MAY 2026

EM Magazine

www.energymanagermagazine.co.uk

INSIDE THIS ISSUE:


Take control of your energy use
Our cloud based energy management system, Optimum, gives you instant, flexible data analysis that helps you take the first step in driving big cost savings.
Scan to book your free demo
e·on
Optimum

EM Magazine

MAY 2026

PUBLISHER: Ralph Scrivens
ralph@
energymanagermagazine.co.uk

PRODUCTION: Sarah Daviner
sarah@
energymanagermagazine.co.uk

ACCOUNTS:
accounts@
energymanagermagazine.co.uk

PRINT: Mixam Print

ENERGY MANAGER MAGAZINE
is published 10 times a year
by Energy Manager.

www.energymanagermagazine.co.uk

42 Wymington Park, Rushden,
Northants, NN10 9JP

Email:
mail@energymanagermagazine.co.uk

REGISTRATION: Qualifying readers receive Energy Manager free of charge. The annual subscription rate is £80 in the UK, £95 for mainland Europe and £115 for the rest of the world.

Single copies £10.

Some manufacturers and suppliers have made a contribution toward the cost of reproducing some photographs in Energy Manager.

PAPER USED TO PRODUCE THIS MAGAZINE IS SOURCED FROM SUSTAINABLE FORESTS.

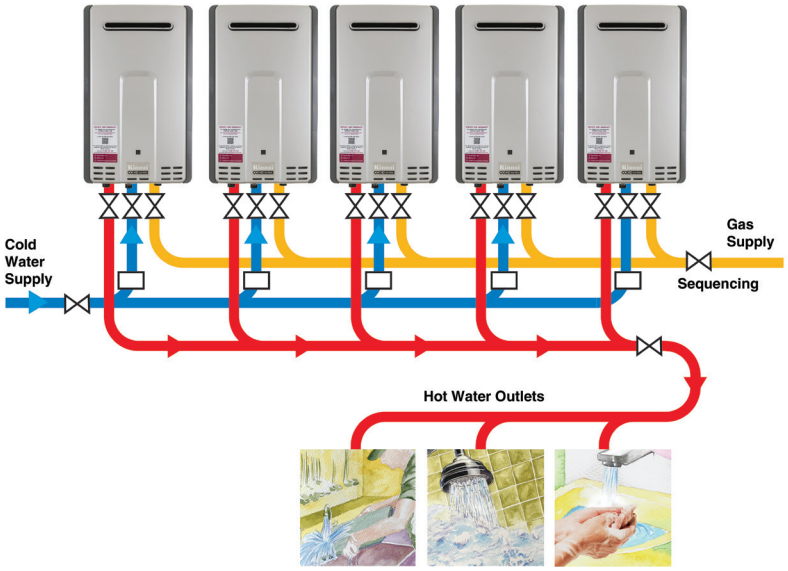
ISSN 2057-5912 (Print)
ISSN 2057-5920 (Online)

Front cover image: www.istockphoto.com/portfolio/PavloBaliukh

INSIDE

FUTURE ROLE OF GAS? THE RINNAI SURVEY SAYS...

Rinnai marketeer Beckie Lam presents the results of a representational survey of HVAC industry consultants & contractors on the subject of "The Future Role of Gas in UK Heating and Hot Water." From this survey are findings on current confidence – or lack of – on the role of Natural Gas regarding future technologies and practises.



Rinnai has conducted a survey asking industry professionals a series of questions with multi-choice responses on "The Future Role of Gas in UK Heating and Hot Water."

The key extrapolations made from this survey reveals that there is a reluctance or uncertainty to fully ignore natural gas as a primary source of UK energy. The reasons for uncertainty were not probed in this survey but can be reasonably assumed when analysing the current conditions of the domestic and global energy markets.

A main influence in the energy industry that could be attributed towards a feeling of uncertainty is cost. UK customers appear to trust natural gas and accompanying technology more so than renewables. This is despite natural gas being vulnerable to geopolitical conflict. This was demonstrated by the spike in costs following the inception of the Russia-Ukraine conflict. A similar rise in natural gas cost is expected to be experienced this year.

It could be argued that if this survey was completed in the near future when additional costs become apparent, confidence in natural gas will be reduced and confidence in renewables increased. However, this survey does reflect a level of reluctance to move away from natural gas as a reliant form of energy.

This survey was completed before the military conflict in Iran, so the answers to the survey do not take into consideration potential fluctuations in gas costs. The current state and economic military action throughout the globe means that natural gas could be regarded as a financial concern by energy industry professionals and customers.

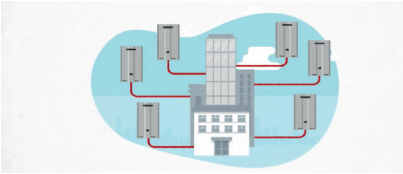
When considering the feedback – 53% believe that gas has a long-term UK future, an additional 46% think gas will be a main contributor towards UK power for 21 – 50 years, with a further 11% believing that gas has a shelf life of over 50 years.

Is this evidence that confidence in replacement energies and technologies does not appear to have been fully adopted by UK energy industry professionals? Or is this evidence of total confidence in natural gas by UK energy sector professionals?

When asked if new builds should be constructed with gas infrastructure 15% strongly agreed whilst 46% agreed. When compared to the figures of 19% of participants who disagreed and the 7% who strongly disagreed, you can argue that there is discernible support for the continuity of gas usage in UK new builds.

When you also add the 57% of respondents who strongly believe gas has a role in supplying energy to existing UK buildings and the 38% who also believe the same albeit in less rigorous assertion, gas appears to be favoured across new build and existing buildings. Again, natural gas is regarded as an energy source capable of delivering UK power requirements for heating and hot water.

When asked about pathway potential of gaseous energy only 3% answered 'unsure'. This could insinuate that confidence in gas supplying infrastructure is high and that gasses are immediately identified as an available and convenient energy solution by UK energy industry professionals. The aforementioned survey figures imply that natural gas is still viewed as a cornerstone of UK energy supply and that gas has a pertinent role in the near and far future.



For free policy, opinion pieces, and more sign up for the free Rinnai newsletter today – https://www.rinnai-uk.co.uk/contact-us/newsletter-sign

This survey highlights that gas is still a strong option for all concerned and potentially reveals an uncertainty. What, precisely, is the uncertainty is ironically uncertain. Is it holistically NetZero as a concept and approach, alternative energies and related technology or simply cost of alternatives?

We are interested in your views – have you say at **https://www.rinnai-uk.co.uk/contact-us/ask-us-question**

Rinnai aims to clarify the thoughts and concerns of UK contractors, specifiers, installers and customers of energy as well as appliances. Work will continue in presenting concise and transparent information that is designed to aid understanding of commercial, domestic and global energy direction and to assist in identifying the correct energy sources, fuels and appliances for all UK customers.

Flexitricity

FlexGO by Flexitricity

Unlock smarter energy revenue.

FlexGO is a new venture from Flexitricity, created specifically for industrial and commercial businesses.

Backed by 20 years of pioneering work in flexible energy, and a virtual power plant now exceeding 1GW, we help customers earn from energy flexibility while supporting lower emissions and greater energy security.

With FlexGO, you can flex your energy use and generation to balance the grid and unlock new revenue, all without disrupting daily operations.

Scan the QR code to visit Flexitricity

flexitricity.com

Scan the QR code to visit FlexGO

flexgo.energy

BUSINESSES BACK VOLUNTARY CARBON CREDITS AS MARKET RAMPS UP

Voluntary carbon credits are fast emerging as one of the most dynamic tools in the race to net zero. Once seen as a niche sustainability gesture, they're now moving firmly into mainstream ESG activities for corporates. As momentum builds, such schemes are drawing serious attention from policymakers, investors and businesses alike, with an increasing focus on ensuring their integrity and credibility. Now more than ever, a streamlined, global standard is needed.

A recent survey by the Morgan Stanley Institute for Sustainable Investing found that over 90% of companies currently purchasing voluntary carbon credits plan to continue doing so and expect volumes to grow over time. With corporate net zero strategies becoming more of a priority and the UK's commitment to net zero greenhouse gas emissions by 2050 drawing ever closer, the market has potential for rapid growth.

Anticipating this growth, the UK government consulted on proposals to raise integrity in voluntary carbon and nature markets, including how its 6 Principles for Voluntary Carbon and Nature Market Integrity could be implemented through guidance, policy and, where appropriate, regulation. The government has now published a summary of the feedback received, revealing broad support for improving integrity, confidence and usability in these markets.

Respondents emphasised several key priorities: internationally aligned expectations on the appropriate use of credits; robust approaches to credit quality; transparent reporting; proportionate approaches to assurance and enforcement; and avoiding unnecessary fragmentation. These themes provide a clear roadmap for policymakers and signal what businesses expect from any future regulatory framework.

In particular, many respondents supported the government endorsing the Integrity Council for the Voluntary Carbon Market's Core Carbon Principles (CCPs) and accompanying Assessment Framework as a minimum quality requirement. The CCPs were widely viewed as a credible, science-based benchmark that could improve trust, comparability and reduce the risk of perceived greenwashing. However, several respondents qualified their support, noting that whilst they endorsed the CCPs in principle, clear guidance for practical application would be essential. The government's policy response is expected in summer 2026.

Georgia Spyrou, Solicitor in the Energy team at law firm Shakespeare Martineau.

Voluntary carbon and nature markets channel private capital towards environmental initiatives, for example funding restoration and conservation projects that may otherwise not be supported, which, as a result, offer a simple way for businesses to offset their emissions while also providing significant commercial and reputational benefits. For example, such credits could help bolster a business' financial resilience. This is because they may be viewed favourably in the context of sustainability-linked finance and preferential terms may be offered by lenders to businesses that demonstrate strong ESG credentials, including diversified approaches to decarbonisation.

Despite these benefits, the main challenge to wider adoption remains inconsistency in the regulatory landscape. With many different carbon crediting methodologies and standards in the market, there are concerns from businesses and their stakeholders about the credibility of their offsetting activities. Allegations of misleading environmental claims have become relatively common within the business community, and the consequential reputational damage can be vast. When it comes to a holistic ESG approach, relying solely on a voluntary carbon credit scheme is risky. While these credits are a valid route to decarbonising supply chains and incentivising third party suppliers, to properly engage with prudent ESG compliance, businesses must review their own operations and actively work on reducing Scope 1, 2 and 3 emissions where possible.

Whilst a great way to get an 'industry view', the consultation process does not lend itself to agility. It can take time to form these responses into a plan with actionable steps, and then begin to execute that plan. To capitalise on the current popularity of voluntary carbon credits, the government must address the concerns with the framework swiftly. This also means ensuring the policies are then acted upon. Government consultations have been known to struggle with delivering change after they have concluded, and it's vital that the outcomes from this one don't get pushed aside for other items on the political agenda.

It is also important that the government does not just stop at implementing a national integrity framework, but works with other countries to establish a coherent global standard. If all countries had the same integrity standards for voluntary carbon credits, this would allow for better benchmarking and adherence across the board. On a global scale, such standardisation can help to encourage businesses around the world to participate in offsetting initiatives.

Voluntary carbon credits are on the precipice of becoming a standard part of businesses' ESG initiatives, with interest at a national and international scale. The government urgently needs to implement a standardised framework for the voluntary carbon credit market, and the consultation responses provide a clear indication of what stakeholders expect from such a framework. **https://www.shma.co.uk/**

CHAUVIN ARNOUX

PEL 115 - BUILT FOR CRITICAL INFRASTRUCTURE

LIGHTNING. ROADS. TUNNELS. RAIL.

Different systems. Different energy challenges. One clear direction.

IP67 RATED ENERGY LOGGER

- Energy audits
- Load profile analysis
- Preventive and predictive maintenance
- + Motor diagnostics: without mechanical sensors

RUGGED. WATERPROOF. ALWAYS ON.

Stationed on electricity poles, in plants, and across transport networks.

STAY CONNECTED WITHOUT LIMITATIONS.

Ethernet | Wi-Fi | USB | IRD DataView® Sync

NO GUESSWORK NEEDED.

Rely on the PEL Transfer Software for full energy reporting and analysis.

Test smarter — order the PEL 115 today!

Chauvin Arnoux UK Ltd. | www.cauk.net | Shaw Cross Business Park | Dewsbury WF12 7TH

GET YOUR QUOTE

01924 460494

info@chauvin-arnoux.co.uk

INVESTING DESPITE UNCERTAINTY. IMPACTS AND SOLUTION IN THE CONTEXT OF CONNECTION DELAYS.

Charles Hardcastle, Partner, Head of Energy & Marine, Carter Jonas

The Great Grid Upgrade is indispensable, but connection certainty has become a scarce commodity, and investors and developers are increasingly forced to plan for uncertainty.

The complexity of re-mapping of Britain's energy system is inevitable. Previously, power flowed out from large stations. Now, with generation increasingly coming from Scotland and the coast, demand growth is uneven and involves two-way flows, storage and new high-intensity loads.

The problem is that investors do not fund principles, they fund programmes with reliable dates. In the last few months, the industry has been reminded that there is a difference between an upgrade strategy and an investable delivery plan.

Following its publication of an Update on delays to connection dates for some TMO4+ Protected Projects, Ofgem admitted frustration that of 340 transmission projects with protected dates, 210 were expected to have their connection date and or connection point changed. Likewise for anyone trying to commit or attract capital, it was disappointing that projects believed to have a degree of certainty were in fact far from certain.

Our team works in the context of consents, land rights and programme delivery and we regularly see the impact of grid delays. A connection date is not just a technical milestone, but the point at which debt can be drawn, construction risk priced, revenue assumptions clarified and supply chain commitments made. Uncertainty in the timing changes not only the programme but the risk profile too.

It is easy to underestimate the true costs of a six-month delay. Retaining development teams, and renegotiating land and procurement options can be expensive but what makes the situation more difficult is that the queue itself is changing. Before the reform reset, according to NESO, the pipeline of projects seeking connections was over 700 GW, far beyond what was envisaged.

An inability to connect power has significant consequences. The Greater London Authority's West London Electrical Capacity Constraints paper warned in 2022 that major new applicants to the distribution network, including housing and commercial schemes, could face waits of several years for connections. The Old Oak and Park Royal Development Corporation went further in its Q4 2022/23 Performance and Finance Report, listing electricity capacity issues in west London as a risk that stalls delivery of new housing.

Oxfordshire has provided similarly direct testimony. Written evidence to a parliamentary committee said over 7,000 homes in Bicester had been paused while awaiting grid connection reinforcement. Furthermore, in a House of Commons debate in December, it was claimed that up to 9,000 homes north-west Bicester were stalled due to a lack of grid capacity.

Then there is strategic demand. Ofgem's demand connections update shows contracted offers in the demand queue rising from 41 GW in November 2024 to 125 GW by June 2025.

For many, the option of waiting does not exist because capital and supply chains do not pause. The only practical response is to plan on the basis of connection uncertainty and design the project so it can survive that risk. There are investment strategies that can mitigate the impact of delay, as I have seen in practice in the work of experienced advisory teams.

One is to treat the grid as a scenario set: model a base case, a delayed case and a reconfigured case, then build decision points into the programme so that early spending buys options rather than locks in irreversible commitments.

Secondly, it can be possible to stage capital in line with deliverability evidence. Enablement works, land assembly, surveys and consents can move ahead while larger spend is held behind pending the clearance of hurdles such as a confirmed connection offer, secured route or defined reinforcement solution.

There is also the possibility of designing for modularity and flexibility, perhaps accepting a smaller connection earlier and expand later and working in flexible connections, storage and demand management.

Sometimes the answer is co-location and private wire. In others, behind-the-meter generation paired with storage can keep a site operational.

Finally, I advise aligning consenting strategy with delivery risk. Planning consents expire if not implemented. That risk needs managing from the start through phasing, conditions strategy and a clear plan for what constitutes meaningful commencement if a scheme needs to preserve a permission while the grid position is resolved.

The need for the Great Grid Upgrade is indisputable because the alternative is curtailment, higher system costs and investment drifting to jurisdictions that can offer firmer delivery. But confidence will only return through greater transparency, discipline in sequencing where possible and a more joined-up view of future demand. **www.carterjonas.co.uk**

WHY ELECTRIFICATION WITHOUT OPTIMISATION IS BECOMING THE NEW BOTTLENECK

Ian Rose, Sales & Strategy Director at Passiv UK

With the Future Homes Standard now formally announced, the UK has taken a decisive step toward electrified heating in all new homes. Heat pumps will become the norm, and this is a significant milestone in decarbonising housing – but are we optimising these systems to work intelligently within the wider energy network?

The government is getting increasingly serious about building a connected energy system, one that works better for everyone.

Recent initiatives, including the Energy Digitalisation Framework, and the Clean Power Action Plan, set a clear direction of travel, a more data-driven, interoperable and lower-carbon electricity system by 2030.

At the same time, the UK now has several important policies in place for homes: the Future Homes Standard for new builds, the Warm Homes policy for existing housing, and emerging governance around Smart Secure and Interoperable Energy Smart Appliances (SSES). Taken together, these frameworks provide the foundations for a modern, flexible energy system.

The question is no longer whether the policy exists, but whether it is aligned around the technology needed to make it work.

The UK has spent the last decade focusing on fabric-first improvements – better insulation, better glazing, better walls. That approach made sense when reducing heat loss was the primary challenge, but the system has moved on.

Electrification without optimisation is becoming the new bottleneck. As homes shift to electric heating and transport, the challenge is no longer just how much energy we use, but when and how we use it. We now need both approaches: fabric-first to reduce demand, and smart-first to manage it. At present, only one is consistently mandated.

Electricity demand is rising as households adopt electric vehicles, heat pumps and other low-carbon technologies. At the same time, more of our generation is coming from intermittent renewables such as wind and solar. This combination creates a new challenge: matching supply and demand in real time without overloading the grid. Without a more flexible and intelligent system, we risk inefficiencies, higher system costs and potential strain on infrastructure during peak periods.

Heat pumps are central to the UK's decarbonisation pathway and, under the Future Homes Standard, will be required in new builds. But it stops short of mandating smart energy-management controls specifically for heat pump optimisation. Without optimisation, heat pumps behave as static electrical loads added to an already constrained grid. With smart controls, they become flexible assets capable of shifting demand in time without affecting comfort.

One of the most promising ways to address this gap is through Demand Side Response (DSR) and wider demand flexibility services. These allow electricity use to be adjusted temporarily to help balance the grid, while unlocking savings for consumers. Demand flexibility is not new. Grid operators have used it for decades at an industrial scale. What is changing is the opportunity to extend it into homes at scale.

Ofgem estimates that up to 60GW of flexibility from low-carbon technologies will be required by 2050. Achieving this will depend on automating high-power household assets such as heating systems.

The solution already exists in the market. Smart controls, such as the Passiv Smart Thermostat, can automatically respond to signals from the energy system. They reduce or shift demand when the grid is under pressure, while using preheating strategies to maintain comfort in the home. This turns flexibility into something invisible for the user, but valuable for the system.

As heating systems evolve, households are shifting from passive consumers to active participants in the energy system – often described as 'prosumers'. This creates new opportunities for households to benefit financially from flexibility, particularly through time-of-use tariffs and carbon-aware optimisation. These smart controls can do exactly that.

The UK now has the building blocks of a low-carbon, smart and flexible energy system, but the challenge is alignment. If the Future Homes Standard, Warm Homes policy and SSES framework were more tightly aligned around smart controls and automated optimisation, the impact would be significant: heat pumps would be flexible from day one, households would save energy automatically, and the grid would be better able to absorb renewable energy.

The UK's energy transition is no longer just about building cleaner homes or installing cleaner technologies. It is about using energy more intelligently. Smart controls and automated flexibility are not a future concept – they are the missing layer that allows today's policies and technologies to work together effectively. **https://www.passivuk.com/**

THE ENERGY IS RENEWABLE, BUT IS THE INFRASTRUCTURE?

Professor Fiona Charnley, Professor of circular innovation at the University of Exeter and researcher at the ReMake Value Retention Centre (RVRC).

The UK's renewable energy transition is often judged by the number of projects delivered, yet its longterm success hinges on something far less visible - whether the technologies we deploy are capable of retaining value throughout their life cycles, or whether they shed it, ultimately adding to the waste burden we are trying to reduce.

Circularity should be understood not simply as a waste management challenge, but as an industrial strategy that will shape the resilience, costeffectiveness and competitiveness of the UK's future energy system. Many highvalue sectors, including the aerospace and automotive industries, already demonstrate what this looks like in practice, with circularity embedded in how products are designed, built and maintained.

Renewable energy technologies, however, have yet to make this shift.

Solar power for example, is central to the UK's netzero ambitions and its contribution to the energy mix has rapidly expanded over the past two decades, yet the endoflife pathway for solar panels remains underdeveloped. Disassembly is complex, material recovery is limited, and the UK currently lacks the dedicated infrastructure needed to manage the growing volumes of panels approaching retirement. Globally, solar photovoltaic (PV) waste could exceed 200 million tonnes by 2050 and without change, valuable materials such as silver and silicon risk being lost, shifting the environmental burden from carbon emissions to waste accumulation.[1]

Alongside this, the UK imports most of the materials required for renewable energy technologies, creating a growing dependence on a diverse range of critical resources to support decarbonisation. This reliance exposes the sector to volatile global supply chains, only for many of these materials to eventually become waste. A circular economy approach can strengthen resilience and security by keeping these valuable resources in use for longer.

The solution to these issues therefore begins at the design stage.

Decisions made early in product development determine whether a technology can be repaired, upgraded or remanufactured efficiently, with industries such as aerospace and construction equipment already showing what is possible by remanufacturing components through multiple life cycles.

Applying these principles to solar and other renewable technologies would result in products that are easier to maintain, simpler to recover and significantly more valuable at end of life. Beyond reducing emissions and resource extraction, remanufacturing also strengthens supply chains and creates skilled employment, opening new revenue streams for UK businesses in the energy sector.

However, no single organisation can deliver this shift to circularity alone. Many companies face economic pressures that limit their capacity for longterm research and development, making collaboration essential. Initiatives such as the ReMake Value Retention Centre (RVRC) led by the National Manufacturing institute Scotland (NMIS) brings together industry, academia and policymakers across high-integrity sectors, supporting businesses to share expertise, test new approaches and reduce the risks associated with innovation. These collaborations are critical for turning circular principles into practical, scalable solutions.

To accelerate progress, companies will need to collaborate more closely across the value chain and invest in digital tools that enhance traceability and maintenance. Developing skills, strengthening workforce training, and adopting new business models will be just as critical as developing technology. Sector stakeholders also have an essential role to play. By setting clear expectations early and supporting circular innovation. Whether through investors encouraging manufacturers to design products for disassembly and reuse, or policymakers funding research into remanufacturing, they can help create the conditions needed for lasting change.

The circular economy is no longer a niche sustainability concept. Instead, it is a strategic approach to building the next generation of renewable infrastructure. Solar PV for example, will be indispensable for decarbonising our energy generation, but without circularity, the industry risks creating a new environmental and economic challenge.

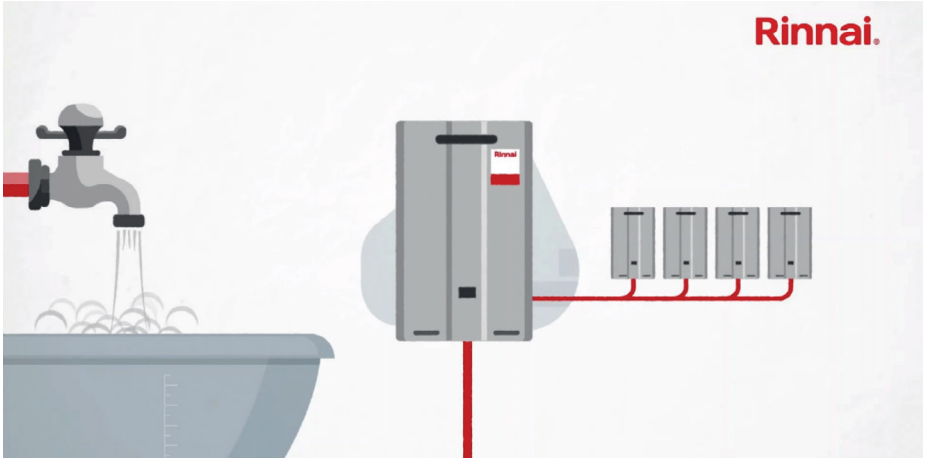
The opportunity now is to design renewable energy technologies that are themselves renewable. We need to consider circularity to make sure those technologies last, retain value, and can be reintegrated into the system – building an energy system that is resilient, resourceefficient and fit for the decades ahead.

Email: **NMIS@framecreates.co.uk**
Tel: **0141 559 5840 www.nmis.scot**

1 https://www.cisl.cam.ac.uk/news-and-resources/publications/circular-solar-opportunities-increased-circularity-solar-pv-industry

THE IMPACT OF CURRENT GEOPOLITICS

Rinnai Director Chris Goggin examines the impact of current geopolitics to the UK customer. Since the current Middle Eastern conflict began, costs have risen and are expected to rise and UK domestic energy security is again a debated topic of public interest.



Conflict in the oilfields of the Middle East will have a greater impact than desired with this being the second time in four years that fossil fuels have been weaponised due to military actions. And once again, customers worldwide will be handed higher and rising prices for their domestic, commercial and industrial energy needs.

For more information on global geopolitical issues join the free newsletter **https://www.rinnai-uk.co.uk/contact-us/newsletter-sign**

The conflict is receiving 24 hour media coverage – and the current facts that we can be as certain of are this – In late February the military action started with the USA and Israel making strikes on Iran. One of the counter-measures from Iran was closing access to the Straits of Homuz, a vital shipping lane carrying oil tankers with 20% of the world's crude oil supply.

A number of ships have been granted safe passage from India and one from Turkey. Other countries such as Italy, France and China are all seeking talks with the Iranian leadership to gain access through the shipping lane. China will push talks rapidly as 45% of national oil requirements are met through the trading passage.

As a result of this blockade the price of Brent crude oil was recently recorded at $105.70 a barrel. This is a 40% increase from before the start of the conflict.

So what does this mean to the UK customer?

Essentially, this conflict means additional costs to households for energy requirements. Around 1.5 million UK off grid premises rely on oil for heating and hot water. The BBC reported in mid-March that "A home-owner, Denise, from rural Suffolk, has seen the price of oil she uses for hot water and central heating rise from £275 for 500 litres to £800." The UK government has since confirmed a £53 million financial support package to those vulnerable households which rely on oil.

Natural gas costs have also been affected. A UK mainstream newspaper reported that the price of natural gas had risen 93%. The newspaper quoted analysts that monitor UK energy markets and costs as follows, "Dr Craig Lowrey, principal consultant at analysts Cornwall Insight, said: "The UK's dependence on global gas markets means movements in international wholesale prices feed directly into domestic bills.""

Qatar – a major producer of LNG (Liquified Natural Gas) has halted production, which is estimated to fulfil 20% of global supply. This pause in production has caused widespread concerns over supply chain issues. Now major importers of LNG such as China and India must now source supply from elsewhere.

Both China and India are believed to import around a third of all Qatari LNG and will now seek a replacement supplier, therefore increasing the value of LNG and subsequently adding to the final cost. The UK is also reliant on LNG for electrical generation, with around 28%-30% of all UK electricity being produced in 2024-2025 deriving from LNG imports. Throughout 2023, LNG made up 42% of total natural gas UK imports. As the UK relies on LNG and will have to import at an increased value, costs will filter down to the customer.

The conflict has reintroduced a debate regarding national energy security. A report commissioned by Renewables UK has stated the belief that energy security should be viewed in line with national security measures. The report also suggests that deployment of renewables should be widened as fossil fuel costs are subject to geopolitical influence – in ordinary speech that means wild price fluctuations.

There is already quantifiable evidence that proves adding renewables to UK national grid capacity reduces electrical costs to the UK customer. A recently published report explained how adding renewables into the UK electrical grid has reduced energy costs and protects customers from increases to natural gas cost fluctuations.

Jess Ralston, Head of Energy at the Energy and Climate Intelligence Unit (ECIU) was recently quoted: "Fortunately, any looming crisis is unlikely to hit electricity bills quite as hard because more renewables have been linked up to the grid meaning we don't have to run gas power stations as much. Last year renewables cut the wholesale price of electricity by a third."

By domestically generating sustainable and renewable sources of energy the UK not only reduces carbon output but also strengthens domestic energy security and reduces energy costs.

Specifiers, contractors and installers should consider using manufacturers who have positioned themselves to include a selection of low carbon technology in their inventories. As natural gas costs are expected to rise soon technology that is designed to accept clean electricity can assist in reducing long- and short-term energy costs. Customers should also evaluate what services are provided in system design and specification processes by manufacturers.

Rinnai is keen to share all information with the UK customer that potentially affects appliance and energy options. Rinnai works hard to identify any domestic or global energy related news as to encourage better customer decision making. **www.rinnaiuk.com**

EM Magazine

WHY HEAT ELECTRIFICATION IS THE KEY TO UNLOCKING 2030 NET ZERO GOALS

Stephen Horrax, Director of Energy for UK & Ireland, Ramboll

Since the Science Based Target initiative was established in 2015, over 10,000 companies around the world have committed to achieving net zero through it.

Of these companies, 71% of non-service sector firms based in the UK pledged to reduce their emissions 40-50% by 2030. With this deadline rapidly approaching, and decarbonisation not keeping pace, this commitment runs the risk of becoming a broken promise. But that raises an important question – what will the material consequences be for businesses who fail to sufficiently reduce their emissions?

On the surface, and in a climate landscape increasingly affected by geopolitical uncertainty, it's tempting to assume these missed targets can be safely swept under the rug as ambitious but ultimately unachievable. However, real risks remain for companies who miss these targets. Reputational damage, wavering investor confidence, and falling behind greener competitors are all potential dangers that ought to be taken seriously. Most importantly, decarbonisation is an increasingly core element of a company's resilience, both against the operational vulnerabilities climate change introduces, such as extreme weather and mounting carbon costs, but also against mounting regulatory scrutiny.

It is a misconception that policy is no longer encouraging companies to pursue the energy transition. Instead, government initiatives such as the UK's Modern Industrial Strategy and the EU's €1 billion Innovation Fund 25 all offer meaningful incentives and opportunities to facilitate industrial electrification. Disclosure requirements are also more stringent than ever, and a rising number of environmental law firms are finding ways to hold companies to account for arguably inadequate climate action. Companies that don't take the initiative to achieve net zero now could find themselves under uncomfortable external pressure in the future.

So, what is achievable before 2030? Early efforts to go green may have focused on small-scale, commercially viable changes, such as upgrading lighting, improving HVAC systems, and purchasing renewable energy certificates. Organisations now face a more complex and urgent challenge to meet short-term carbon targets and please investors, regulators, and the public. This will involve decisive systematic transformation and a focus on energy resilience.

ELECTRIFYING HEAT

Where companies have made progress in reducing their emissions, these have primarily been Scope 2 emissions: indirect emissions from purchased energy. The other half of the equation are Scope 1 emissions produced by a company's own processes, especially those that demand industrial heat such as drying, pasteurising, and chemical transformation. These tend to still rely heavily on fossil fuels, especially natural gas, and until this is remedied, progress on net zero will remain an uphill battle.

In light of this, electrifying heat is crucial and better yet, achievable. The answer lies in industrial heat pumps which are emerging as the most promising low carbon solution for low-temperature (<200°C) processes. Offering three to five times the efficiency of gas boilers, when powered by clean electricity they can eliminate Scope 1 emissions entirely.

This technology is revolutionary – but it cannot be integrated overnight. Delivering an industrial heat pump project can take as long as 2.5 years, an estimate which excludes grid upgrades. Organisations with 2030 targets, therefore, need to act now to assess practical considerations such as viability, costs, and integration pathways. This investment of time, money, and focus will pay off exponentially in the long run.

SYSTEMATIC SOLUTIONS

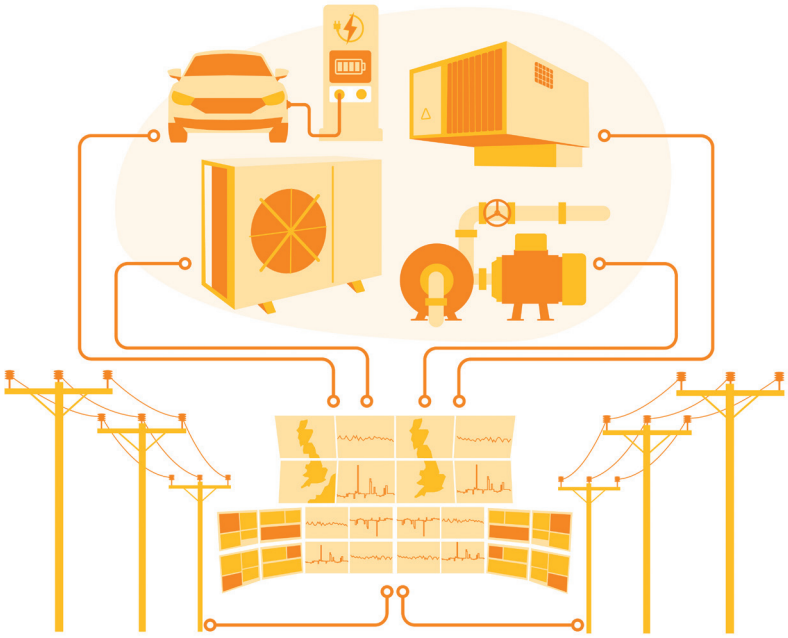
Heat decarbonisation should be the first step on a company's journey towards a sustainable future. Embedding sustainability demands a systems thinking approach that acknowledges the way in which heat, power, storage, and flexibility exist in an interconnected nexus. Addressing one whilst neglecting another can create more problems than it solves, and a successful energy transition will require considering all dependencies in tandem.

Alongside big picture changes like electrification, companies should not overlook changes to transport fleets, the technical and economical demands on energy networks, and digital opportunities to automate energy flows between energy and storage. Adopting an integrated energy strategy over a project-by-project approach not only increases energy resilience, but also financial viability, proving once again that sustainability is both a business' responsibility and in its economic interest.

Until now, many companies have measured their advance towards net zero targets in short-term wins and isolated fixes. For companies who want to meet 2030 targets, this piecemeal approach will no longer serve and must be replaced with robust, integrated strategies and coordinated efforts across engineering, finance, procurement, and operations. This is the only way to ensure long-term sustainability and resilient energy systems, as well as to avoid the reputational and financial risks of the alternative. **www.ramboll.com**

BRINGING FLEXIBILITY IN FROM THE COLD

Jamie Hillis, Flexitricity



NESO has been clear: the grid needs flexibility. And it needs industrial flexibility at scale.

Step into any cold store and you are stepping into one of the most energy intensive environments in the modern supply chain. These sites keep our food safe, stabilise global pharmaceutical logistics, and quietly underpin the UK's cold chain economy.

Quietly being the operative word.

Because while cold stores are essential, operating them is becoming anything but straightforward. Electricity prices remain volatile. Policy is evolving quickly. And the pressure to balance cost, compliance and sustainability is only increasing.

Even as we move toward Clean Power 2030, NESO is forecasting a rise in constraint events as more distributed renewable generation connects to the grid. More clean energy is a good thing. Managing when and how it is used is where it gets interesting.

Across the cold chain, the energy dilemma is clear. But so is the opportunity.

Electricity accounts for roughly 32% of operating costs, often making it the single largest overhead to manage[1]. Fixing tariffs can bring certainty, but it can also mean missing out on the upside. At the same time, cold storage sits firmly in the ESG spotlight, with impacts across Scope 1, 2 and 3 emissions.

NESO is increasingly recognising the role flexibility can play here. Shifting consumption away from carbon intensive periods is not just good for the grid. It is becoming part of how businesses demonstrate real, measurable progress.

In a world where competitive advantage comes in many forms, optimising energy use is no longer a nice to have. It is part of the job.

There are also reasons to be optimistic.

- 29% of UK cold stores now have onsite renewable energy, up from 2023. These assets are not just about generation. They open the door to smarter consumption, where businesses can align usage with output and unlock more value from what they already have.[1]
- At the same time, the industry is rethinking temperature standards. A potential shift from -18°C to -15°C might sound minor, but a 3°C adjustment is anything but. It reduces costs and creates real headroom for demand flexibility, without compromising product integrity or compliance.[1]

This is where cold stores come into their own.

Their thermal inertia allows operators to maintain temperature while shifting electrical load, something offices, factories and data centres simply cannot do.

It is a rare capability, and a valuable one for both the grid and the businesses that can harness it.

The challenge is turning that capability into something tangible. It does not have to be.

FlexGO by Flexitricity is designed to make flexibility simple. It opens up access to ad hoc flexibility markets, creating a clear route to revenue without adding operational complexity.

By intelligently adjusting when energy is used, whether to better align with renewable generation or take advantage of lower prices, businesses can reduce costs and unlock new income streams.

With the right monitoring and control in place, cold stores can safely reduce load at the right moments, supporting the grid and generating revenue, all without compromising product safety.

It is a practical way to turn flexibility into something tangible. And importantly, it aligns with emerging policy and supports credible ESG reporting.

Flexibility is not a disruption. It is an upgrade.

With FlexGO, businesses can:

- Earn new revenue
- Reduce costs without changing how they operate day to day
- Strengthen ESG performance and move closer to Net Zero

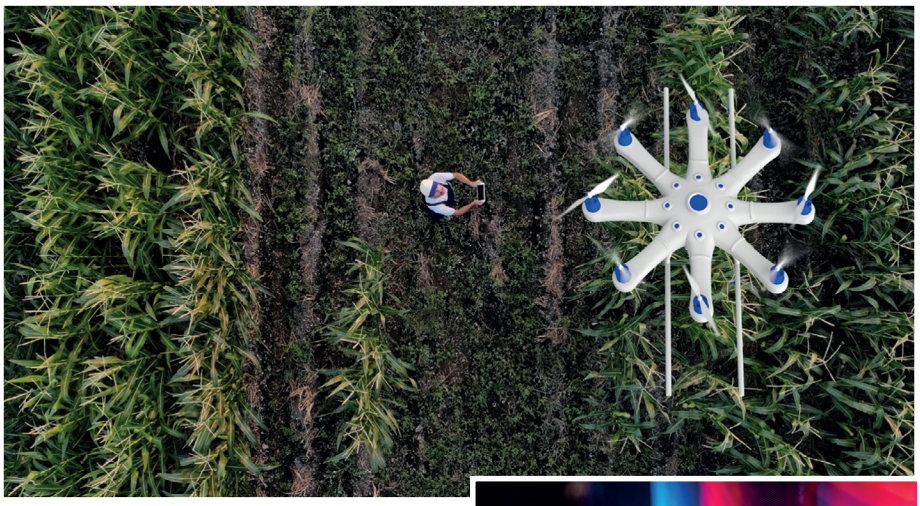
If flexibility has felt theoretical until now, this is where it becomes real.

Learn more at **FlexGO.energy**.

www.flexitricity.com

1 Cold Chain report 2026

BEYOND MONITORING: WHY ENERGY STRATEGY NEEDS A DIGITAL RETHINK



EXECUTIVE SUMMARY:

Many estates teams still manage energy reactively through manual processes, even as rising financial, operational and sustainability pressures demand smarter, faster decision-making. Platforms like E.ON Optimum provide the clarity and connected insight estates need by turning complex data into actionable intelligence across multiple sites. This gives teams the confidence to focus resources effectively and maintain critical operations. With the right digital tools, energy becomes something organisations can proactively shape, enabling earlier detection, smarter management and a more resilient future.

For many estates teams, energy management still means spreadsheets, static PDFs and monthly bill checks – important but largely reactive tasks. As pressure on public and commercial estates increases, organisations need to act faster to control costs. Energy now underpins wider priorities such as financial stability, operational resilience and sustainability. Despite this, many teams still lack a clear link between energy use and these broader outcomes.

This gap isn't due to a lack of effort. Most estates teams are juggling ageing infrastructure, limited resources and competing expectations. They're asked to reduce costs, cut carbon and provide clearer insights with less time. As a result, energy often becomes a background task: important but not urgent until something goes wrong.

Driven by the rapid digital transformation, a new mindset is taking shape across the sector. Energy is increasingly viewed not just as an overhead, but as a strategic operational asset, one that can unlock resilience, efficiency and measurable value when supported by advanced analytics and modern technology. In certain cases, energy can even become a revenue stream for businesses.

Organisations are beginning to recognise that the way energy behaves across an estate can reveal much more than consumption trends. It can uncover failing equipment before it breaks. It can highlight inefficiencies invisible to the human eye. It can show where budgets will come under pressure months before invoices arrive. And when managed proactively, it can even unlock breathing room for teams who are stretched thin.

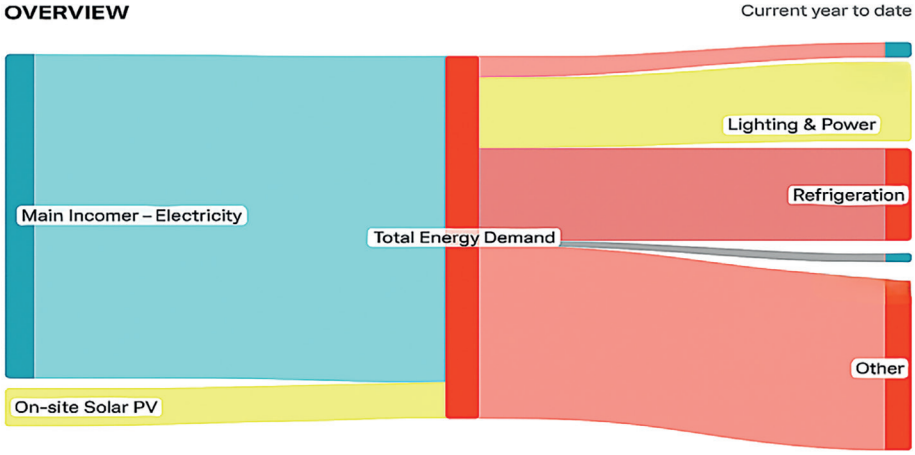
To do this, estates need more than data. They need clarity and connection – the ability to join the dots between systems, sites and outcomes. This is where digital platforms like E.ON Optimum are shifting expectations. Rather than simply showing usage, they make energy understandable, comparable and actionable across entire estates. They reshape data into insight by combining energy data with business indicators to provide context and help turn insights into actionable decisions with measurable outcomes.

Most importantly, they bring confidence. For a local authority managing dozens of ageing buildings, confidence means knowing where to focus limited resources. For a logistics operator, it means preventing energy related interruptions that impact throughput. For a healthcare or emergency services estate, it means ensuring critical environments stay operational, efficient and cost controlled. But what could it mean for your business? Are there metrics that would provide context for your energy data?

Energy will always be complex. But with the right digital intelligence, it becomes something that organisations can shape and benefit from, not just respond to. As estates face increasing uncertainty, the real opportunity lies not in monitoring more closely, but in managing smarter, detecting earlier and actioning with clearer purpose.

Platforms like Optimum aren't just improving energy visibility; they're enabling a more resilient, more strategic future for businesses like yours.

If you're ready to rethink what energy management can deliver for your estate, simply scan the QR code to begin the conversation.



POWERFUL PARTNERSHIPS FOR ENERGY SECURITY IN THE PUBLIC SECTOR

Adriana Ziemianek, energy and carbon analyst Salix

The recent global energy shock from rising oil and gas prices has certainly placed a recent emphasis and a greater appetite for self-sufficiency and energy sovereignty. Since electricity is priced through the wholesale market, it is closely linked to fluctuations and therefore prone to absorbing impact from the spike in gas prices. This creates a challenging environment for the UK – particularly as decarbonisation targets must be met to achieve the national net zero goal by 2050.

The UK Government predicts that a sizeable portion contributing to this transition will be attributed to 70% of electricity being generated from renewable sources by 2030. For public sector buildings, where energy demand is high as well as being an unavoidable operational cost, the need for renewable energy generating assets is a crucial necessity.

At Salix, we are working with public sector organisations across the UK to support them in the energy transition and we're pleased to be working with governments to achieve this. My job is to monitor data and help drive progress alongside a dynamic team.

In the UK, efforts to improve energy security and expand renewable generation have led to increased funding for technologies such as solar PV, while also improving access to these systems for public sector organisations.

Earlier this year, the Scottish Government announced a funding boost of up to £2 million for solar PV projects. At Salix we have been able to allocate the funds to public sector clients who applied for the Scotland Solar Energy Efficiency Loan Scheme.

This has enabled successful applicants to install their solar PV and improve their resilience by importing less electricity from the grid through increased on-site generation. In doing so, these buildings are better positioned to manage their exposure to volatile energy prices and take greater control over their long-term energy supply.

While many public sector buildings often utilise their large rooftops to support a sufficient PV array, organisations with larger estates such as universities may have the spatial capacity to invest in ground-mounted solar farms and distribute their own generated electricity to multiple buildings locally through a private wire network. In the past, at Salix we have supported projects focusing on maximising self-consumption across the site, such as Neath Port Talbot Council's campus-style microgrid between its Service Response Centre and nearby Salt Barn in Wales. This approach to installing renewable sources of energy can provide many benefits. Public sector buildings on the same site with a more integrated, locally controlled energy system can not only include sites where roof-mounted solar PV is not feasible but also be able to avoid network constraints as grid connection capacity becomes a growing issue and poses a risk to energy security.

However, energy sovereignty is not just about generating electricity – it is also important to be able to use it when it is needed. Some sites might find that the annual generation yield may sometimes be greater than the building's energy demand. In these cases, battery storage becomes essential in optimising the system so that electricity can be stored and used later rather than be exported back to the grid or not used and lost locally on-site.

Through Scotland's Recycling Fund, Salix has supported the University of St Andrews with the funding for a battery storage system to minimise imported energy for their 1MW solar farm. While the benefits of installing this technology are impactful, the capital cost of storage technologies can pose a barrier to integrating storage facilities within the system. This is a challenge the public sector must meet.

This is where partnership-led funding models become appealing, enabling the public sector to install solar PV and battery storage through using a blended finance approach.

In recent months, we have collaborated with Welsh Government and Welsh Government Energy Service (WGES) to deliver a joint loan and grant scheme as part of the Ymestyn programme to fund solar PV and battery storage. This is in collaboration with Great British Energy. This partnership has allowed up to £9 million of funding to be allocated to Welsh public sector bodies. For example, it has focused on funding renewable energy projects for various primary schools including 13 Newport City Council schools. The application process was streamlined to allow applicants to gain approval and access different funding streams for the installation of their solar PV and battery storage for quicker approval.

From the joint loan and grant programme of Ymestyn and the Wales Funding Programme (WFP), public sector applicants were able to maximise their funding profile and spend to strengthen the energy security of their assets and invest in their net zero strategy across their estate. It means that similar partnerships can function as an enabler in achieving energy security across the public sector more efficiently by granting access to finance to lessen the burden of up-front costs.

Energy sovereignty is therefore not a siloed function achieved solely through the installation of one technology. Within the public sector, partnerships can play an important enabling role in the improved financial accessibility to renewable technologies as well as better system optimisation. When applied effectively, this enables solar PV, battery storage and private wire networks to be more likely to deliver their full value when they are supported by funding and delivery methods that make renewable project installation pathways sustainable in achieving long-term energy security.

At Salix, we work every day alongside public sector and housing organisations across the UK to tackle pressing energy challenges. While complex, real progress is being made and it's driven by collaboration, shared innovation and a clear, ambitious vision for the future. **www.salixfinance.co.uk**

NO BLOWN FUSES AT FAIRY-TALE DALHOUSIE CASTLE: FOUR PEL113S CONFIRM HEATING CAPACITY

Elliot Ajose, Regional Sales and Technical Manager, Chauvin Arnoux UK

Dalhousie Castle Hotel and Spa recently faced a critical infrastructure question. They didn't know whether there was sufficient headroom on the main incoming supply fuse to safely install 40 electric radiators and electric heated towel rails throughout the property.

The risk was significant. Any miscalculation could overload the incoming supply and compromise guest experience. Concerned that proceeding with the upgrade could jeopardise the hotel and spa's day-to-day operations, the management team reached out to Alan Chan (electrical specialist).

SITE OVERVIEW

Dalhousie Castle is just eight miles south of Edinburgh city centre in Scotland. This 13th-century fortress is widely regarded as Scotland's oldest continuously inhabited castle. It operates today as a hotel with 35 individually en-suite bedrooms and five function rooms/conference suites. On some occasions, it runs at full capacity, making it more important to determine whether the existing electrical capacity is sufficient for guest rooms, functions, and hotel operations.

THE CHALLENGE

The incoming supply was fused at 400 amps per phase and had been operating without issue for years. However, the hotel and spa had no visibility of their actual current consumption. That's why they were uncertain about how much of the existing capacity was already in use.

The additional load from the proposed upgrade was considerable: 35 bedrooms at 1.5 kW each, 35 en-suite heated towel rails at 500 W each, five conference and function room radiators at 1.5 kW each, and a new commercial kitchen. This was a combined additional load of approximately 86.5 kW.

HOW THE CHALLENGE WAS ADDRESSED

Alan contacted Chauvin Arnoux UK to obtain four PEL113 Power and Energy Loggers for deployment across the site. As only current consumption needed to be logged, no voltage connections or exposure to live circuits was required.

Installation was straightforward. Flexible current sensors were looped around the meter tails, with one logger at the main incoming supply and the other three at downstream consumer units.

The loggers were set up on site for one week before retrieval. Data was downloaded to the PEL Transfer software. Five-minute aggregated readings from the main supply showed peak currents of 173A on L1, 142A on L2, and 157A on L3.

With the incoming supply rated at 400A per phase, the maximum recorded demand was well below half the fuse rating.

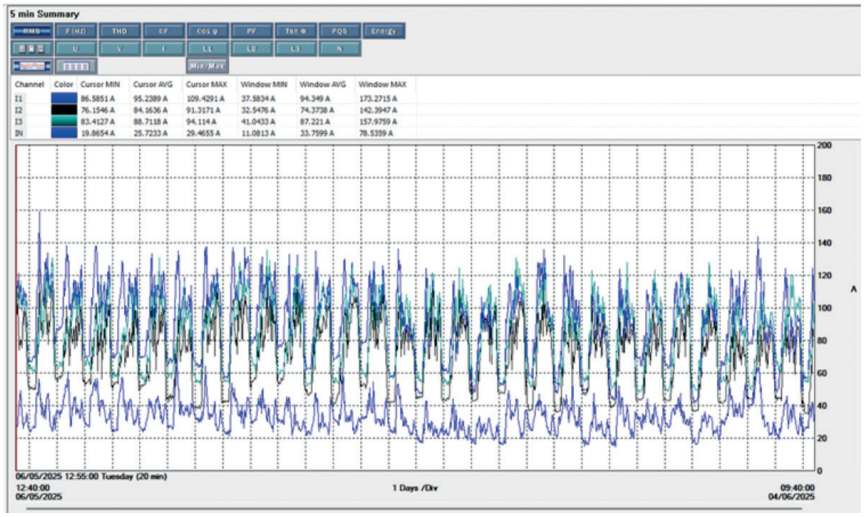
THE SOLUTION

Armed with a seven-day current log obtained from the four PEL113 power and energy loggers, Alan confirmed that the existing incoming supply had more than enough headroom to accommodate a new electric heating system across

all 35 bedrooms, along with heated towel rails in every en-suite bathroom.

He provided the data as evidence. This meant that the Distribution Network Operator (DNO) did not require an upgrade to the supply. This also helped the hotel avoid a costly and disruptive intervention and allowed the project to move forward with minimal impact on hotel operations.

This is one of many cases where power and energy loggers prove their value in load expansion projects. Whether measuring maximum demand, identifying voltage excursions, investigating harmonics, or assessing other supply parameters, Chauvin Arnoux PELs provide reliable data to support informed, cost-effective decisions. They also deliver accurate measurements, giving engineers and clients the confidence to move ahead. **https://cauk.net/products-power-quality-and-energy-loggers/**



Improving energy performance, without major CapEx.

Improving energy performance across high-density, multi-occupancy residential portfolios has become increasingly challenging as energy costs remain volatile. For owners, investors and asset managers, rising utility expenditure directly affects profitability, asset value and long-term portfolio resilience. While traditional approaches such as deep retrofits or full building management system (BMS) replacements can deliver meaningful savings, they are often capital intensive, disruptive to residents and slow to generate return on investment. As a result, there is growing interest in lower-cost, faster-to-deploy alternatives that deliver measurable outcomes without major capital expenditure.

MONITORING IS MORE VALUABLE WITH INTEGRATED AUTOMATED CONTROL

Data-driven energy management and control platforms are emerging as a practical solution. By enabling real-time monitoring of heating systems, energy meters, and water usage, these systems provide continuous visibility into building performance. This level of insight allows energy managers to identify and control inefficiencies such as poor heat distribution, underperforming plant or abnormal consumption patterns before they escalate into costly issues or tenant dissatisfaction. Automated alerts highlight consumption spikes at room level, supporting targeted intervention and more proactive maintenance strategies. While automated control saves time.

OPERATIONAL EFFICIENCY ISN'T IMPROVED BY RELYING ON HUMAN INTERVENTION

Physically turning energy input on and off is key to real savings. If this is automated, then the savings go beyond utility costs alone. The need for people to react and respond to flags from 'monitoring only systems' is removed, enabling them to concentrate on higher level, more productive tasks.

Unlike traditional BMS upgrades, which often require extensive rewiring, hardware replacement and system downtime, modern retrofit solutions integrate with existing infrastructure. This significantly reduces installation costs and disruption, while accelerating payback periods. Intelligent monitoring platforms can consolidate multiple data streams into a single interface, enabling anomalies to be detected quickly and automated response to happen in real time. Automated analytics that trigger control adjustments, improve system efficiency without manual input.

BUILDING SERVICES PERFORMANCE INCREASES ASSET VALUE

The financial implications are substantial. Improved energy performance reduces operating costs and contributes directly to Net Operating Income (NOI), helping to protect yields in a market where margins are under pressure. At the same time, efficient, well-managed buildings are more attractive to both tenants and investors, particularly as sustainability considerations become central to decision-making. Access to accurate, real-time consumption data also provides a robust evidence base to support investment decisions and demonstrate performance improvements.

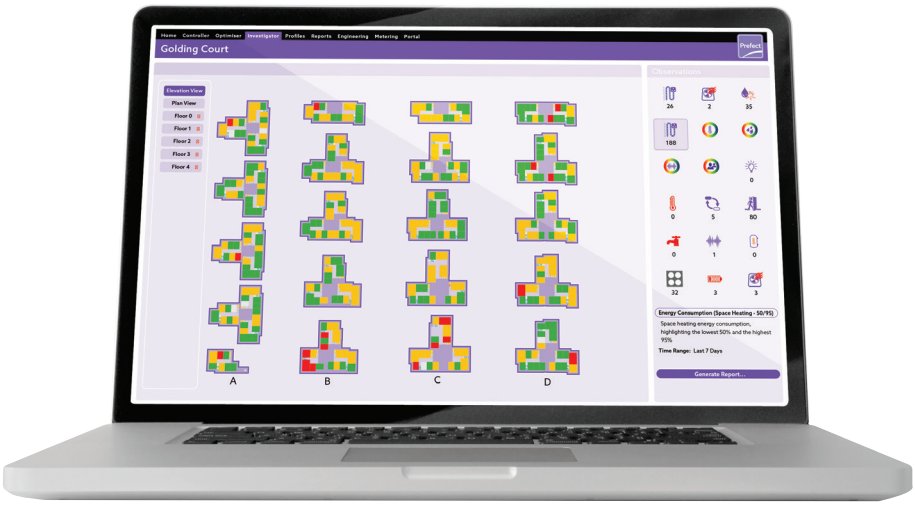
HAPPIER RESIDENTS, AND MORE SATISFIED ASSET MANAGERS AND INVESTORS

For operators of purpose-built student accommodation (PBSA) and build-to-rent (BTR) assets, maintaining consistent comfort levels is critical. Real-time monitoring enables more precise control of heating and utilities, reducing complaints and improving resident satisfaction. It also allows for better forecasting of demand, more efficient maintenance planning and the elimination of unnecessary energy use, ensuring that cost savings do not come at the expense of service quality.

Sustainability is another key driver. Increasing regulatory pressure and investor scrutiny mean that asset managers must be able to demonstrate measurable progress towards net-zero and ESG targets. Data-led platforms provide the granular, auditable information required for credible reporting, helping organisations track emissions, manage consumption and identify further opportunities for carbon and water reduction.

THE PANACEA – RESIDENT COMFORT, OPERATIONAL EFFICIENCY AND INCREASED ASSET VALUE

Ultimately, smart energy management offers a scalable, cost-effective route to improving building performance. With real-time data and intelligent controls, stakeholders can enhance operational efficiency, protect asset value and support sustainability objectives without the need for major capital investment. In an environment defined by rising costs and tightening regulation, this approach is becoming essential to keeping residential portfolios competitive and future ready. **www.prefectcontrols.com**



Irus provides complete site overview, highlights high energy use, supplementary heaters, occupancy levels, noise/light/humidity issues etc. and most importantly acts automatically to mitigate issues.

THE SMART ROAD TO NET ZERO:
HOW DATA-DRIVEN MONITORING CAN UNLOCK CARBON REDUCTION IN BUILDINGS

Ashley Avery (Partner) and Isabelle Clement (Managing Associate) at Foot Anstey LLP

As the UK accelerates toward its net zero carbon commitments, the public sector faces pressure to improve the environmental performance of its buildings. Local authorities, housing providers, NHS Trusts and educational institutions manage large property portfolios. The global commitment to net zero carbon emissions by 2050 requires significant cuts in carbon emissions. With public buildings responsible for significant operational emissions, improving energy efficiency is no longer optional: it is essential to meeting climate targets and manage escalating energy costs.

Achieving net zero will require more than investment in low-carbon technologies. It also demands a deeper understanding of how buildings are used, how systems perform on a day-to-day basis and how occupants interact with the spaces around them. Increasingly, monitoring technologies (ranging from simple sensors to complex building-management platforms) are providing organisations with the data they need to drive smarter, more sustainable decisions. However, data collection and processing must comply with data protection law to ensure trust and maximise sustainability gains.

HOW MONITORING BEHAVIOUR DRIVES NET ZERO

Technical upgrades alone cannot unlock the full carbon reduction potential of homes and buildings. Many facilities operate long hours, serve varied users and rely on outdated systems, meaning inefficiencies can persist unnoticed. Data-driven monitoring offers a powerful way to address these challenges.

When implemented responsibly it enables organisations to identify inefficiencies and operational patterns. Smart meters, occupancy sensors and environmental monitors can reveal high-impact behaviours, such as unnecessary heating of unused spaces, excessive electricity use during off-peak hours or poor ventilation practices. Understanding these patterns allows institutions to design targeted interventions, adjust system settings or communicate more effectively with building occupants.

It also allows organisations to optimise building performance in real time. Modern building management systems can automatically adjust heating, cooling and lighting based on realtime demand. This ensures energy is not wasted on empty rooms or underused spaces, generating emissions savings and operational efficiencies.

Data-driven approaches also support integration of renewable technologies and inform retrofit priorities. As homes and public buildings increasingly install solar panels and batteries, monitoring energy consumption and production further helps balance supply and demand, maximising the use of clean energy and minimising reliance on fossil-fuel-based grid power.

Detailed performance data helps identify where improvements will have the greatest impact across large estates. This ensures retrofit budgets, are directed to where they matter most. The UK's Social Housing Decarbonisation Fund supports retrofits combined with smart monitoring technology in social housing. Housing providers collect usage data (with tenant consent) to inform interventions, detect faults early, and engage tenants through energy dashboards, thereby contributing to measurable emission reductions aligned with the UK's net zero targets.

Providing occupants with accessible dashboards or tailored feedback can also encourage behavioural changes. In homes, tenants may adjust heating or ventilation habits; in offices and schools, staff and students can become more conscious of energy use.

DATA COMPLIANCE: A PREREQUISITE FOR TRUST AND EFFECTIVE IMPLEMENTATION

With increased monitoring comes increased responsibility. Housing providers and public bodies handle volumes of personal data and must uphold the highest standards of data protection, legally and ethically. Poor practices risk undermining public trust, which is critical for successful implementation of sustainability initiatives.

To comply with the UK GDPR and build confidence among occupants, providers should adopt strong datagovernance principles such as providing transparent and meaningful privacy notices to ensure occupants understand the data being collected, the purpose behind the monitoring and how the information will be used. Clear, accessible communication is essential for building trust, as is only collecting data that is strictly necessary for monitoring and energy efficiency purposes. Avoiding unnecessary or intrusive data collection protects privacy and reduces risk.

Strong security controls are another non-negotiable: encryption, access controls and secure storage systems all help safeguard personal information from misuse or breaches. Before introducing monitoring technologies, organisations should conduct Data Protection Impact Assessments (DPIAs) to identify risks and implement appropriate safeguards.

CONCLUSION

The path to net zero across the public sector is challenging and requires both technological innovation and cultural change. Monitoring technologies offer powerful opportunities to enhance efficiency and reduce carbon emissions. However, these benefits can only be realised when paired with transparent, proportionate and ethical data practices.

Trust is fundamental. When occupants clearly understand how their information is used, and how monitoring supports more comfortable spaces, lower energy bills and national climate goals, they are more likely to engage positively. Integrating smart monitoring with robust data governance provides a responsible, future-proof approach to sustainability, enabling public sector organisations to meet net zero ambitions while maintaining the confidence of the communities they serve. **www.footanstey.com**

HOW A BROADER VIEW OF ONSITE GENERATION MAXIMISES VALUE

Simone Hindmarch, MD and Co-founder, Commercial

For many organisations, onsite solar power generation is primarily seen as a way to reduce energy bills and demonstrate progress towards net zero. Energy price volatility and sustainability expectations are powerful drivers, and success is often measured in terms of cost and carbon savings. Yet a more holistic view is needed to fully assess lifetime costs and maximise value.

SET UP A COMPLETE BUSINESS CASE

Solar generation aligns well with commercial energy demands, since output peaks during daylight hours when business operations tend to be most active. This contributes to return on investment, which is often achieved within five years and sometimes in as little as three. Even partial onsite generation, covering a percentage of overall energy use, reduces exposure to wholesale markets, helping to stabilise costs.

However, focusing solely on payback risks overlooking opportunities to extend value. Greater returns are often realised when onsite generation is considered as part of a wider system that reflects how energy is used and managed over time.

Storage is the logical next step for onsite generation, turning it into a more controllable, strategic business asset. This enables organisations to manage peak demand, maintain continuity during outages, and make more efficient use of the energy they generate. In this way, onsite generation shifts from a passive source of energy to an actively managed resource.

Organisations that invest in onsite generation and storage are better insulated from market volatility and sudden price increases. Recent market shocks caused by geopolitical instability reinforce the business case for reduced dependency on wholesale markets. They also illustrate the potential cost of inaction.

UNDERSTAND THE BIGGER SUSTAINABILITY PICTURE

A broader perspective on sustainability is important to enable full assessment of the environmental impacts and benefits of onsite generation.

Behind every solar panel sits a global supply chain, and for key materials such as polysilicon and aluminium this presents complex concerns. The embodied carbon of solar infrastructure – emissions associated with manufacture and transportation before panels are operational – demands careful analysis. These materials are produced through energy-intensive processes which are generally offset over time but need to be properly accounted for. What's more, they are often sourced from geographical regions associated with ethical concerns around labour practices.

These factors do not diminish the overall value of solar generation, but they do impact how organisations should approach it. Informed decision making, active risk management, and careful oversight are required.

In practice, this involves placing greater emphasis on transparency, due diligence, and active supplier engagement. Focused Supplier Relationship Management alongside use of recognised assessment frameworks such as EcoVadis can help improve supply chain visibility and provide a more informed basis for decision making.

Materials used in solar panels are just one part of a sustainability equation which encompasses the entire lifecycle of solar infrastructure. Arrays are expected to operate for decades, and their long-term impact depends on how they are maintained, optimised, and eventually decommissioned. Effective management of ongoing performance, as well as end-of-life recovery and recycling, is critical. Increasingly, organisations are expected to demonstrate more than carbon reduction – onsite generation needs to be firmly aligned with overall ESG commitments.

TAKE A STRUCTURED APPROACH

Viewing onsite generation as part of a broader system brings greater clarity around how energy is used, where cost-benefits can be realised, and what sustainability looks like. When it's approached strategically and methodically, better outcomes can be realised over time.

Establishing demand profiles is a good place to start. If you understand when and where energy is consumed, generation and storage parameters can be configured more effectively to deliver tangible value. This forms a foundation for assessing how onsite generation fits within the wider energy strategy. Factors such as storage and the management of peak demand can make a significant difference to the overall impact that onsite generation has on energy use and performance.

Governance and full lifecycle thinking should be built in from the outset. This includes establishing clear approaches for supplier oversight, monitoring performance, and planning for maintenance and end-of-life management. Early consideration of these matters helps ensure systems deliver against financial and sustainability objectives for the duration of their lifetime.

RETHINKING THE ROLE OF ONSITE GENERATION

An effective onsite generation strategy involves looking beyond the immediate benefits of lower bills and reduced emissions. Approaching it more strategically, paying attention to integration, supply chains, and lifecycle performance, can unlock greater long-term value.

Handled in a purposeful way, onsite generation becomes a powerful tool for managing risk and improving predictability around energy costs and supply. It also enables organisations to better understand and substantiate the full sustainability benefits of their investment. In an increasingly uncertain energy landscape, onsite generation can boost resilience and support more informed, future-ready decision making. **https://commercial.co.uk/**

FREE COOLING FROM WASTE HEAT: THE BREAKTHROUGH DATA CENTRES CAN'T AFFORD TO IGNORE

*What if, for half, or even more, of the energy you need to cool your on-site generation data centre, you needed almost **no electricity at all**?*

Mihir Nandkeolyar, Director Business Development Global Data Centre Solutions at Johnson Controls

It sounds like wishful thinking, but it's exactly the kind of breakthrough already possible with absorption chillers, which turn waste heat into cooling power. That kind of dreaming, and doing, is becoming essential as the AI era slams data centers into a very real physical constraint: the electric grid.

Across major markets, operators are facing delayed connections, caps on available power, rising energy prices and mounting uncertainty around future capacity. This tightening grid landscape is fundamentally reshaping how data centres plan, build and scale. As a result, onsite power is rapidly shifting from optional to integral. By 2030, some forecasts suggest that roughly a third of data centres will operate fully onsite-powered campuses. And here's the opportunity hiding in plain sight: when generating power onsite, only 35–50% of fuel becomes electricity, the rest becomes high temperature thermal energy. Instead of wasting it, that heat can be harnessed to drive cooling "for free."

The question is no longer just how to cool, but how to do it without adding further strain to an already overburdened grid.

COOLING POWERED BY HEAT, NOT THE GRID

One pivotal approach is the application of absorption chillers to create a Combined Cooling and Power (CCP) plant. These plants recover otherwise wasted energy from gas turbines, fuel cells or engine-driven generators to power the thermally driven chiller to produce cooling.

Absorption chillers are not new; Johnson Controls deployed YORK absorption systems over a century ago and today have many thousands in operation worldwide. Their use has been common where thermal energy is more easily or economically available than electricity. Today's absorption chillers represent a major leap forward in cooling innovation, enhancing reliability and sustainable performance. Modern systems are engineered to maintain optimal operating conditions with ease, ensuring smooth, uninterrupted cooling even in demanding environments. By harnessing a combination of varying grades of waste heat as their energy source, next generation absorption chillers provide a powerful and sustainable alternative to traditional electric cooling, cutting energy and water use, reducing emissions, and helping organisations move toward a cleaner, more efficient future.

For this reason, their application at large data centres where vast amounts of high temperature waste heat is abundantly and economically available from onsite generation sources – is ideal. They also deliver significant energy efficiency benefits: for every 2 MW of cooling supplied, an absorption chiller needs only 20 - 25 kW of electrical input compared to 500 kW or more for an electric chiller. That's more than an 90% reduction in needed electricity.

Absorption chillers use waste heat as the driving force for cooling, replacing the mechanical compressor found in traditional refrigeration systems with a thermally driven process. In these systems, the shifting concentration of the absorbent solution is both a powering mechanism and a heat transfer mechanism. Through a coordinated sequence of evaporation, absorption, generation, and condensation – each governed by changes in temperature and pressure – the refrigerant and absorbent circulate to produce chilled water.

Absorption chillers can be easily combined with other thermal management technologies if additional cooling demand is needed.

DATA CENTRES OVER THE NEXT DECADE

Moving forward, data centres will not be defined by raw compute power alone, they will be defined by how intelligently they utilise energy, heat and water. Efficient cooling is quickly becoming an enabler for competitiveness in an increasingly constrained environment. Absorption chillers are reshaping what is possible in real time at onsite-powered data centres.

While some operators will remain stuck with long grid connection delays and rising energy costs, those operators that turn waste heat from a costly by-product into a strategic resource gain a significant edge, becoming more efficient, resilient, and sustainable while delivering greater benefits to their communities.

By turning waste heat from a costly by-product into a strategic resource, operators can become more efficient, resilient, sustainable and positively impact their communities.

https://www.johnsoncontrols.com/

SKILLS SHORTAGES AFFECTING THE UK & GLOBAL HVAC MARKET

Rinnai's Operations Director Chris Goggin revisits the skills shortage problem that is permeating throughout the UK and international HVAC industry. This article will look at the root causes and what action the UK government is implementing as a solution.

For information on UK policy, energy trends: **www.rinnai-uk.co.uk/contact-us/newsletter-sign**

One of the primary long-term issues affecting the UK HVAC industry is a skills shortage in the arena of low carbon technology installation. What are the reasons behind this global problem and what are the solutions?

A global skills shortage in the HVAC industry is driven by three key issues. An ageing demographic of workforce; a reluctance by both customers and HVAC engineers to adopt new renewable technologies; and a lack of state sponsored financial assistance for training & education that passes on skills in renewable technology installations.

The following article will present fact-based evidence that supports these observations. Figures released by the major manufacturer Wavin indicate that 50% of UK qualified HVAC installers worked on heat pumps installations during the first quarter of 2025. In the first quarter of 2024 the figure was at 60%, highlighting a sizeable loss.

Wavin contacted hundreds of installers across Europe to identify the progress being made in adapting to renewable technologies such as heat pumps and solar. Wavin's research in the UK reveals that four out of ten installers are not up to speed with the latest developments in environmental legislation. UK HVAC professional awareness surrounding legislation is not the only area of concern regarding Net Zero objectives.

Eight out of 10 German HVAC installers are fully qualified to work on heat pumps, where the UK number is five out of ten. The UK is also underprepared in offering attractive manufacturer and customer incentives that encourage the production, purchase and wider acceptance of technology that uses sustainable energy resources.

Currently 27% of UK consumers view clean energy technology as a viable and affordable solution for providing heating and hot water. Europe's leading nation in domestic customer renewable acceptance, The Netherlands, saw 55% of customers demand clean and alternative DHW and heating methods. Only 6% of UK customers actively seek out sustainable energy solutions.

UK trades supplier City Plumbing has produced a survey of five hundred contractors which sought to produce data on the progress of UK installers adopting renewable technologies. One of the report's observations show that slow UK consumer demand for clean energy technology is cited as a potential cause of installers remaining reluctant to widen their skills set.

Of all those surveyed, 24% of UK installers said that they did not feel that learning new skills relating to the installation of heat pumps was a vital necessity, solely due to a lack of sustained customer demand. A further 20% of those responding believed that renewable upskilling was not an option as retirement is soon approaching.

A 2023 UK government survey "The Heating and Cooling Installer Study" released data that stated two thirds of installers were over the age of 45 years old. The ageing demographic of UK installers and a lack of widespread customer renewable demand are two issues that have combined to heighten the problem of a skills shortage in the UK HVAC industry.

City Plumbing's report has also revealed that 73% of respondents believe there are not enough qualified heat pump installers to meet government targets of 600,000 heat pump installations a year by 2028. To establish some perspective – last year 60,000 heat pumps were installed across the UK. In 2021 the number of heat pumps installed across the UK was 55,000.

Additionally, 85% of respondents also feel that there is not enough state provided financial assistance for upskilling towards low carbon technologies.

UK government officials have recognised the importance of investing in the low carbon installation workforce and has recently announced "The Warm Homes Skills Programme," and "Heat Training Grant."

These new initiatives supply UK installers with funding contributions or discounts towards training that provides the requisite skills to install renewable technologies like heat pumps and solar.

The £8 million "Warm Homes Skills Programme" will supply each UK installer with subsidised training in relation to retrofitting, insulation and solar panel installation training.

The "Heat Training Grant" issues applicants with a £500 discount on courses that provide heat pump and heat network training. This scheme will be running until March 2026.

The UK government also announced earlier this year a £3 billion investment

into areas like construction and engineering as part of the current government's "Plan for Change" strategy. This investment is aimed towards attracting younger applicants to trades required in the labour force.

Dr Anastasia Mylona, CIBSE Technical Director, commented: "This is a welcome and much-needed investment in our workforce. The building services sector is at the forefront of delivering safe, efficient, and sustainable environments – and that relies on a pipeline of skilled professionals. By strengthening training provision and attracting young people into engineering, we can not only address current shortages but also drive long-term innovation and resilience in the built environment."

Other notable economies that possess identical issues include Germany. According to statistics released by the BDEW – the German Association of Energy and Water Industries - 73% of German companies believe the skills shortage is due to a change in demographic (age).

A potential repercussion of an ageing labour demographic could affect the momentum of a German domestic energy transition, as 85% of companies assume that progress in the energy transition will be negatively affected because of the skills shortage.

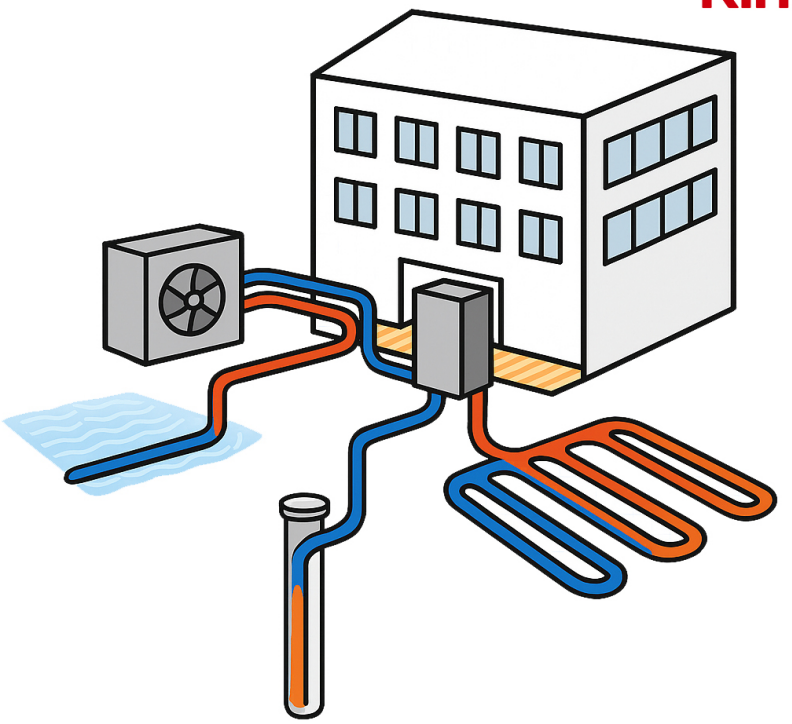
The American HVAC industry also suffers from a symmetrical skills shortage issue. There are currently 110,000 unfilled US HVAC positions nationwide, whilst around 25,000 workers exit the workforce a year. It has been predicted that the US HVAC market could have 225,000 vacant positions inside the next five years.

Again, an ageing demographic of technicians is a huge factor in the US HVAC skills shortage. National trade association the Air Conditioning Contractors of America (ACCA) estimate an average age of fifty-five as an American HVAC worker. Due to the unusual political climate of America and the current administrations preference towards fossil fuels the US HVAC industry is struggling to create a clear pathway of future direction.

If there are widespread international vacancies in the HVAC sector, are large jobs not being finished or even started due to a chronic skills shortage? Will a global shortage of HVAC engineers result in a collective economic stagnation in the industry?

Rinnai evaluates all news and policy updates relating to DHW, heating, and HVAC in both the UK and abroad. Any information which could affect product or energy options will be transparently shared with the specifier, contractor installer, and UK customer. **https://www.rinnai-uk.co.uk/contact-us/ask-us-question**

Rinnai



Rinnai offers clear pathways to lower carbon and decarbonisation plus customer cost reductions for commercial, domestic and off-grid heating & hot water delivery

Rinnai's range of decarbonising products – H1/H2/H3 – consists of hot water heating units in gas/BioLPG/DME, hydrogen ready units, electric instantaneous hot water heaters, electric storage cylinders and buffer vessels, a comprehensive range of heat pumps, solar, hydrogen-ready or natural gas in any configuration of hybrid formats for either residential or commercial applications. Rinnai's H1/2/3 range of products and systems offer contractors, consultants, and end users a range of efficient, robust, and affordable low carbon/decarbonising appliances which create practical, economic, and technically feasible solutions.

- Rinnai is a world leading manufacturer of hot water heaters and produces over two million units a year, operating on each of the five continents. The brand has gained an established reputation for producing products that offer high performance, cost efficiency and extended working lives.
- Rinnai products are UKCA certified, A-rated water efficiency, accessed through multiple fuel options and are available for purchase 24/7, 365 days a year. Any unit can be delivered to any UK site within 24 hours.
- Rinnai offer carbon and cost comparison services that will calculate financial and carbon savings made when investing in a Rinnai system. Rinnai also provide a system design service that will suggest an appropriate system for the property in question.
- Rinnai offer comprehensive training courses and technical support in all aspects of the water heating industry including detailed CPD's.
- The Rinnai range covers all forms of fuels and appliances currently available – electric, gas, hydrogen, BioLPG, DME solar thermal, low GWP heat pumps and electric water heaters More information can be found on Rinnai's website and its "Help Me Choose" webpage.

For more information on the RINNAI product range visit **www.rinnai-uk.co.uk**

WILL BATTERY STORAGE SOON SURPASS SOLAR?

David Sheldrake, CRO, POWWR

For more than a decade, solar energy has dominated the UK public sector's clean energy conversation. Supported by early subsidies, falling costs, and rising concern over climate change, rooftop solar panels have become a visible symbol of decarbonisation.

However, a quieter but potentially more game-changing eco technology is now emerging. Battery storage is moving rapidly from a niche add-on to a standalone energy investment that could reshape how the public sector consumes, stores, and interacts with electricity.

As energy price volatility persists, grid constraints tighten, and desire for greater control over bills and resilience, I see no reason for this trend to show any signs of slowing.

BATTERIES ARE UNIQUELY POSITIONED

The UK grid is under mounting pressure. Electricity demand is rapidly increasing as transport and heating goes electric, and a whole host of super-sized data centres to power the transition to artificial intelligence come online. At the same time, the generation mix is becoming increasingly dependent on variable renewables. In fact, over the past year, approximately 40% of the UK's energy came from renewable sources.

Because of this, pricing models are shifting. While most public sector organisations remain on flat rate tariffs, flexible time of use (ToU) pricing are becoming more popular, buoyed by enhanced smart meter rollout and Market-wide Half-Hourly Settlement (MHHS).

This matters because flexibility – rather than generation alone – is set to become one of the most valuable assets of our energy ecosystem. Batteries are uniquely positioned to monetise that flexibility.

AN ACCELERATING TREND

A battery storage system allows public sector organisations to buy electricity when it is cheap and use or export it when it is expensive. This price arbitrage is increasingly attractive as peak to off peak spreads widen.

Crucially, batteries do not require solar panels to be economically viable. Battery only installations can charge overnight on low cost tariffs and discharge during the evening peak. This is a critical distinction from solar, which depends on roof suitability, export conditions, and the sun to shine.

Modern lithium ion batteries are accelerating the trend. They are compact, wall mounted, and increasingly standardised. Installers report that battery only systems can often be deployed faster and with fewer planning constraints than rooftop solar.

BATTERIES VS SOLAR

Solar remains highly effective where conditions allow, but it faces structural limitations. Less than one in twenty UK buildings currently have solar, and uptake is heavily skewed toward the South of England.

Batteries, by contrast, are viable in shared occupancy offices, shaded buildings, and other areas where solar is impractical. They also align more directly with how UK electricity is priced, rather than how it is generated.

UK adoption of battery systems is accelerating quickly. Monthly MCS certified battery installations rose from dozens per month in 2022 to over 1,000 per month in 2024, signalling a shift from early adopters to mass market uptake.

AGGREGATED BATTERY STORAGE THROUGH VIRTUAL POWER PLANTS

The system level implications of the move to battery storage are significant. Even modest adoption (say 20% of UK public and private sector businesses installing batteries) would represent several gigawatts of highly responsive, distributed capacity.

Through virtual power plants (VPPs), we are seeing citizen batteries already being aggregated to provide grid services such as peak shaving and reserve capacity. Platforms operated by Octopus Energy, SolarEdge, Kraken, and others are all integrating thousands of domestic batteries into flexibility markets.

And not a moment too soon. Recent policy analysis suggests the UK will require 23–27 GW of battery storage by 2030 to maintain stability, with 10–15 GW expected to come from behind the meter assets.

THE IMPORTANCE OF BRAND RECOGNITION

Brand recognition is accelerating adoption. Tesla's Powerwall is helping normalise battery storage as a mainstream technology. This is only set to accelerate. In March Tesla received Ofgem approval to supply electricity directly in Great Britain, signalling deeper integration between batteries, tariffs, and grid services.

This visibility drives education. Not only among end users, but across installers, suppliers, and regulators alike. Lowering friction across the value chain.

A SHIFT IN FOCUS

Battery storage is emerging as one of the most important developments in the UK energy market for years. While solar will remain a cornerstone of decarbonisation, the future of the UK grid may ultimately be defined not by how electricity is generated, but by how intelligently it is stored, shifted, and deployed.

As we all start to shift focus from energy generation to energy management, storage becomes the logical focal point. In many cases, solar may evolve into an optional add on to a battery first strategy, rather than the other way round. **www.powwr.com**

UNLOCKING THE BUSINESS VALUE OF ENERGY STORAGE FOR C&I BUILDINGS

Jean-Marc Guillou, Business Unit Director of Energy Storage, Socomec

Rising electrification is reshaping the energy landscape for commercial and industrial (C&I) buildings, as geopolitical disruption continues to drive volatile energy prices and reinforce the shift towards more domestically produced, clean energy systems. This transition creates both cost-saving opportunities and operational challenges: while onsite renewable generation can deliver lower-cost electricity, its output does not always align with periods of highest demand. Against this backdrop, battery energy storage (BESS) offers C&I buildings a practical and forward-looking way to manage costs more proactively and exercise greater control over their energy use.

BRIDGING THE GAP BETWEEN PRODUCTION AND CONSUMPTION

Onsite renewables, such as solar, are an effective route to lowering long-term energy costs. Research commissioned by the UK Warehousing Association (UKWA) shows that solar in industrial and commercial sectors has the potential to reduce annual electricity costs by 40-80 percent, with the country's top largest warehouses capable of supporting around 15GW of rooftop solar capacity alone.

But onsite generation only delivers value when the electricity generated is utilised in ways that maximise operational and financial return. Renewable energy output rarely mirrors business demand, meaning sites often generate excess power during quieter periods while still facing high grid costs at peak times. For many C&I buildings, this mismatch limits the return on electrification and leaves sites exposed to volatile grid prices at the moments energy matters most.

Meeting today's energy challenges requires the effective utilisation of onsite renewable output, which is where energy storage becomes essential. As the bridge between when power is generated and when it is needed, intelligent BESS functions as a financial asset for C&I buildings, increasingly adopted at scale across the UK to lower costs and strengthen resilience without added operational complexity.

BESS FOR COST EFFICIENCY AND OPTIMISATION

BESS opens a variety of financial opportunities that go beyond reducing exposure to high energy prices. One of the immediate advantages lies in mitigating demand charges. When electricity is stored during off-peak hours and used during periods of highest demand, businesses can reduce the peak demand charges that make up a significant share of their electricity bills. This peak shaving is enabled by continuous measurement of building consumption and battery state of charge, allowing energy to be released precisely when demand peaks occur. The same capability underpins tariff optimisation, allowing organisations to purchase electricity when prices are lowest and rely on stored energy when rates increase.

Storage also supports renewable self-consumption, ensuring more onsite generation is used onsite rather than exported at comparatively low value. When building operators manage energy storage as part of the site's electrical architecture, these cost optimisation strategies become repeatable operating modes rather than one-off interventions.

UNLOCKING NEW REVENUE STREAMS

Alongside these savings, BESS introduces a range of revenue-generating mechanisms that enhance its business value. By managing both active and reactive power across a wide operating range, BESS can provide grid-support services such as frequency and voltage regulation. In capacity markets – which have expanded significantly in recent years – businesses are paid for making their stored energy available during periods of high demand, turning flexibility into a commercial advantage.

Energy trading provides a further opportunity to strengthen returns, with energy flows managed through an integrated control platform, while demand-response programmes offer additional earnings by compensating businesses for reducing grid consumption. Collectively, these mechanisms show storage delivers value beyond storage, improving long-term financial performance of C&I facilities.

THE ROLE OF BESS IN SAFEGUARDING BUSINESS CONTINUITY

At a time when geopolitical shocks are pushing up gas prices that still feed directly into electricity costs in many markets, BESS does more than deliver financial value. As networks operate closer to their limits, price shocks are increasingly accompanied by constraints and instability, making onsite resilience a practical requirement rather than a contingency.

BESS supports business continuity by providing backup energy during grid outages, reducing reliance on conventional gensets. Integrated into a site's electrical architecture, storage can supply power during blackouts and strengthen overall resilience. Where configured with black-start capability, BESS can also enable facilities to re-energise key systems independently of the external grid – an increasingly important capability as network pressures intensify.

A STRATEGIC ASSET FOR C&I BUILDINGS

The opportunities unlocked by BESS give businesses an innovative way to manage costs, protect critical processes and invest in onsite renewables with greater confidence. In a more constrained and volatile energy landscape, BESS enables businesses to modernise their operations while maximising financial return – giving C&I buildings a competitive advantage today.

https://www.socomec.co.uk/en-gb

E-METHANE: WHAT IS IT – AND WILL IT BECOME UK & EU MARKET RELEVANT?

Chris Goggin explains what E-methane is, how it is produced and its potential relevance inside the UK alternative gasses market. An informed synopsis of the progress that e-methane is making in becoming relevant will be used to highlight how e-methane can contribute towards carbon reduction aims.

A range of alternative energies that include renewables, hydrogen and clean electrification can potentially replace fossil fuels in UK and EU grid systems. E-Methane is a relatively new candidate that has been identified as an additional low carbon gaseous alternative capable of performing the same role as fossil fuels.

The importance of synthetic gasses has been elevated since the current Iran conflict. As natural gas costs are expected to rise sharply this year, economies across Europe could begin searching for cheaper gasses thar are capable of fulfilling the role of fossil fuels without emitting carbon output.

E-methane is the abbreviated name given to electro-methane, a gas which is created by extracting captured carbon dioxide and blending with green hydrogen, itself produced via renewable energy.

The number of e-methane production plants across Europe and Australia is notably increasing. Danish energy supplier, Andel, and Danish biogas company, Nature Energy, have invested DKK 100 million in constructing and operating an e-methane plant located in Glansager, Denmark.

Although not relevant to the UK and EU energy markets, Australia is the chosen location of three Japanese energy entities who are exploring e-methane production possibilities. Tokyo Gas, Toho Gas, Osaka Gas Australia (OGA) alongside Australian oil and gas company Santos have entered into an agreement that will focus on producing 130,000 tonnes of e-methane annually. This international collaboration highlights the emerging potential of e-methane.

E-methane is 1 of 14 priorities that the Japanese government's Green Growth Strategy has highlighted as a major component towards Japanese decarbonisation objectives.

Finnish energy company Nordic Ren-Gas Oy is developing a Power-to-Gas project located in Tampere, Finland. The production facility will manufacture hydrogen and e-methane as well as provide power for local district heating sourced through waste heat. Nordic Ren-Gas Oy are actively seeking to introduce a decentralised e-methane production network throughout Finland that assists in reducing fossil fuel usage.

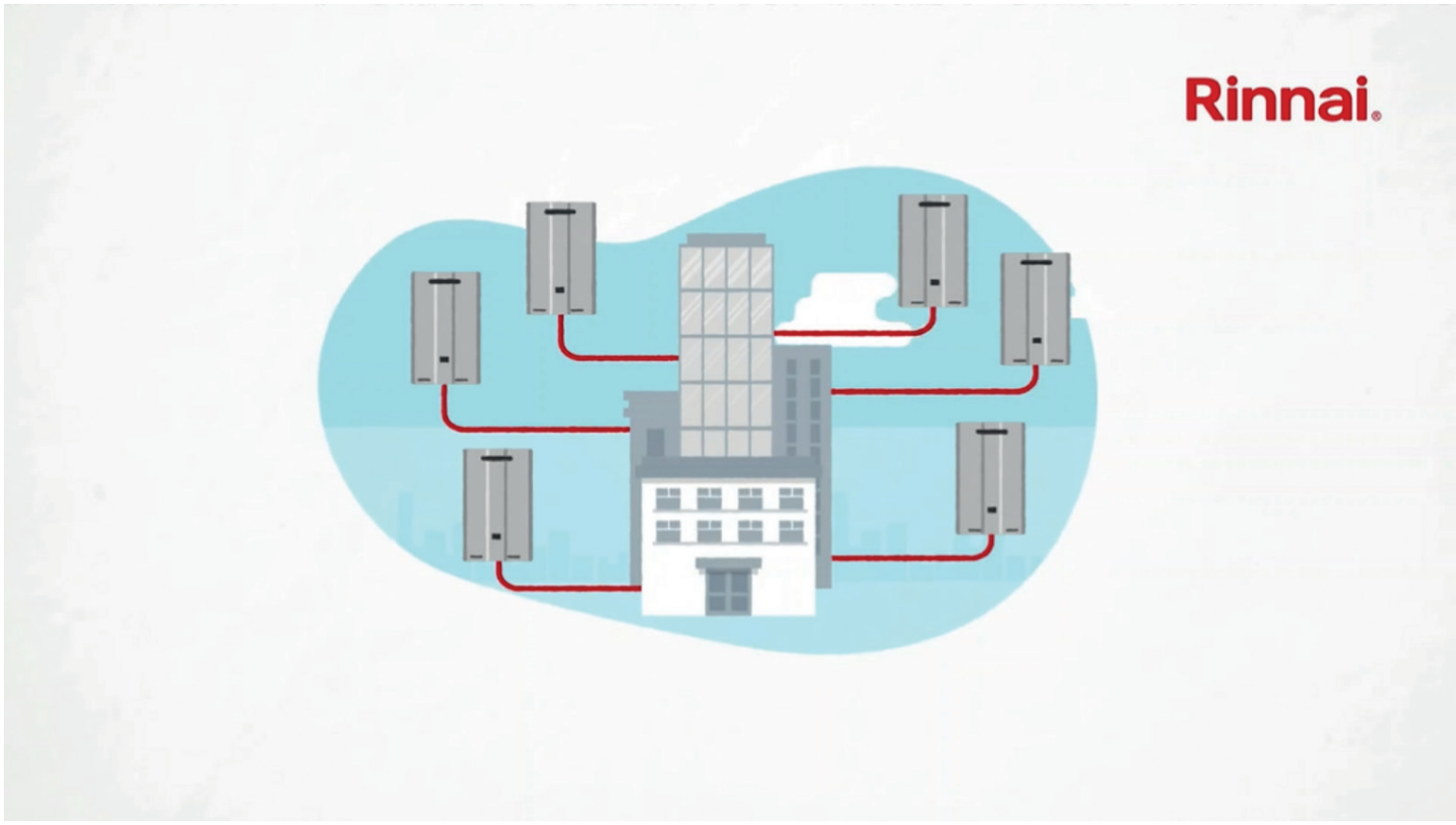
Several noteworthy e-methane producing plants have been constructed in Germany aiming to anticipate greater inclusion inside of domestic clean energy strategies. Germany is considered a leader in this field of expertise and has constructed 14 e-methane installations as of 2024.

One of which is the Atlantis plant located in Werlte, Lower Saxony. To acquire this project, the operator Hy2gen raised €200 million in 2022 and an additional €47 million in April 2025. This funding assisted Hy2gen in their aim of constructing a portfolio of power-to-gas projects. The Atlantis project formed part of the strategy. This facility now produces both green hydrogen and e-methane.

A further example of e-methane becoming a viable carbon neutral gas solution is demonstrated by German companies Turn2X, Siemens and Atmen collaborating to construct and bring into operation a renewable gas plant that produces e-methane from green hydrogen and biogenic CO_2. The project is located in Miajadas, Spain.

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

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



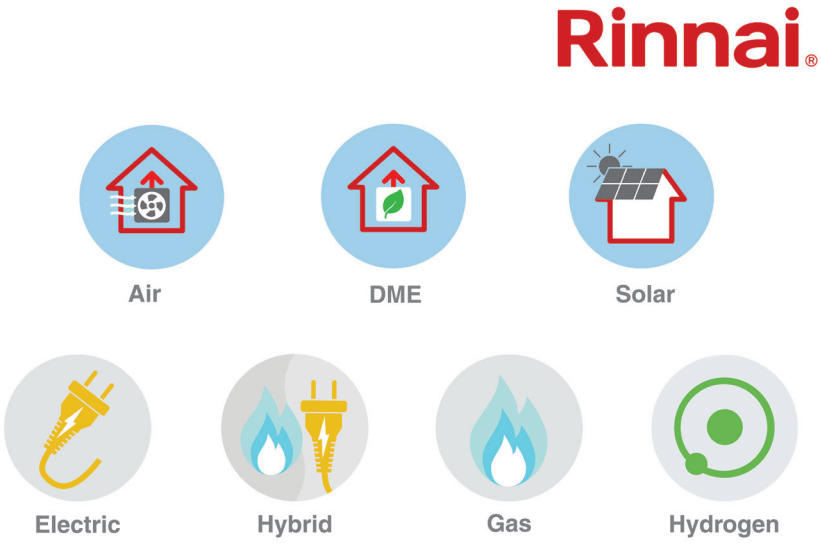
E-methane and biomethane are potential fuels that can be used in off-grid applications also. The UK off-grid fuel market is a growing economic entity and is also a hard-to-decarbonise section of society. The UK's gas grid network extends to 84% of UK households. Of the remaining 16%, 2 million properties are rural off grid homes and require daily fuel and power.

Off grid fuels, synthetic gasses and biogas are areas in which growth is expected to rise steadily through the up-and-coming decade.

European and the Asia-Pacific regions are refining strategies that centre on the production and distribution of e-methane and are confident that commercial sales will follow.

Biogas and synthetic gasses such as BioLPG, LPG, e-methane and Biomethane could play a discernible role in the global pursuit of clean energy. Current UK and European off grid gas markets maintain an upward trajectory.

Potential usage of alternative gasses can only increase as climate aims time limits recede, meaning that any gas capable of operational capabilities and behavioural similarities to natural gas will instantly be viewed favourably due to current infrastructure and natural gas reliance.



As the continued pursuit of low carbon energy sources continues both BioLPG and e-methane are promising variants on the road to carbon neutrality in both off grid and traditionally domestic applications in the UK and Europe.

To learn more about renewable fuels and technologies follow our free newsletter at **https://www.rinnai-uk.co.uk/contact-us/newsletter-sign**

Rinnai follows all domestic and international developments in current and future energy information. Doing so, provides potential customers with a solid foundation of information that assists product purchase.

Any news relating to appliance or energy options that is shaped by legislation will be immediately shared with UK customers. Access to information that affects customer judgment is an area that is Rinnai values. **www.rinnaiuk.com**

THE TWO SIDES OF SOLAR SAFETY AND HOW TO GET THEM BOTH RIGHT

As solar system technology becomes more advanced and widely adopted, it is fundamentally reshaping the way energy is produced. However, with innovation comes complexity and a range of safety challenges that extend beyond fire prevention. Understanding how to mitigate these risks – from electrical hazards to emerging cybersecurity vulnerabilities – is vital for protecting people, property and energy infrastructure.

As solar systems grow more advanced and connected, both physical risks and cybersecurity vulnerabilities must be pre-empted and managed to ensure safe and efficient operation says Christelle Barnes, UK Country Manager at SolarEdge Technologies.

BEST PRACTICE FOR PHYSICAL PROTECTION

Let's start by looking at physical safety. With millions of systems installed worldwide, solar PV is proven to be a safe, reliable technology. Commercial infrastructure fires can be caused by many things, including electrical malfunctions in factory machinery or even lightning. While fires stemming from solar PV systems are rare, it is important to thoroughly evaluate the safety of any existing or planned installations, particularly when selecting or upgrading system components.

When a building fire is found to originate from a solar PV system, causes may include installation error or improper maintenance. To support safer installations, many technology providers invest in ongoing training. For example, SolarEdge has trained over two thousand professionals in the UK in the last year alone. However, even when installations are flawless, external factors beyond anyone's control, such as an animal chewing through a cable, can introduce faults. It is at this point that component selection becomes key.

To mitigate potential physical solar safety risks, it is important to understand how these systems work. The main components are PV panels and inverters. The panels generate electrical power by converting solar radiation into direct current (DC). Inverters then convert the DC power to alternating current (AC) used to power homes and businesses.

As long as the sun is shining, solar panels and cables remain energised with high DC voltages, even if the main circuit breaker is shut off. In the event of a fire, firefighters typically disconnect the grid supply before intervening, assuming there is no risk of electrocution once the grid has been disconnected. However, this assumption is not true in the case of a typical PV roof system, as the system is creating its own electricity independent of the grid.

Traditional string inverters typically have limited safety functionality since they do not necessarily reduce the DC voltage when switched off. To meet safety standards, additional hardware may need to be purchased, increasing cost and labour. Due to this and other limitations, we have seen a notable shift away from traditional string inverters in favour of advanced systems that leverage DC-optimisation. These systems split the functionality of a traditional string inverter and use Power Optimizers placed directly onto panels to monitor performance in real time. This not only optimises energy production and system design, but it also improves safety through embedded safety features.

There are two safety features in particular to look out for when choosing an inverter. The first is SafeDC. This is a module-level safeguard which automatically reduces the output voltage of solar arrays to a touch-safe level to provide safe roof access to firefighters and maintenance teams.

The second is arc fault detection and prevention. Although rare, arc faults can be triggered by issues like false trips or loose connections and may result in heat build-up that, if undetected, could cause an arc fault to develop. DC-optimised systems monitor terminal blocks for abnormal heat buildup, quickly identifying the source and isolating it to prevent escalation.

SAFEGUARDING SOLAR FROM CYBER THREATS

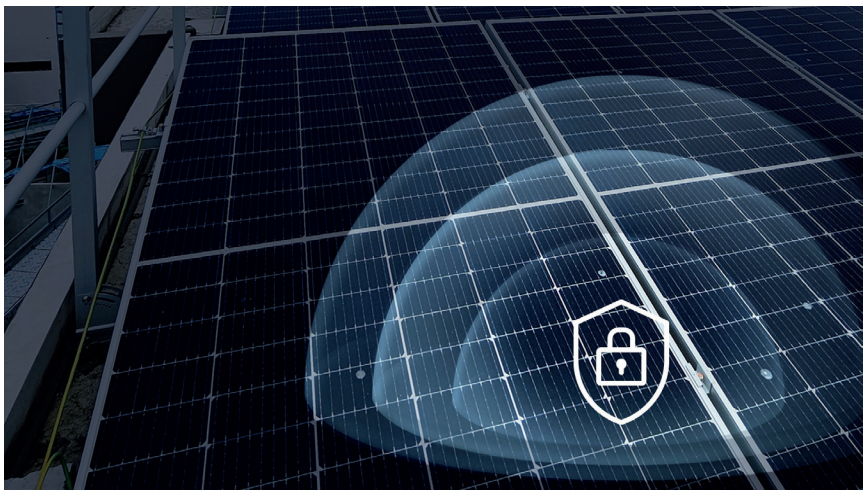
It is a sign of the times that solar safety concerns now extend beyond fire hazards to include cybersecurity.

High-profile cyberattacks on companies like HMRC and Marks & Spencer, although not related to solar, demonstrate how internet-connected systems can serve as entry points into wider networks if not properly protected. Modern solar inverters, connected for remote monitoring, software updates and participation in demand response services, are no exception.

While this connectivity unlocks significant value, it also introduces risk. Fortunately, UK regulation is beginning to catch up. The UK's Product Security and Telecommunications Infrastructure (PSTI) Act, introduced in 2024, sets out minimum cybersecurity standards for connected devices. This includes requiring strong, unique passwords and better protection of user data. Additional frameworks, such as the EU's Radio Equipment Directive (RED) and NIS2 Directive, are expected to influence UK policy in the near future.

In this rapidly changing landscape, it is important to stay ahead of regulatory changes by choosing technologies that meet both current and future standards. Selecting inverters equipped with encrypted communication and strong authentication should be a fundamental part of this process.

For more information, visit: **www.solaredge.com/uk**



CAN THE UK GRID COPE WITH THE EV REVOLUTION?

From site power limits to dynamic energy distribution in DC Charging, the demand that EV cars, trucks and buses are putting on the grid and the technology supporting it is enormous – and expanding rapidly. Sally Bailey, Head of EVC Sales UK at Vestel Mobility, the brand behind a significant part of Europe's EV DC charging hardware landscape, explains the challenges and ramifications of DC load balancing for energy companies, charging operators, fleet operators and end users alike.

As DC electric vehicle charging infrastructure accelerates across fleets, forecourts and public-sector estates, one constraint quietly governs almost every deployment decision. With a grid network never designed to cope with such high demand, available power is becoming the major bottleneck to a future of electrified transportation.

Whether a site is limited by grid connection capacity, transformer headroom, or long-term energy strategy, the challenge remains the same. The answer is ever more sophisticated load balancing to ensure multiple high-power DC chargers coexist on a single site without overwhelming infrastructure, inflating connection costs or compromising the user experience. Yet, in DC charging environments, load balancing is not a simple act of sharing power evenly. It is a dynamic, real-time control process that determines how finite electrical capacity is allocated across multiple charging sessions, constantly adapting to vehicle demand, site constraints and wider energy considerations.

At its most fundamental level, load balancing ensures that the total power drawn by a site never exceeds a defined limit. In DC systems, this principle is applied in a far more sophisticated way than with simple clusters of standalone AC chargers. Most modern DC installations use shared power architectures, where a central pool of power modules feeds multiple charging dispensers. Rather than each charger having a fixed maximum output, available capacity is distributed dynamically, responding second by second to what vehicles need.

This distinction is critical because vehicles do not draw DC power in a linear or accurately predictable way. Charging curves vary by vehicle design and software, battery temperature and state of charge. Load balancing systems continuously monitor these variables and adjust power delivery accordingly, increasing output where it can be used efficiently and reducing it where demand naturally tapers. The result is a site that operates closer to its true capacity, rather than one designed around theoretical worst-case scenarios.

Historically, DC charging sites were engineered conservatively. Each charger was allocated a fixed power envelope sized for peak demand, often requiring expensive grid upgrades and oversized electrical infrastructure. That is costly, disruptive and time consuming. An alternative was to simply throttle back the maximum output of each dispenser.

While either approach simplifies design architecture, it also left large amounts of capacity unused for much of the day. Load balancing replaces that static model with dynamic energy distribution, allowing sites to support more chargers within the same grid connection while maintaining operational control.

OPPORTUNITY AND COMPLEXITY

For business end users such as charge point operators, fleet managers and local authorities, this shift introduces both opportunity and complexity. On the positive side, load balancing enables higher charger density and faster deployment without the cost and delay of grid reinforcement. It also improves utilisation, allowing assets to work harder across a wider range of operating conditions.

The challenge lies in predictability and perception. Because load-balanced sites deliberately vary output, charging power is no longer constant. A vehicle may initially charge at high power, then see output reduced as additional vehicles connect. For fleet operators, this variability must be factored into scheduling and route planning. For public charging providers, it shapes customer experience and dwell times. The key is transparency and system design that aligns power-sharing behaviour with real-world usage patterns.

Those responsible for specifying DC charging infrastructure face a different set of challenges. Load balancing allows installers to extract maximum value from limited site capacity, but only if it is properly engineered. Misjudging vehicle arrival patterns, dwell times or vehicle mix can lead to congestion at peak periods, undermining the benefits of the system. Designing effective load balancing therefore requires a detailed understanding of how the site will be used, not just its electrical characteristics.

Integration adds another layer of complexity. DC load balancing relies on continuous communication between power cabinets, dispensers, site controllers and, increasingly, energy management platforms. Installers must ensure that these systems operate reliably under all conditions, including partial failures or communication loss, and that safety limits are enforced regardless of software state. As a result, DC charging projects are becoming less about installing individual components and more about delivering fully integrated energy systems.

Beyond simple constraint management, load-balanced DC sites are also well positioned to participate in future energy markets. As flexibility services, dynamic tariffs and local energy optimisation become more prevalent, intelligent power distribution at site level will be essential. In this context, load balancing is not merely a protective

measure but a foundation for grid-interactive charging infrastructure.

IMPLEMENTATION CHALLENGE

Technically, DC load balancing can be implemented through a variety of architectures. Centralised systems use shared power cabinets and a site controller to allocate energy across multiple dispensers, offering fine-grained control and high efficiency. Distributed approaches embed intelligence within individual chargers, coordinating power allocation across the site. In practice, many modern deployments combine elements of both, balancing modularity with system-wide optimisation.

What unites these approaches is the need for deep engineering expertise. Effective load balancing depends on understanding power electronics, charging behaviour, grid constraints and operational realities. It is not a marketing feature that can be added late in the design process, but a core capability that must be considered from the earliest planning stages.

As DC EV charging moves from early adoption into national infrastructure, load balancing will increasingly determine how scalable, resilient and cost-effective sites can be. Vestel Mobility is already installing MW-scale DC chargers for operators in the UK, and across Europe and the most successful deployments are those that treat EV charging as a system-level strategy rather than an add-on afterthought.

Whichever energy provider, CPO, infrastructure partner or hardware manufacturer you use to support your DC charging requirements, the real challenge remains ensuring that power is not just available but intelligently distributed to where and when it is needed most. **www.vestel-mobility.co.uk**

DC load balancing vs. BESS Buffering

As DC charging sites scale in power and complexity, particularly for fleet, bus and heavy-duty applications, two approaches are commonly used to manage site power constraints: dynamic DC load balancing and battery-buffered charging. While often discussed as alternatives, they address different challenges and we frequently deploy them together.

DC load balancing works entirely within the limits of the site's grid connection. It dynamically distributes available power across multiple DC chargers in real time, adjusting output as vehicles connect, disconnect and naturally taper their demand. This ensures the total site load remains within agreed limits while maximising utilisation. Load balancing does not increase the amount of energy available; it simply ensures that power is allocated efficiently and predictably.

Battery-buffered charging adds on-site energy storage to the system. Batteries are charged gradually from the grid and discharged rapidly when demand exceeds the grid's instantaneous capacity, enabling very high peak outputs where grid reinforcement would otherwise be required.

In practice, load balancing provides the control foundation, while batteries extend capability. Together, they allow high-power DC charging sites to operate efficiently today while remaining flexible for future demand.

BRINGING RAIL-GRADE SAFETY AND PRECISION TO ENERGY: SPL POWERLINES UK TARGETS HIGH-VOLTAGE GROWTH IN 2026

As one of the leading companies in rail electrification SPL Powerlines UK has marked 2026 as the year it further extends its expertise into the high-voltage energy infrastructure market in the United Kingdom and Ireland.

Martin Hawley, Managing Director of SPL Powerlines, said that the new chapter in the company's continued growth sees it seamlessly offering its proven specialist capabilities, rigorous safety standards and disciplines to the highly regulated energy sector.

He explained: "Our move into the energy and utilities sector is the fruition of two years' strategic planning and development to grow horizontally and vertically in new industries and regions.

"We have a proven pedigree in delivering large, complex, multi-disciplinary projects in the rail industry on time, ahead of schedule and under budget. The rail sector in the UK and Ireland is heavily regulated and has a high expectation of safety levels, which is very similar to the energy market. The assurance and rigour that we bring to a regulatory environment is second to none."

Powerlines already has extensive experience delivering large-scale, high-voltage transmission projects in the energy sector in Europe and has collaborated with major grid operators in Austria and Germany, which means expanding into the UK market is a logical next step.

Martin added: "Our European model within Powerlines Group, an Equans company, operates in multiple countries and sectors, predominantly mass transit, mainline rail, and energy transmission and distribution and this is the model that we have now adopted in the UK and Ireland.

"We are able to bring in our company's expertise of undertaking large transmission works in Germany, Austria and France, and supply our company's vast range of skills to the UK energy sector."

He added: "The energy sector is entering a defining moment, and with it comes an extraordinary opportunity. For years, the sector has been ready for a renewed focus on people: developing talent, strengthening skills, and building a sustainable workforce pipeline. That moment has arrived. This is where we thrive."

SPL Powerlines are HV and OLE contractors who design, build and deliver full system architecture solutions. They offer the complete portfolio including surveying, design, construction, procurement, test plans, section proving, sub-stations and civil engineering. The company readily invests in people, plant and premises and its direct workforce is also supported by sub-contractors and SMEs where required.

Martin explained: "Our team has many transferrable skills which makes our entry into the utilities sector the sensible next step to provide first-class delivery to a thriving industry.

"With a strong corporate background and our existing capabilities, we have the ability to transform and enter these new sectors with minimal training of our highly skilled workforce."

Martin said: "Alongside the transferrable skills within our team in the UK and Ireland, as we expand in the energy sector the requirement for further personnel will grow. We're not just delivering services; we're elevating capability. We're reigniting a culture of development, progression, and longterm investment in people; the foundation of a stronger, more resilient energy future."

As part of this drive members of the SPL Powerlines team has recently fast-tracked experienced linesmen to an accredited core Wood Pole competence. This included elements of pole top rescue, general positioning at the pole top working in teams, rigging and dismantling of an existing 11kV line in preparation to run a new line, pole installation and pole top make off. The training also covered the installation of low voltage tails from transformer to low voltage fuses, the installation of high voltage jumpers to transformer, fitting anti-climb guards and electrical testing.

Martin Hawley, Managing Director of SPL Powerlines UK

SPL Powerlines has extensive experience not only in OHL installation but also in substation construction and the installation of associated distribution equipment. Across the UK, SPL Powerlines teams have delivered over twenty-five 25kV substations on Network Rail infrastructure to support new electrification programmes.

These portfolios across England and Scotland included several 400 kV National Grid feeder station connections, associated HV cable installation, protection and control systems and full testing and commissioning. Offering a full integrated delivery solution, SPL Powerlines acted as Lead Design Organisation Principal Contractor, Construction and Testing delivery for all associated civils', telecoms and electrical works.

The company is also highly experienced in stakeholder relations and communicating on environmental issues with local residents, for example when undertaking land works.

SPL Powerlines has obtained NERS (National Electricity Registration Scheme) Partial accreditation across all available scopes with a view to progressing to full accreditation within the year. This is a key industry

standard recognising competence and compliance for Independent Connection Providers (ICPs) working on UK electricity infrastructure.

SPL Powerlines UK Limited is a leading multi-disciplinary infrastructure specialist, offering end-to-end delivery across both rail and energy sectors with capabilities that sets it apart in highly regulated environments. Its energy infrastructure expertise spans HV/LV distribution up to 132kV, transmission systems up to 400kV, substation design and build, BESS installation, and renewable energy connections. What differentiates the company is its ability to integrate these services seamlessly with decades of rail electrification experience, ensuring assured engineering, safety discipline, and consistent delivery performance.

SPL Powerlines operates one of the industry's most comprehensive fleets of rail and construction plant, supported by in-house logistics, haulage, welfare, and 24/7 maintenance, enabling rapid mobilisation and fully controlled project execution. Its design and consultancy teams provides multi-disciplinary engineering across civils, OLE, cable routing, and substations, combined with advanced digital engineering, BIM, CDE management, surveying, and full systems engineering and assurance – ensuring compliant, efficient, and right-first-time outcomes.

SPL Powerlines is also a RISQS-certified and National Skills Academy for Rail-accredited labour provider, supplying technical, engineering, and specialist HV and OLE professionals across the UK and Ireland. With integrated PMO, governance, and recruitment solutions, the company provides a complete, scalable service – delivering safe, high-quality, and future-ready infrastructure for clients in both rail and energy markets.

ABOUT POWERLINES

Powerlines build future networks for rail, energy, and e-mobility. The Group implements complex overhead and transmission line construction projects for international customers and provides innovative charging infrastructure solutions. The Powerlines Group is one of Europe's leading providers of infrastructure electrification solutions. The electrification of public transport systems is the basis of decarbonisation and thus the reduction of CO_2 emissions in transport. The construction and expansion of energy transmission infrastructure is paving the way for the energy transition. The Powerlines Group has its headquarters in Lower Austria and local subsidiaries in Central and Northern Europe. The Group employs over 1,370 people. In the 2024 financial year, it generated a turnover of EUR 440 million. The Powerlines Group is an Equans France company.
www.powerlines-group.com/uk/

ABOUT EQUANS GROUP

A subsidiary of the Bouygues group, Equans is a global leader in the energy and services sector, operating in 20 countries, with 83,000 employees across five continents, and €18.7bn in revenue in 2025.

Equans designs, installs and delivers tailored solutions to enhance its clients' equipment, systems and technical processes and optimise their use as part of their energy, industrial and digital transitions. With a strong local footprint built on its historic brands and leading technical expertise, Equans' highly qualified experts support regions, cities, industries and buildings across HVAC (heating, ventilation and air conditioning), refrigeration and fire safety, facilities management, digital and ICT, electrical, mechanical and robotics services. Equans is the market leader across key European markets (France, Switzerland, Belgium, the Netherlands and the UK) and also has a strong presence in the United States and Latin America.
www.equans.com

RINNAI IN MALTA – QUALITY PRODUCTS & SERVICE, FIRST TIME EVERY TIME

Energy Savings Solutions of Malta, headed by Franco Bileci, the sole suppliers of Rinnai heating & continuous flow hot water heating products, are approaching their 20th anniversary of successful trading on this jewelled island. In that time, the company has supplied and installed products and systems to thousands of sites, in domestic homes and also in all types of commercial sites such as hotels, holiday homes & villas, healthcare and nursing homes.

Energy Savings Solutions was founded in 2007 by Franco after a family connection in Australia suggested that the Rinnai product range might be suited to Malta.

"It became quickly apparent that the best way of progressing the business and provide long term customer satisfaction was to ensure that his company also carried out the installations. That dedication of Quality first time, every time to products and services carries on to present times," says Franco Bilieci.

He adds, "Commercial & Domestic hot water in Malta is delivered by three main sources – LPG powered continuous flow units; solar water heaters (Malta has 300 days of strong sunshine per year); electric immersion heaters, more recently, heat pump water heaters are also becoming popular, supported by government grants."

Mr Bileci continues with this analysis adding, "Common systems on Malta include:

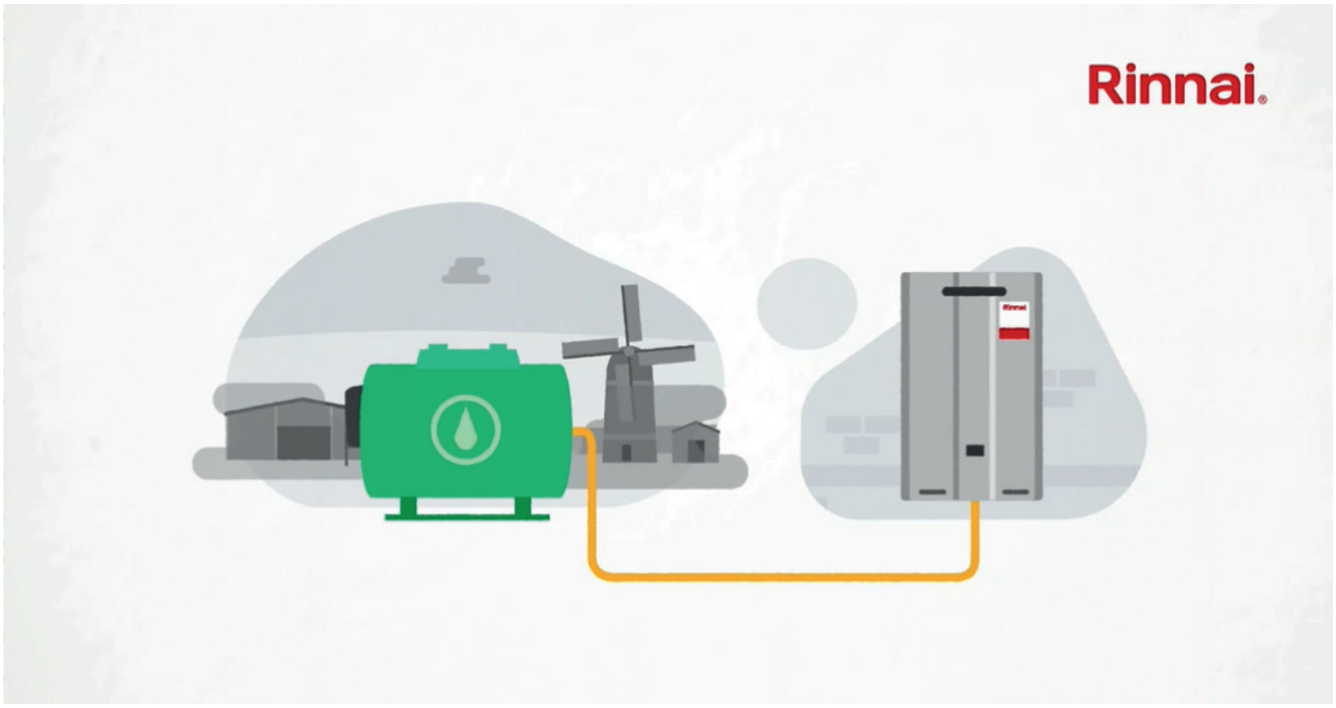
- Continuous Flow Gas Heaters: Bottled LPG units are highly popular for instant hot water, particularly in many parts of the island which have storage space.
- Solar Thermal Systems: Prevalent on rooftops, offering 50–80% of hot water demand, with electric backups.
- Heat Pump Water Heaters (HPWH): Highly efficient systems (400%+ efficiency compared to electric resistance) that extract heat from the air."

Franco Bileci

"Key Considerations in Malta are as follows-

- Government Grants: The government frequently provides subsidies for installing solar thermal or heat pump water heaters to boost renewable energy use.
- Hard Water: The high mineral content in Malta's water requires regular maintenance for all water heating systems to prevent limescale buildup.
- Energy Efficiency: Given the high cost of electricity, heat pumps and solar are preferred for long-term savings. Many homes in Malta use a combination system with back-up support such as continuous flow or electric."

The island of Malta has a very specific set of climatic and geological



conditions – it only harvests about 50% of its water via natural means such as rainfall or wells & bore holes and the rest of it comes by desalination plants.

"Water quality needs constant attention. This means that we need to take this into account with each installation. And the island is almost entirely built on limestone, which adds to these peculiarities," says Franco.

Fuel is another moot point on the island – it comes in the form of electricity purchased from nearby Sicily and LNG-Liquified Natural Gas. There is a huge sea terminal and storage facilities catering for the LNG supplies at the port of Marsaxlokk, just southwest of the capital Valletta.

"All sites with Rinnai units use bottled gas and all have a system of changeover, so they don't run dry. To the outsider it is reasonable to expect that solar power would be a major source of energy, but it isn't. At the moment the Government is not really promoting it through any real incentives. And the schemes in place are very complicated so there is little enthusiasm for making it work on a major scale. But Malta is not the only place in the world with some eccentricities!" says Franco.

"To us it is extremely interesting that Rinnai UK is now offering a huge range of appliances in system configurations with a choice and combination of fuels – Natural Gas, LPG, BioLPG, Hydrogen-blend, and electric in heat pumps, solar heating, all able to be bespoke designed by a specialist design team into a unique-to-site solution which is practical, economic and technically proficient.

Although domestic sites still take up the vast majority of Franco's business, he is rapidly developing the commercial side also. All commercial sites also use bottled gas – one such installation is in a nursing home catering for several hundred patients and staff. Here Franco has installed 3 x 1600i N Series, along with calorifiers.

"This site has a plant room," says Franco," which is convenient for the installation as it has the room for a dedicated space. In other sites, especially hotels, they do not want to give up space that can be earning them money through letting more bedrooms for guests. At hotels the installation and bottled gas storage tends to almost always be on the rooftop. It is very awkward for the delivery men but carrying gas bottles, two at a time, it helps them get very fit!"

"One hotel customer – has 35 rooms, open all year and with an occupancy rate approaching 90% - has 2 x Rinnai 1600e units. They only really use one unit, the other is back-up as they simply don't want the problems of not providing hot water to guests.

"But" adds Franco, "we are also looking at designing and installing a Hybrid system, utilising one of the Rinnai Low GWP heat pumps at a hotel undergoing a major refit. He adds, "The owner is keen to minimise energy costs on heating hot water but not at the expense of quality and all the other benefits a Rinnai system offers – durability, dependability, cost efficiency.

"Rinnai offers constant and consistent flow rates, plus temperature accurate delivery on demand. A stored system would struggle to cope with the peak demands. The Rinnai product range is valued and perceived on the island as being a product of excellence delivering a premium performance to each and every site.

Franco has numerous installations of Rinnai H1 BioLPG ready water heaters and is now looking forward to H2 hybrid solutions of Solar Thermal & Heat Pumps and H3 advanced Heat Pumps technology.

Malta is a busy, prosperous island of almost half a million population with huge amounts of inward investment in financial services, tourism and gaming – and it is home to serious amounts of super yachts and cruise ships. Against this background Franco Bileci looks to expand his business with measured progress so that each and every customer of Energy Saving Solutions has both product and service excellence. **www.rinnai-uk.co.uk**

IDEAL HEATING COMMERCIAL ECOMOD NATURAL REFRIGERANT HEAT PUMP RANGE CAPACITY INCREASES WITH NEW 65KW MODEL

Building on the success of its ECOMOD 290HT natural refrigerant commercial heat pumps, Ideal Heating Commercial has expanded the range to include a 65kW model to meet demand for higher output systems. This takes the ECOMOD 290HT range to four chassis sizes and six available outputs, from 15kW to 65kW.

ECOMOD 290HT monobloc air source heat pumps have an exceptionally low global warming potential (GWP) of just three, thanks to the use of R290 natural refrigerant. The lower the GWP, the lower the contribution to climate change. Furthermore, with the 2014 F-Gas Regulations and, more recently, the EU's Regulation 2024/573 pushing for a refrigerant phase-down, the use of low-GWP refrigerants helps future proof investments made in natural refrigerant heat pumps.

The new ECOMOD 290HT 65kW has a maximum flow temperature of 70°C and an excellent coefficient of performance (CoP) of up to 4.6 which means it produces up to 4.6 units of heat for every single unit of electrical energy consumed.

You can also cascade up to seven of these new 65kW models for where greater heating outputs are required. Whilst an integral control unit is included as standard, optional control units are available for cascade and where no BMS is present.

As with other ECOMOD heat pumps, the ECOMOD 290HT 65kW can be used in a hybrid heating system. It integrates seamlessly with other Ideal Heating Commercial products – including the EVOMAX 2 and IMAX XTRA 2 condensing boilers – to create efficient, low-carbon hybrid heating solutions.

Commenting on this latest addition to the ECOMOD range, Chris Caton, Product Director – Commercial, at Ideal Heating said: "Ideal Heating has been providing heating solutions for the UK market for well over 100 years. We have stood the test of time and built a reputation based on our ability to deliver customers with quality, reliable commercial heating solutions that meet contemporary market conditions. Investing further in our ECOMOD heat pump range, including our latest natural refrigerant models, enables us to provide an even wider range of outputs to meet the changing needs of our customers. As the market for heat pumps continues to grow, we will continue to stay ahead of the curve, delivering products and solutions that will support market needs now and in to the future."

All ECOMOD heat pumps are backed by a five-year warranty when commissioned by Ideal Heating Commercial. Ideal Heating Commercial remains the only manufacturer to continuously provide a free commissioning service across its commercial ECOMOD heat pumps and condensing boilers, helping contractors save time and reduce costs, whilst ensuring optimal system setup and performance.

Ideal Heating Commercial continues to deliver advanced commercial heating solutions developed in line with emerging technologies, market requirements, and environmental legislation. For more details: **idealcommercialheating.com/products/ecomod-290ht**

NEW ELECTRIC SOLUTIONS BROCHURE FROM BABCOCK WANSON SUPPORTS CUSTOMER DECARBONISATION JOURNEY

The Babcock Wanson Group, of which Babcock Wanson UK is a founding company, has published a new brochure dedicated to its rapidly expanding range of electrical solutions for industrial heat and steam production.

As demand grows for practical decarbonisation technologies, the new brochure provides a comprehensive guide to Babcock Wanson's electric boiler offering and the role these systems can play in achieving sustainable, cost-effective heat generation. It explains how industrial processes that have traditionally relied on fossil fuels can now be powered by high-efficiency electric technology, supporting customers in meeting their environmental responsibilities while maintaining operational performance.

The brochure details Babcock Wanson's complete electric boiler portfolio, beginning with its high-voltage electrode boilers, capable of delivering steam at pressures up to 85 barg and with outputs of up to 75MW. These systems combine fast start-up, zero on-site emissions and efficiency of over 99%, making them one of the most powerful tools available for decarbonising energy-intensive processes. Alongside these sit a range of low-voltage immersion heater boilers, designed for applications requiring lower power and flow rates, yet still delivering precise control, simple installation and robust reliability. For industries requiring tailored solutions, the brochure introduces the e-Pack, a highly adaptable zero-emission boiler available for up to 12 tonnes of steam per hour, while for smaller-scale or specific requirements the VAP-EL provides a compact, skid-mounted solution.

Recognising that electrification is not always an immediate or total transition, the brochure also highlights Babcock Wanson's hybrid solutions, which allow new or existing fire-tube boilers to be fitted with electric auxiliary heating systems. These enable companies to switch seamlessly between conventional fuels and electricity depending on price, availability or regulatory requirements, providing a pragmatic route towards decarbonisation without sacrificing energy security.

Commenting on the release of this latest brochure, Etienne Fourie, Technical Sales Manager for Babcock Wanson UK's Process Engineering Division, said:

"Our new Electrical Solutions brochure demonstrates the breadth of innovation and engineering expertise we have developed to support industry in its transition to clean energy. From large-scale electrode boilers to compact hybrid add-ons, we are offering practical, efficient and future-proofed solutions that enable manufacturers to significantly reduce their carbon footprint while retaining the flexibility they need in a changing energy landscape."

The Electrical Solutions brochure also explains how Babcock Wanson's equipment integrates with digital monitoring systems, providing customers with intelligent performance tracking and enabling participation in emerging grid services markets. In addition, it sets out the economic case for electrification, highlighting both the reduction in exposure to fluctuating gas prices and the availability of grants and funding for low-carbon technologies across Europe.

For a copy of the new Babcock Wanson Electric Solutions brochure, go to: **www.babcock-wanson-group.com/our-solutions**

STOP OVERPAYING ON YOUR WATER BILLS AND IMPROVE EFFICIENCY

Most UK businesses pay more than they need for water. At H2O Building Services, we specialise in Water Bill Validation to help businesses recover overpayments, reduce ongoing costs, and optimise water efficiency.

WHAT IS WATER BILL VALIDATION?

Water Bill Validation is a detailed audit of your water invoices, ensuring your business only pays for the water you actually use. Our team identifies errors, incorrect charges, and inefficiencies so your business can save money and plan budgets more effectively.

Key Checks Include:

- ✓ Meter reading accuracy
- ✓ Correct tariff and rate application
- ✓ Historical consumption trends
- ✓ Duplicate or misapplied charges
- ✓ Regulatory compliance and allowances

COMMON REASONS BUSINESSES OVERPAY

Even well-managed businesses often face overbilling due to:

- Estimated or incorrect meter readings
- Incorrect tariff classification
- Duplicate or hidden charges
- Billing system errors
- Unclaimed allowances or reliefs

Many businesses are losing hundreds to thousands of pounds annually without realising it.

HOW H2O BUILDING SERVICES HELPS

Our Water Bill Validation Service includes:

1. Comprehensive Bill Audit – Examine your past invoices for errors.
2. Error Identification – Spot overcharges, duplicates, and misapplied tariffs.
3. Overpayment Recovery – Recover historic overpayments from suppliers.
4. Ongoing Validation – Monitor future bills to prevent overbilling.
5. Efficiency Advice – Recommendations to reduce water usage and operational costs.

BUSINESS BENEFITS

- Immediate Cost Savings – Recover money you've overpaid.
- Lower Future Bills – Ensure billing accuracy going forward.
- Improved Cash Flow – Reduced operational expenses.
- Actionable Insights – Understand water usage trends and inefficiencies.
- Compliance & Risk Reduction – Stay aligned with regulatory requirements.

WHO CAN BENEFIT?

We work with businesses across industries:

- Manufacturing & Industrial
- Hospitality & Leisure
- Retail & Offices
- Healthcare & Education
- Property Management

TAKE ACTION TODAY

Stop wasting money on inaccurate water bills. Let H2O Building Services help your business:

- Validate current bills
- Recover past overpayments
- Reduce future water costs

GET YOUR FREE WATER BILL VALIDATION NOW

Visit **h2obuildingservices.co.uk** or call **0845 6580948**.

WATER BILL VALIDATION

Do you know precisely what your water supply company charges you for? Would you have any idea if they were billing you correctly based on your actual water use, or whether you were being overcharged?

H2O THE WATER AUDIT EXPERTS

Commercial water bills can be complex. The more water your business uses, especially across many different processes and multiple sites, the more complex they become. Many charges are **hidden or obscure**, making it difficult for clients to keep tabs on whether they are being billed accurately or fairly.

Our water bill validation service helps remove the complexity so you get clear sight of what you are actually paying for. With years of experience dealing with water supply companies, our specialist consultants can spot mistakes and discrepancies quickly and have a proven track record[1] saving companies thousands of pounds in reduced costs and refunds.

WHAT IS WATER BILL VALIDATION?

Water bill validation is part of our acclaimed water audit process[2]. By comparing historical billing with water use, we ensure that you pay what you should for your water and no more. Water bill validation can be broken down into three parts:

- Checking previous bills are accurate and that you have not been overcharged
- Identifying ways to save money on future bills
- Ongoing monitoring of bills to ensure you never pay more than you should.

HOW DOES WATER BILL VALIDATION WORK

Should you opt for our water bill validation service, our professional consultants become **an interim between you and your water supplier.** You don't need to enter into a long contract.

You will be able to access via email information on any water or waste water issue you may have as well as details of your billing history, past and present. This reduces time and effort spent digging through filings of old paper copies.

Ongoing water bill validation

A crucial part of our water bill validation service is that we will keep monitoring and managing your bills over time. Our consultants will examine your water bills[3] before you receive them, checking and validating them before approving payment and passing them on to you. This gives you the peace of mind that the fees you pay are correct every time, while any issues will be dealt with prior to payment authorisation, taking the burden from the client.

Read about how we have saved McDonalds £250,000[4] to date through long term monitoring of the surface water charges levied for all of their UK restaurants.

BENEFITS TO YOU AND YOUR BUSINESS

- Opportunities to save money identified on an ongoing basis
- Refunds arranged for historic overcharging
- Client's past and present billing history emailed on demand, saving you time, effort and space on billing administration
- Billing errors dealt with prior to payment authorisation, ensuring you are confident that the bill is correct
- Spikes in water usage can be spotted quickly and efficiently, helping to tackle issues like water leaks and eliminating high water charges
- Clients can access information on any water and waste water issue as and when required.

1. https://www.h2obuildingservices.co.uk/case-studies/
2. https://www.h2obuildingservices.co.uk/our-services/water-audits/
3. https://www.h2obuildingservices.co.uk/water-bills/
4. https://www.h2obuildingservices.co.uk/case-studies/mcdonalds/

Our track record speaks for itself.

Our track record for reducing costs on water bills is second to none. With unrivalled attention to detail and an innovative approach, we give our customers exactly what they want - a fair, flexible, professional service that delivers outstanding results.

Here are just a few of our Blue Chip clients who we have collectively saved over £3.5m. We hope you will agree that the results we achieve are staggering!

Cost avoidance £600k.

Lookers for you, for life — Savings of **£500,000**

David Lloyd CLUBS — Savings of **£750,000**

JEWSON — Savings of **£850,000**

HC one The kind care company — Savings of **£200,000**

WOLSELEY — Savings of **£900,000**

Pizza Hut — Savings of **£250,000**

Call a water audit expert now, and start saving

0845 658 0948

Alternatively, you can email us at

info@h2obuildingservices.co.uk

Share:

salix

We're creating better places to live and work




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.

We are passionate about delivering energy efficiency projects across the UK, making buildings across the public sector as well as our homes better places in which to live, work and enjoy.

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

salixfinance.co.uk

Scan the QR code to find out more