least 95% of that consumption with energy audits or ISO 50001 certification, calculate energy intensity ratios, and have the assessment signed off by a board-level director.

Phase 4 brings some changes. Display Energy Certificates and Green Deal Assessments can no longer be used as compliance routes, and the ESOS report must now review progress against earlier action plan commitments and explain any that were not met. After notifying, participants must submit an action plan by 5th December 2028, followed by progress updates in 2029 and 2030.

A NEARER DEADLINE: 5TH DECEMBER 2026

Organisations that qualified for Phase 3 and submitted an action plan have a second progress update due by 5th December 2026. It must be signed off by a board-level director and submitted via MESOS, and should estimate the energy savings achieved between 6th December 2025 and 5th December 2026. The Environment Agency warns that late or missing updates may lead to enforcement action.

SECR: WHAT IT IS

SECR has applied since 1st April 2019. It requires quoted companies, large unquoted companies and large LLPs to disclose their energy use, emissions and energy efficiency action in their annual reports. It sits within the annual report rather than being submitted to the Environment Agency.

HOW THE TWO FIT TOGETHER

Government guidance notes that systems used to collect and audit energy data for ESOS can help organisations meet SECR. The reverse does not hold: SECR reporting does not count as ESOS compliance, and ESOS covers a broader scope of energy use. A single register of energy-saving measures, recording what was done, where, when and the estimated saving, helps keep both reports consistent.

PRACTICAL STEPS NOW

- If you have a Phase 3 action plan, confirm your second progress update is in MESOS before 5th December 2026.
- Check whether any UK company in your group will meet the large undertaking test on 31st December 2026.
- Agree a 12-month reference period that includes that date, and gather meter and invoice data across all sites and fleet.
- Book board time for director sign-off well ahead of 5th December 2027.
- Align your SECR narrative with the measures in your ESOS action plan.

None of this is complicated, but it does take time to pull together. Starting early is the simplest way to avoid a rush next autumn.

Adam Elder is a Director at ADM & Partners, a commercial energy and sustainability advisory that works primarily with South Yorkshire businesses and advises organisations across the UK. **adam@admpartners.uk**

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BEYOND SCOP – ESTIMATING REAL WORLD HEAT PUMP PERFORMANCE WITH SPF

Rinnai Applied Head of Design Sean Ehlen evaluates the importance of heat pump system congruity utilising Seasonal Performance Factors (SPF) as the expected performance. Advanced evaluations and verified methodologies are the preferred modes of measurement. A heat pump's capabilities should be based on actual operating conditions and locations to yield accurate pictures of on-site performance.

When investing in a low-carbon heating and hot water system, end users want confidence that the installed solution will deliver the performance, operating costs and carbon savings promised. While metrics such as COP and SCOP are widely used across the heat pump industry, they do not always reflect how a system will perform in real-world operating conditions.

For heat pumps to become effective in mainstream commercial applications a measurement method that harnesses congruity must be utilised, so that expectations on performance can be fully achieved.

There are several ratified methods of measuring the performance of heating and hot water systems more notably heat pumps. Seasonal Coefficient of Performance (SCOP) is regarded as the industry standard of system efficiency measurement. This metric does not however take into consideration several key factors such as location, application, or complete system energy usage.

Therefore, projects can lack congruity, and energy usage can be more than what the initial modelling identified. SCOP is calculated using standardised climate profiles and operating conditions in accordance with recognised European test



methodologies. While this provides a valuable benchmark for comparing heat pumps, these assumptions may differ from the operating conditions experienced at a specific commercial hot water installation.

While for commercial hot water applications in the UK, it is preferred to understand the temperature profile of the installation location, e.g., Glasgow, Scotland - and for a water outlet temperature ranging from 55C-65C, depending on the heat pumps capabilities.

SCOP primarily reflects the seasonal performance of the heat pump unit under standardized test conditions and does not fully represent the performance of the complete installed heating and hot water system. It should be recognised that SCOP remains an important and valuable metric for comparing heat pump products under standardised conditions. However, commercial customers ultimately experience the performance of the complete installed system rather than the heat pump in isolation.

Coefficient of Performance (COP) is also regarded as an alternative method of system efficiency translation. This approach is also limited in its scope; COP fails to include system wide losses and instead provides a snapshot of heat pump efficiency at a defined operating condition but does not capture seasonal performance or wider system energy consumption.

Additional areas that are not fully enveloped into overall heating and hot water system considerations are the ignoring of part-load inefficiencies. Heat pump efficiency varies significantly across the operating range, and a single COP value may not fully reflect performance under varying load conditions experienced throughout the year.

Finally, a high COP score does not necessarily guarantee lower operational costs if the heat pump system is not properly sized, poorly maintained or is installed with a too high temperature lift. This occurs when a low-temperature heat pump is used to heat old and small radiators. COP is also renowned for measuring efficiency at only one temperature, meaning that there is a lack of informational scope when compared to SCOP and SPF.

Both a SCOP and SPF theoretical approach are used as more accurate gauges of operational expenditure. However, Seasonal Performance Factor (SPF) is widely regarded as providing a more representative assessment of installed system performance because it can incorporate the wider system energy consumption and operational characteristics that influence actual efficiency and operating costs.

SCOP provides a valuable, standardised measure of heat pump efficiency. However, commercial customers ultimately pay for the performance of the complete installed system. For this reason, Rinnai believes system-level metrics such as SPF provide a more meaningful indication of likely operating costs, carbon performance and customer outcomes.

The key benefits include SPF:

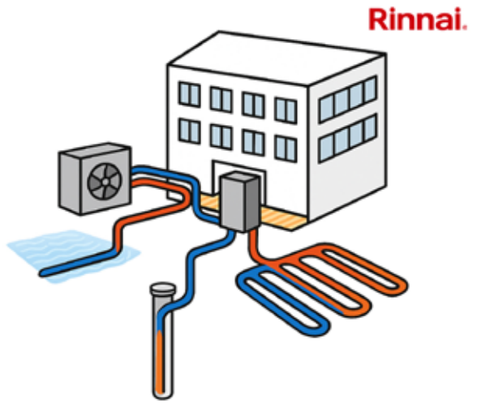
1. Accurate performance measurement based upon the HW application, allowing the user to forecast more precise operational costs.
2. Design a system for the SPF of the customer, allowing customer constraints and requirements to be at the forefront of design. This allows for the best solution for the customer.
3. Reduced carbon production if a customer works with a manufacturers design team to optimize their system from an SPF perspective.



SPF methodologies are supported by recognised industry research, including the SEPEMO project, which established a series of system boundaries ranging from H1 to H4. These boundaries allow varying levels of system energy consumption to be assessed, ranging from the refrigeration cycle alone through to the performance of the complete installed system. This enables a more transparent understanding of how different design decisions influence operational efficiency.

A high SPF rating indicates genuine heat pump system efficiency, which provides more heat than consumed electricity. An SPF-based assessment can provide a more representative indication of likely real-world performance because it considers the interaction between equipment, ancillary energy consumption, site conditions and customer operating requirements. This results in significant cost reduction and system longevity, both of which are attractive to potential customers.

Heat pump component and overall system congruity is vital for customer expectations to be met and satisfied. Avoiding higher outgoing costs over a product lifecycle, increased system sustainability and efficiency are the pivotal areas that appeal to customers that are considering heating and hot



water system purchase. SPF targets these areas of system operation to detail a true account of performance.

For heat pumps to become mainstream in commercial applications, performance assessments should consider the behaviour of the complete installed system rather than the heat pump unit alone. COP remains valuable for understanding performance at specific operating points, while SCOP provides an important, standardised measure for comparing seasonal efficiency. However, Rinnai believes that SPF offers a more representative indication of how a complete heating and hot water system is likely to perform in practice, which is why this methodology forms an important part of the company's heat pump system design approach.

For a free Rinnai CPD on SPF visit today at **https://www.rinnai-uk.co.uk/training/cibse-cpd-training-enrolment**

ARE HEAT PUMPS REALLY THE FUTURE? THE BALANCE BETWEEN POLICY & REALITY

Rinnai Director Chris Goggin confronts the question surrounding heat pump installations: how does the idea of heat pumps being classified as the primary solution towards domestic and commercial decarbonisation compare to the direction of the UK low carbon heating and hot water technology market?



Heat pumps are a huge part of the UK's plans to lower carbon emissions, but to fulfil the aims of the UK Department of Energy Security and NetZero, heat pumps must become more accessible and widespread throughout UK properties. As the UK is slower in its uptake of heat pump technology when compared to European nations, how does centralised insistence of heat pump ownership correlate to the reality of the low carbon heating and hot water market?

Heat pumps are a viable technology that efficiently provides warmth and heated water. Although the UK is still reliant on fossil fuels, heat pump adoption is a growing trend amongst UK customers. Currently just 1% of UK homes use heat pumps as a primary source of heating and hot water. For every heat pump sold there are 15 gas boilers purchased.

But, as of 2024 UK heat pump sales were recorded at 98,345, up from 62,906 from 2023. Between 2025 and 2030 the UK heat pump market is expected to expand by 11.10% CAGR (Compound Annual Growth Rate). Heat pump awareness and popularity is evidently rising.

The UK government has outlined a pathway to decarbonisation that aims to reach 600,000 heat pump installations per year by 2028.

Considering that heat pump proposals were set from October 2020 via the UK government's Ten-Point Plan, the UK is still not even halfway towards achieving their 2028 target.

Reading these figures does force the question: is there a balance between heat pump policy and the reality of the UK low carbon technology market?

The reality is that heat pump installations are rising year upon year, yet significant barriers remain. Gas boilers typically have lower upfront costs, whilst the running costs of heat pumps can vary depending on electricity prices, system design, building fabric and tariff selection. For commercial buildings, additional challenges such as electrical infrastructure upgrades, plant room constraints and capital investment requirements can influence technology decisions.

Despite these challenges, the direction of travel remains clear and recent policy changes are helping to close the gap between government ambition and market reality.

However, there have been several noteworthy recent adaptations to policy that attempts to reduce costs and increase accessibility to heat pumps, closing the gap between UK policy and the current low carbon heating and hot water market reality.

UK (England) heat pump regulations have been amended to accommodate property owners. A size limit has been increased from (0.6m^ {3} \) to \ (1.5m^ {3} \). This regulatory adaptation allows for higher efficiency systems to be installed.

A further regulation that has been adjusted is the removal of the Boundary Rule. This rule demanded that heat pump installations be 1 metre away from the boundary of the property.

Detached homes can now install up to 2 heat pumps without the need for planning permission from the LPA (Local Planning Authority).

Noise compliance is an area of heat pump ownership that has been regulated to ensure communities will not suffer from excess decibels. Heat pump installations must pass a formal sound power test. Typical limits require noise levels to remain at or below 42 dB or 40 dB during the evening and night (19:00 to 07:00) at the property boundary.

Domestic heat pumps will now have to be "Smart-ready," meaning that heat pumps will be able to select the cheapest energy tariff at any given moment based on demand.

A final regulatory shift centres on cooling systems; air-to-air heat pumps that offer both heating and cooling are now included under permitted development, on the provision that cooling is not the sole purpose.

These are the domestic updates in regard to heat pump installations. What are the commercial regulatory changes that business owners should be aware of?

Any new commercial new-build property must be required to include ultra-efficient, low-carbon heating systems like heat pumps as opposed to fossil fuel systems. This directive is published in the Future Building Standard.

Modern commercial heating design increasingly favours lower flow temperatures, often around 55°C or below where practical, as this can improve overall system efficiency and support the adoption of low carbon technologies such as heat pumps.

The "Clean Heat Market Mechanism" is a financial obligation placed on fossil fuel boiler manufacturers and can be viewed as gas boiler taxation. If a manufacturer does not reach a low-carbon heat target of 8% then financial penalties will be imposed. This decision is expected to increase heat pump deployment and further stimulate the low carbon heating market. Whilst supporters believe it could help reduce costs through increased adoption and manufacturing scale; there remains ongoing debate regarding how costs and savings will ultimately be passed on to consumers.

F-Gas regulations have been updated phasing out commercial heat pumps that include harmful refrigerants during operation. Heat pump designers will now have to utilise eco-friendly refrigerants such as R290 and R32.

Non-domestic and community buildings have been awarded beneficial permitting development rights. It is now easier to install ground or water source heat pumps without confirming full local authority approval. However, air source heat pumps are still under local power authorisation and must comply with noise lowering standards.

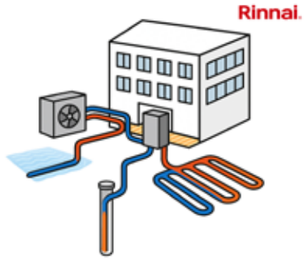


However, significant practical challenges still exist, particularly within the commercial sector. Electrical infrastructure remains one of the largest barriers to large-scale heat pump deployment. Many existing buildings were not designed for high levels of electrification and upgrading incoming electrical supplies can involve substantial costs, lengthy lead times and coordination with Distribution Network Operators. These factors must be carefully considered alongside policy ambitions.

New regulations also ensure that new-build properties must now be equipped with high efficiency and low carbon heating systems and fossil fuel boiler manufacturers are now motivated to include heat pump in their inventories or face financial penalties. This is theorised to assist in the initial cost of investing in a heat pump more bearable.

Whilst heat pumps will undoubtedly play an increasingly important role, they may not represent the ideal solution for every building. In many applications, hybrid systems and alternative low carbon technologies may provide a more practical route to carbon reduction whilst balancing affordability, resilience and operational requirements.

UK governmental policy in financial assistance also further encourages heat pump ownership. The Boiler Upgrade Scheme provides £7,500 towards air or ground source heat pumps. The same scheme does not include hybrid systems and clearly favours heat pump technology.



Five years ago, the gap between policy and reality in terms of UK heat pump ownership was thoroughly discernible, now all trends appear positive and on an upwards trajectory.

Heat pumps are no longer an exotic "European" or "Scandinavian" technology, they are a viable and efficient form of heating and hot water provision. Significant work has been completed to make heat pumps market relevant and more affordable. There is a current harmony between policy and reality that is beginning to provide positive results and upwards momentum in all UK heat pump consumer trends. Heat pumps are an important part of the UK energy and appliance future.

The future is unlikely to be defined by a single technology. Instead, success will come from applying the right low carbon solution to the right building at the right time.

Rinnai will continue to locate and share any information and knowledge with all UK customers with the aim of assisting product or energy selection. Providing holistic commentary on any news pertaining to finance, technology and geopolitical events that influence energy costs or availability will assist potential customers in all decision-making processes.

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

WHY WATER EFFICIENCY IS BECOMING A BUSINESS PRIORITY IN THE UK

Water efficiency has moved rapidly up the agenda for businesses, water companies and regulators alike. As the UK faces growing pressure on water resources, organisations are being encouraged to play a greater role in reducing demand and improving long-term resilience.

This shift has been highlighted by **Ofwat's recent consultation** on proposed changes to charging rules designed to promote more efficient water use across the sector.

The regulator is exploring whether existing charging structures provide strong enough incentives for customers to reduce consumption and whether greater flexibility is needed to encourage more sustainable water management practices.

While the consultation is primarily aimed at the water industry, the message for businesses is clear: water efficiency is no longer simply about reducing utility bills. It is becoming an important part of environmental responsibility and operational resilience.

WHY IS WATER EFFICIENCY RECEIVING MORE ATTENTION?

The UK water sector faces a number of significant challenges. Population growth continues to increase demand for water, while **climate change** is creating more frequent periods of drought, extreme weather and seasonal water shortages.

At the same time, environmental protections require rivers, reservoirs and groundwater sources to be managed more sustainably. The challenge is straightforward. Demand for water is increasing while available resources are becoming more constrained.

As a result, regulators and water companies are increasingly focusing on demand management rather than relying solely on new infrastructure projects.

Reducing water consumption is often faster, more cost-effective and more environmentally sustainable than developing entirely new water supply schemes.



WHAT IS OFWAT PROPOSING?

Ofwat's consultation focuses on potential changes to the **Wholesale Charging Rules** and Charges Scheme Rules. One of the key issues under consideration is whether current tariff structures provide sufficient incentives for customers to use water efficiently.

In some cases, existing charging arrangements may weaken the link between water usage and the costs experienced by customers. Where consumption levels have little impact on bills, there is naturally less motivation to identify inefficiencies or reduce unnecessary usage.

The regulator is therefore examining how charging structures could better support water efficiency while remaining fair, transparent and affordable.

Although the outcome of the consultation is yet to be determined, it reflects a wider trend towards placing greater value on efficient water use across all sectors.

WHAT COULD OFWAT'S CHANGES MEAN FOR BUSINESSES?

As water scarcity becomes a more prominent issue, businesses may increasingly find themselves operating within a framework that rewards efficient water management and encourages reductions in consumption.

Organisations that already understand their water usage and have efficiency measures in place are likely to be better positioned to adapt to future changes.

Those that have little visibility over their water consumption may face missed opportunities for savings and operational improvements. This makes now an ideal time to review how water is being used across sites, facilities and operational processes.

UNDERSTANDING WATER CONSUMPTION IS THE FIRST STEP

One of the biggest challenges businesses face is that they often do not have detailed visibility of their water usage. Many organisations only review consumption when a water bill arrives, making it difficult to identify unusual patterns or emerging problems.

Modern monitoring technologies can provide a much clearer picture. AMR (Automatic Meter Reading) systems and **water flow data logging** allow organisations to track water usage in near real time. This data can reveal:

- Overnight consumption
- Unexpected spikes in usage
- Seasonal trends
- Process inefficiencies
- Potential leaks
- High-consumption assets

With accurate information available, businesses can make informed decisions about where improvements can be made.

HIDDEN LEAKS CAN HAVE A MAJOR IMPACT

Water leaks remain one of the most common causes of unnecessary consumption. Many commercial leaks occur underground or within complex building systems where they may go unnoticed for months.

Even relatively small leaks can result in significant water loss over time, increasing costs and placing unnecessary pressure on local water resources.

Professional **water leak detection services** can identify hidden issues before they become major problems. Combined with prompt repairs, leak management programmes often deliver immediate water savings and help organisations avoid future disruption.

For businesses looking to improve water efficiency, leak detection is often one of the quickest and most effective measures available.

WATER AUDITS REVEAL OPPORTUNITIES FOR SAVINGS

A comprehensive water audit provides a detailed assessment of how water is being used across a site or organisation.

The process examines water consumption patterns, operational processes, infrastructure performance and billing data to identify opportunities for improvement.

Water audits commonly uncover:

- Inefficient equipment
- Excessive water consumption
- Incorrect billing
- Undetected leaks
- Opportunities for recycling or reuse
- Process improvements

In many cases, businesses discover savings opportunities that require little or no capital investment.

The value of a water audit extends beyond cost reduction. It also provides a foundation for long-term water management planning and sustainability initiatives.

WATER RECYCLING AND ALTERNATIVE WATER SOURCES

As water efficiency becomes increasingly important, many organisations are exploring ways to reduce reliance on mains water supplies.

Commercial water recycling systems allow water used in certain processes to be treated and reused rather than discharged. Similarly, rainwater harvesting systems can capture rainfall for non-potable applications such as cleaning, irrigation and toilet flushing.

WATER STEWARDSHIP IS BECOMING A COMPETITIVE ADVANTAGE

Increasingly, customers, investors and stakeholders expect organisations to demonstrate responsible environmental practices.

Water stewardship is becoming an important component of **Environmental, Social and Governance (ESG)** strategies and sustainability reporting.

A strong water stewardship programme typically includes:

- Water consumption monitoring
- Water efficiency improvements
- Water footprint assessments
- Wastewater management
- Leak reduction initiatives
- Long-term water strategy planning

Businesses that take a proactive approach to water management often benefit from stronger environmental credentials and improved stakeholder confidence.

Importantly, water stewardship also helps organisations prepare for future regulatory changes and resource constraints.

PREPARING FOR A MORE WATER-EFFICIENT FUTURE

Regardless of the outcome of Ofwat's consultation, the direction of travel is clear. The UK water sector is placing increasing emphasis on reducing demand, improving efficiency and strengthening resilience.

Organisations that invest in understanding and managing their water use today are likely to benefit from lower costs, reduced environmental impact and improved operational resilience in the years ahead.

If you'd like to find out more about how H2O Building Services can help your organisation become more water efficient, **please get in touch today**.



ROOFTOP SOLAR: CAPACITY AND CONDITION ARE TWO DIFFERENT QUESTIONS



Sahir Raihan, Structural Engineer and Managing Director, Solar Surveys Ltd



Photographs: Solar Surveys. Moss and vegetation across the EPDM membrane of a large industrial flat roof. The structure had capacity to spare; remediation of the covering was advised before installation.

A roof that passes its structural check can still need repair before panels go on. Data from 1,568 roof planes shows why a solar business case should price both questions from the start.

Most rooftop solar business cases are built on yield, tariff and payback. The roof tends to get a single line: structural survey required. That line hides two questions, and they have different answers and different costs. Can the structure carry the array? And is the roof fit to carry it for the life of the system?

We have put numbers on both. The UK Roof Plane Dataset 2026 records 1,568 roof planes on 651 buildings and homes assessed for solar between January and September this year, with every figure taken from an issued structural report. It is not a random sample of UK roofs. These are roofs somebody intended to put solar on, which is the population an energy manager deals with.

THE ARRAY IS RARELY THE DECIDING LOAD

A typical array adds about 0.13 kN/m², around a fifth of a commercial roof's allowable imposed load. What decides whether a roof can take it is how much of its capacity is already spoken for, and in the dataset it was snow, not the solar, that decided how close a roof ran to its limit. Snow load rises with altitude, so the same building can give a different answer in a different place. On the commercial roofs, the median share of capacity used by PV and snow together rose from 61% below 50 m above sea level to 92% at 150 m and above.

Some building types run closer to the limit than others. Of 112 commercial buildings with a stated figure, 20 used 90% or more of their capacity once PV and snow were combined. Schools and faith and community buildings reached that level most often, 36% of each. A business case that assumes the same headroom across an estate will be most optimistic at exactly the sites with least to spare.

CONDITION IS A SEPARATE QUESTION

The second finding is that capacity tells you nothing about condition. Roofs with a visible condition issue in their survey photographs used a median 75% of their capacity; roofs without one used 73%. A pass on the loading check is no evidence that the covering will last, and a sound covering is no evidence of structural headroom.

Condition follows the covering. A visible issue was photographed on every natural slate roof we recorded, 93% of felt flat roofs and 83% of fibre cement, against 51% of profiled metal and 38% of standing seam. Across 109 commercial buildings, the photographs showed biological growth on 41% and ponding or drainage marks on 8%, and rooflights, which are fragile and limit where an array can go, on 68%. Very few of the reports recorded a roof's age, so at portfolio scale the covering is the most reliable guide to it.

Flat roofs deserve particular care. Seven of the nine buildings with visible ponding had felt or bitumen membranes, and 37 of the 42 flat-roofed commercial buildings with a stated fixing method named a ballasted system, which is a permanent dead load.

WHAT IT MEANS FOR THE BUSINESS CASE

Once panels are on, repairing the roof beneath them means taking them off first. The covering's remaining life therefore belongs in the business case alongside the structural answer, not after it. In practice that means:

- asking for capacity and condition to be reported together, before procurement, so remedial work is priced in rather than discovered;
- treating any repair the covering needs within the system's life as part of the project cost, done before installation;
- checking that feasibility work uses each site's own snow load, corrected for altitude, rather than one figure for the whole estate;
- screening the whole estate first and concentrating survey effort where the roof area is. In our data, one commercial building in five carried more than half of the commercial roof planes.

A roof that passes its structural check has answered one question. A sound business case needs the answer to both.

The UK Roof Plane Dataset 2026 is free to read and cite at **solarsurveys.co.uk/roof-plane-dataset-2026**

PUBLIC SECTOR

WITH NO SIGN THAT THE SQUEEZE ON GOVERNMENT SPENDING WILL BE RELAXED ANY TIME SOON, PUBLIC SECTOR FINANCES WILL CONTINUE TO BE UNDER THE MICROSCOPE.

H2O THE WATER AUDIT EXPERTS

The challenge laid down to public sector bodies is simply this – find more efficient, cost-effective ways to spend taxpayers' money, while maintaining service levels. Waste is simply no longer an option, from procurement through to utilities.

H2O Building Services helps public sector bodies reduce unnecessary costs by cutting their water bills. By lowering water usage, improving efficiency and monitoring bills for overcharging, we save organisations an average of 30% on their water costs. When you are looking for ways to keep a lid on budgets, that is not to be sniffed at.

CUTTING WATER COSTS

Our professional consultancy team can draw on more than 30 years' experience[1] in the water industry. We understand water supply and sewerage services inside out and we specialise in managing costs across large, complex organisations.

We offer a complete end-to-end service for water cost reduction, from checking your bills are accurate and fair through to installing on-premise systems which will help save you money over time. We have earned a strong reputation for outstanding service and achieving impressive results for public sector clients.

Read about how we saved Haringey Council £40,000[2] after carrying out a full audit of water usage across all of its premises. Or find out how we saved HM Prison Service £57,000[3] after identifying a water leak at HM Pankhurst, and also by cutting sewage charges for laundry effluent.

GETTING STARTED

In the first instance, we will ask a public sector client to supply water billing records for all of its properties, stretching back several years if possible.

We understand that public sector organisations are large and may operate a high number of premises. But this is a crucial step which can straight away help us identify whether charges look right for the type and use of the property.

After carrying out a thorough analysis of billing records, we will audit water use[4], including carrying out site visits where we think it necessary. The water audit will form the basis of all recommendations we make for cutting water costs, from reducing water use to seeking refunds for overcharging, tackling leaks and waste to ongoing monitoring.

Share:

WATER BILL REFUNDS

If we spot mistakes in the water bills for any of your properties, we will advise whether they have led to you being overcharged. If you have paid too much for your water services, our experienced consultants will seek a refund on your behalf from your water supplier.

REDUCING WATER WASTE

One of the biggest causes of inflated costs on water bills is waste. If, for example, you have one or more leaks at any of your properties, you will be charged for that excess water which you never use. In addition, you could be incurring extra costs for water drainage, not to mention potentially massive bills for water damage repairs.

We offer full site surveys as part of our consultancy service, including water leak detection[5]. If we identify a problem, we will first compile a full report, outlining the size of the leak, the potential damage it might be causing, and the impact on your bills. We will then submit a cost proposal for repairs, aiming to achieve a robust, quality solution in the most cost-effective and least disruptive way possible.

We can also recommend installations aimed at

improving water efficiency[6] at your premises.

These include things like Flow-Tec P.I.R urinal flush controls, Pressure Reducing Valves (PRVs) and Aeroflow low flow showers. We can also advise on water recycling[7] for using waste water in things like lavatory systems. Again, all proposals are fully costed, and we will also include an expected payback period, usually achieving an average of between 9 and 12 months.

1. www.h2obuildingservices.co.uk/about-us/
2. www.h2obuildingservices.co.uk/case-studies/haringey-council/
3. www.h2obuildingservices.co.uk/case-studies/hm-prison/
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9. www.h2obuildingservices.co.uk/our-services/amr/

ONGOING MONITORING

We understand that reducing costs is not a one-off exercise, but part and parcel of daily life for public sector organisations. We can help you keep on top of your water billing long term, making sure you are never charged more than you should be and keeping your water usage in check.

Through our water bill validation[8], we will check each bill before your receive it, vetting it against actual usage and resolving any discrepancies with your supplier before it comes to authorising payment.

We also offer

Advanced Meter Reading (AMR)[9]

a highly sophisticated water tracking technology, which can monitor water flow on an hourly basis. Any unusual spikes in water usage automatically trigger an alert, which we will pick up and respond to straight away.

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