

Turning Corporate Renewable Energy Ownership on its Head

See page 20

INSIDE THIS ISSUE:

4



Clean energy solutions to power a sustainable future

28



Emerging Technologies for Sustainable Steam Generation

32



Heat networks: change is coming – and overdue

Ask ME about energy efficient solutions

With increasing pressure to reduce operational costs and lower your carbon footprint, Mitsubishi Electric's Ecodan CAHV-R high temperature heat pump is the low-carbon solution you can rely on.

Designed for commercial heating and hot water projects, it delivers water temperature up to 70C to help remove gas from buildings while minimising the need to change heat emitters. Using lower-GWP R454C, it offers a flexible, energy-efficient solution for diverse heating and hot water needs.



Ecodan CAHV-R



Find the right solution for you at:
les.mitsubishielectric.co.uk



EM Magazine

APRIL 2025

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.

Please Note: No part of this publication may be reproduced by any means without prior permission from the publishers. The publishers do not accept any responsibility for, or necessarily agree with, any views expressed in articles, letters or supplied advertisements.

All contents © Energy Manager Magazine 2025

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

FRONT COVER:

Turning Corporate Renewable Energy Ownership on its Head

See page 20



INSIDE

4 News	27 Training
8 Opinion	28 Steam Systems
12 Heating	30 Heat Networks
14 Monitoring & Metering	35 Microgrids
20 Renewable Energy	36 Heat Pumps
22 Net Zero	38 Behaviour Change
24 De-carbonisation	40 Water Management
25 Energy Management	42 Events
26 Energy Transition	44 Showcase

Photo by Kervin
Edward Lara:
pexels.com



CLEAN ENERGY SOLUTIONS TO POWER A SUSTAINABLE FUTURE

Alexander Gittens,
Utilities & Energy Senior
Business Development
Manager, Getac

From rising global temperatures to natural disasters, the climate crisis is having a negative impact on human health, ecosystems, and costing businesses, with the World Economic Forum (WEF) predicting that by 2050 climate change is likely to cause \$12.5 trillion in economic losses worldwide.

The UK is seeking to build a leadership position on climate issues, and its new Planning and Infrastructure Bill adds to this by fast-tracking clean energy projects for grid connections across the country. However, while this is an important initiative from the government, the impetus is also on energy and utilities companies to modernise and enhance operational efficiencies.

Technology is foundational to these efforts. In a sector that's dominated by field-work in harsh, remote conditions, rugged technologies, in particular, must be geared towards decarbonisation, e-waste reduction, and the efficiency of energy infrastructure and transportation. The time is now for energy and utilities companies to consider how to layer sustainable decision-making into the hardware they deploy. In today's world, there is a diverse range of renewable energy sources available to harness for a greener tomorrow, each offering unique benefits and challenges.

TYPES OF RENEWABLE ENERGY SOURCES

Nearly half (47%) of the European Union's electricity now comes from solar and other renewables, and solar was still the fastest growing power source last year. Solar panels provide around 15-20% efficiency and integrate with the electrical grid bi-directionally to create electricity and balance intermittent energy and power generation elsewhere.

Wind energy, particularly onshore, benefits from higher atmospheric energy levels, and while it can be more variable, it thrives in open, flat areas such as in Denmark, where wind energy is one of the most widely used renewable energy sources. In contrast, offshore wind power is more consistent due to the compound effect of having fewer obstructions than onshore and experiencing a more significant temperature gradient between land and the ocean.

Hydropower takes advantage of hydroelectric energy from the large percentage of water on Earth, harnessing the inherent kinetic energy of water to spin a turbine to generate electricity through a hydroelectric system. With our energy grid increasingly reliant on these sustainable resources, it's vital to coordinate these various streams to maximise output, stability, and resiliency while keeping costs and environmental impact low. Smarts grids should be thought of as a connective tissue that absorbs the inconsistency of renewable energy and always delivers consistent, reliable output energy.

TACKLING THE BARRIERS TO CLEAN ENERGY ROLLOUT

Grid infrastructure quickly becomes a limitation in realising the benefits of renewable resources. Despite significant disagreement on the scale, method, and mechanisms to deliver renewable energy to reduce emissions from greenhouse gases, governments are implementing transformational regulations. For instance, the EU's Trans-European Networks for Energy (TEN-E) policy, which facilitates investments in cross-border energy infrastructure. But despite these major initiatives, standardisation and permitting processes are barriers to integrating renewable energy into the grid.

Source power intermittency is one of the biggest challenges to clean energy. The sun doesn't always shine, and the wind doesn't always blow enough to produce electricity, leading to energy production peaks and troughs. As a result, maintaining resilience and generating electricity through energy storage when the energy is available is the next hurdle to clear. In addition, the cost of renewable energy technologies

continues to decline, further elevating demand for energy storage.

Raising public awareness can help drive governments to act, and non-government organisations and activist groups are forming to increase the urgency of shifting to clean energy. Finally, creating public-private partnerships brings innovation and current hurdles directly to the public, raising awareness.

The UK has committed to achieve net-zero carbon emissions by 2050. To reach this ambitious target, society's prioritisation of clean energy implementation is non-negotiable. Both public perception and universal regulatory alignment will support the bold transition.

RUGGED DEVICES WITH ADVANCED CONNECTIVITY ARE KEY TO A GREENER FUTURE

Rugged, durable devices are a primary enabler for implementing green energy globally, especially in field services. They play a fundamental role in future-proofing the UK's clean energy strategy, and while the UK government has committed to prioritising dozens of ready-to-go projects for on and

offshore wind, solar power, electricity grids, hydrogen, carbon capture and nuclear power, this commitment alone will not create this drastic shift.

Rugged solutions transform operations, moving from a pen-and-paper approach to a fully digital one, increasing productivity in field service businesses. A key part of this transformation is the shift away from legacy systems towards more open and flexible platforms like Android, which offer familiar, user-friendly interfaces that streamline fieldwork. Energy and utilities companies must upgrade outdated technology and invest in devices that enable workforce automation and AI-based applications, like predictive maintenance.

Rugged computing solutions are designed for longevity, efficiency, and operational resilience, ultimately reducing the need for frequent replacements, while minimising e-waste and supply chain consumption. By supporting next-generation connectivity technologies, such as private 5G and Wi-Fi 6E, the devices deliver seamless operations, which in turn reduces the carbon footprint associated. <https://www.getac.com/>

We're empowering and enabling the UK to meet ambitious net zero goals

salix

We're passionate about delivering decarbonisation projects across the UK on behalf of the Department for Energy Security and Net Zero, the Department for Education (DfE) and the Scottish and Welsh Governments.

Our expert teams work with the public sector and housing throughout the decarbonisation journey, sharing knowledge and experience.

Coming up:

- › **Decarbonisation Dialogue:** Join our guest speakers for an informal knowledge sharing webinar for those working in the public sector on decarbonisation projects.
- › **Distribution Network Operator events:** get connected and join our webinars.
- › Listen to our **Decarbonisation Dialogue** podcast.

Scan the QR code to view our latest events

in [salixfinance.co.uk](https://www.salixfinance.co.uk)



RINNAI'S WHITEPAPER ON VALUE ENGINEERING EXPLORES OPTIMAL OPTIONS FOR CARE HOME DHW SOLUTION

Rinnai has issued a new whitepaper titled "Optimizing Domestic Hot Water Systems for Archetype Care Homes: A Value Engineering Approach." The full version is available now on the Rinnai website www.rinnai-uk.co.uk/contact-us/ask-us-question

The whitepaper is strident in pointing out that Value Engineering (VE) principles highlight the importance of putting customer requirements first, applying cost effective engineering solutions and improving the whole life value of a project – as opposed to simply cutting costs resulting in the inevitable compromise of performance.

It includes a major section on an archetype Case Study which analyzes a range of potential solutions for the refurbishment of a care home in the UK. Carbon-Cost Analysis (CCA) studies are used to decipher the optimal solution based on the customers' criteria of reducing carbon dioxide (CO₂) emissions by 20%, opting for a system with no more than two heat pumps (HPs) due to space constraints, as well as considering the operating expenditure (OPEX) as a key metric when deciding on the final solution. The archetypal site was given a current system of 3 x non-condensing water heaters.

After generating several proposed solutions and evaluating these based on the set criteria, there is further analysis of specific ones – an instantaneous gas-fired system, a hybrid system and



an all-electric system – all based on the initial capital expenditure (CAPEX), plus 5-year forecasts regarding OPEX, carbon production, and lifecycle costs. A full breakdown of CAPEX, OPEX and carbon performance of all relevant

systems is provided to demonstrate which one provides the optimal solution in accordance with the customer's requirements. The detailed analysis showed that the highest whole life value system that best aligned with the customers' needs is the hybrid system.

Rinnai's latest whitepaper is designed to inform building services consultants, main contractors,

Rinnai



architects, specifiers and system designers on the wide range of technologies that can synergize together to create a long life efficient and cost-effective commercial DHW system.

Visit www.rinnai-uk.co.uk or email engineer@rinnaiuk.com

FUTURE THINKING

FOR A GREENER FUTURE.
TURNING YOUR CARBON CHALLENGES INTO SUSTAINABLE OPPORTUNITIES FOR A BRIGHTER FUTURE.

Together we can bring transparency to your operations, illuminating efficiency gaps and areas for improvement. This clarity allows us to optimise efficiency, save costs and work together towards your net zero ambitions.



Sustainability | Energy Management | Efficiency | Safety

www.spiraxsarco.com/global/en-GB



THE URGENT NEED FOR SUSTAINABLE ENERGY SOLUTIONS IN SCHOOLS AND PUBLIC SPACES

The UK's public spaces – from schools and hospitals to libraries and leisure centres – sit at the heart of our communities. They provide essential services, shape local identity, and serve as hubs of learning and wellbeing. Yet, across the country, these spaces face mounting financial and environmental pressures due to rising energy costs and the urgent need to decarbonise.

That's why the government's recent announcement of an £80 million investment in rooftop solar panels for 200 schools, alongside £100 million for NHS sites and enhanced support for community energy projects, is a significant step in the right direction. Through Ashden's Let's Go Zero campaign, which supports over 5,600 schools on their journey to becoming zero carbon, we've seen firsthand the benefits of clean energy initiatives. The reality is simple: solar on schools works. It cuts energy bills, empowers students, and strengthens the resilience of our public services. But we need to scale up and embed long-term policy support to truly unlock the full potential of sustainable energy solutions in schools and beyond.

SCHOOLS AT THE FOREFRONT OF CLEAN ENERGY SOLUTIONS

Schools are uniquely positioned to lead the transition to sustainable energy. They have large, often underutilised roof spaces ideal for solar installations and are embedded in their communities, making them natural partners for local energy initiatives. When schools generate their own energy, they not only reduce their bills but also reinvest those savings into frontline education, tackling the

Alex Green, Head of Ashden's Let's Go Zero school's campaign

ongoing funding crisis in education.

We've already seen local success stories demonstrating the power of community-led solutions. The Leicestershire Solar Schools project, in partnership with Green Fox Community Energy and Leicestershire County Council, is installing free community-funded solar panels on schools, helping them slash electricity costs and reduce their carbon footprint. Similarly, Bath & West Community Energy has installed solar panels on numerous schools, ensuring they benefit from long-term energy savings while contributing to regional decarbonisation efforts.

These examples show what's possible when schools receive the right support and funding. But too many schools are left relying on their own fundraising or navigating complex financial mechanisms to make sustainable energy projects happen. That's why greater government backing – through stable, long-term investment and clear policy frameworks – is essential to making this the norm, not the exception.

THE ROLE OF COMMUNITY ENERGY IN PUBLIC SPACES

The renewed government support for community energy is another positive development. Community energy projects, where local people own and benefit from renewable energy schemes, create local wealth, build resilience to energy price



fluctuations, and fund social initiatives. Low Carbon Hub in Oxfordshire, Repowering London, and Energise Barnsley are just a few examples of organisations successfully tackling fuel poverty and reinvesting energy revenues into their communities.

These initiatives have a vital role to play in schools. Community energy organisations often collaborate with schools, providing not just renewable energy but also education and engagement opportunities that inspire young people to take action on climate change. If we want to create a generation that understands and values sustainability, there's no better way than making schools living examples of the clean energy transition.

MOVING BEYOND START-STOP POLICY TO LASTING CHANGE

While these recent funding commitments are welcome, they must

mark the beginning of a sustained commitment to local and community energy. The UK government's Local Power Plan aims to deliver 8GW of community and local power – a hugely ambitious and necessary target. But for that to happen, we need long-term certainty. The cycle of start-stop policies in energy investment undermines confidence and slows progress. Instead, we need stable, long-term funding mechanisms that prioritise low-income communities, alongside regulatory reforms that make it easier for schools and public spaces to engage in renewable energy projects.

Public support for this transition is clear. A recent survey found that 82% of people agree that communities should own and benefit from local energy. If we align government policy with this public enthusiasm, we can unlock a once-in-a-generation opportunity to transform our public spaces into clean energy leaders.

EMBEDDING BEHAVIOUR CHANGE ALONGSIDE RENEWABLE INVESTMENT

Finally, it's important to recognise that infrastructure alone is not enough. Embedding behaviour change within schools and public buildings is key to maximising energy savings and ensuring long-term sustainability. At Let's Go Zero, we've seen how engaging students and staff in energy-saving habits – from monitoring electricity usage to running eco-clubs – creates a culture of sustainability that extends beyond the classroom.

When public spaces lead by example, they influence wider community action. Schools that adopt solar power and energy-saving measures not only cut their own emissions but also inspire families and local businesses to follow suit. This ripple effect is crucial for reaching the UK's net zero goals.

A CALL FOR URGENT ACTION

We cannot afford to delay action on sustainable energy in schools and public spaces. Rising energy costs continue to squeeze budgets, and the climate crisis demands immediate action. The government's recent commitments are a strong starting point, but they must be followed by long-term policies that provide schools, local authorities, and communities with the resources and support they need.

By investing in clean energy for public spaces, we not only reduce emissions but also create resilient, future-ready schools and communities. Let's seize this opportunity to empower schools, unlock community energy's potential, and ensure that public spaces remain beacons of sustainability for generations to come.

To find out how your school can cut bills, reduce its carbon impact and access free support and funding to go net zero, visit [Letsgozero.org](https://letsgozero.org)



**national gas
metering**

Measuring up to our promises

National Gas Metering are a major provider of industrial and commercial metering services:

 All inclusive price – no hidden fees

 Rapid response in an emergency

 Total protection – we safeguard your meter for its entire lifespan

 365 days award-winning customer service

Interested in hydrogen?

For more information contact 0121 210 3763

 **hydrogen
solutions**
by ngm

Find us online
metering.nationalgas.com

Contact us on
0800 001 4340

UK HVAC & HEAT PUMP SKILLS SHORTAGE – WHERE DO WE GO FROM HERE?

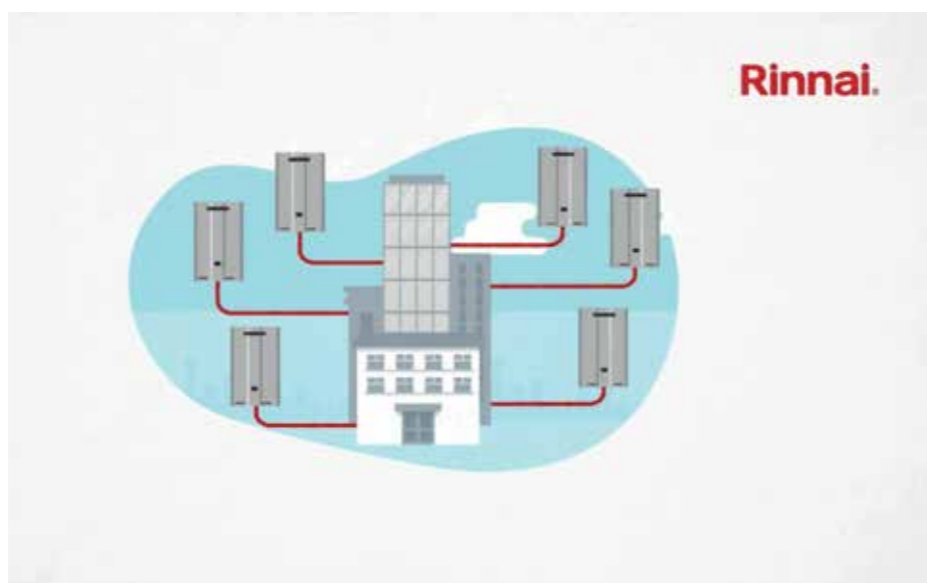
Rinnai's Tony Gittings analyses the advent of a shortage of skilled labour in the HVAC industry and specifically in heat pump installation, as well as the wider energy industry. The effect of a rising skills shortage on large infrastructure projects and national NetZero objectives may take a heavy toll.



A national skills shortage in the HVAC, heat pump installation and wider UK energy industry is a growing issue that needs close attention as it could have a very serious impact on NetZero objectives. Internal and external issues impacting the drive to carbon neutrality are usually given media and government attention in priority to the more mundane topic of training the next generation of skilled installers and contractors. One area directly related is the shortage of training and experienced heat pump installers and engineers.

The skills shortage affects two key areas that are vital components of the drive towards UK carbon neutrality. Progress in domestic and commercial heat pump installations as well as large infrastructure projects is being negatively influenced by a lack of trained professionals.

However, the number of qualified heat pump engineers has increased from just 3,000 in 2022 to 7,800 in 2023. In the first 9 months of 2024 a further 7,000 had completed a recognised qualification. For the UK to realise NetZero objectives it is estimated by



the UK Heat Pump Association that a total of 33,700 fully approved heat pump engineers is required – with at least 27,000 needed for 2028.

Despite the rise in UK heat pump installers further problems relating to skills being unused due to a lack of domestic demand is apparent. In a recent article, Charlotte Lee, chief executive of the Heat Pump Association, said “more people are training to become heat pump installers” but warned that increased consumer demand is needed

“to encourage trained individuals to become active in the workforce”.

Ms Lee continued: “Interest in the training is growing. However, there is a gap between the number of trained individuals and active heat pump installers working in the market with around 39 per cent of those who complete a training course currently not going on to install heat pumps.”

Additional factors that have influenced heat pump workforce size projections include poor government

support, retirement and senior heating engineers being reluctant to retrain. There are many obstacles in attracting qualified UK heat pump engineers and in the heat pump market that makes for installations being problematic.

Suspending or even cancelling large infrastructural projects due to a lack of recognised skilled labour is arguably a bigger challenge than attracting heat pump engineers. Huge electrical grid upgrade projects face being postponed due to a gap in skilled workers able to carry out required tasks. There are numerous projects across the UK that centre on upgrading the electrical transmission grid.

To satisfy future electrical supply and demand the UK National Grid has announced plans for the “Great Grid Upgrade.” The national grid requires adapting due to a transition away from fossil fuels through electrification. The current UK grid was designed to transport coal fired energy generated from geographically positioned power stations.

The total cost of the upgrade is thought to be around £16 Billion (Fund Calibre, Yardley, 2024) and will include grid connections to offshore wind and rural solar installations that allows for the easy transfer of renewable power to all corners of Britain.

Further electrical grid connections and upgrade projects are being pursued that will also aid in the access of renewable energy to the UK electrical grid resulting in lower customer costs. The UK and Denmark have collaborated in constructing a link – the Viking Line’ – that stretches for 475 miles joining Lincolnshire and southern Jutland.

The Viking Link required £1.7 billion of investment and is capable of powering 2.5 million UK households. National Grid estimate that the new connection



will result in £500 millions of savings for UK customers in its first 10 years by enabling a clear path of trade that compliments seasonal demand and price between the two countries. (all info available at National Grid website).

The UK and Netherlands governments have also announced plans to construct a submarine interconnection that will allow both countries to transfer and trade clean offshore wind generated electricity. The Lion Link will produce 1.8GW of energy – enough to power 2.5 million homes and is due to be operational around 2030. (Info available at National grid website)

Scottish Power will also upgrade their transmission network over the next 10 years costing £5.4 billion. These upgrades will contribute 80-85GW of clean renewable electricity to the British grid.

The UK Government is committed to decarbonising the UK electrical grid by 2030, hence the huge levels of labour and financial investment. For all this work to be completed a well-motivated and professional workforce is essential.

An article in green energy and environment reveals the gaps in skills and low morale inside the UK electrical sector. A workforce survey carried out by the public and private sector trade union Prospect demonstrates the impression held by industry professionals.

According to feedback from recipients 82% of workers inside the

electrical sector believe staffing levels are too low, whilst 69% believe there is a tangible skills shortage. Ecological website Environmental Journal included the following quote from their 2024 article on the same topic.

“Upgrading the UK’s electricity networks must be a national priority. However, the much-needed infrastructure rollout described in this report will not happen without a skilled workforce to plan, build, operate and maintain it,” said Sue Ferns, Senior Deputy General Secretary of Prospect.

For the UK to encourage domestic and commercial heat pump installation as well as complete large and meaningful infrastructure jobs, a well-motivated and professional workforce must be in place. Without a skilled selection of workers, the UK will find progress in achieving NetZero targets substantially harder and the switch away from fossil fuels much more difficult. Training a new generation of electrical and heating engineers is integral to creating growth in a carbon reduced society.

Rinnai will continue to observe UK and international energy news movement and report any information that could impact energy options or appliances. Rinnai is keen on providing all customers with a wealth of knowledge that encourages better, more informed, decision making.

Visit www.rinnai-uk.co.uk or email engineer@rinnaiuk.com

ENERGY FLEXIBILITY – ALL YOU NEED TO KNOW

As the energy sector transforms to meet Net Zero, it must pivot from a centralised, fossil fuel-heavy system to a decentralised model focused on low carbon sources. Flexibility is the bridge that can make this transition smooth, reliable, and cost-effective, helping to unlock the potential of distributed assets to meet demand without overburdening the grid.

DISTRIBUTED FLEXIBILITY – WHAT IS IT?

Flexibility is the ability to dynamically balance supply and demand, adjusting in real-time to fluctuations in demand. Traditionally, flexibility has come from the supply side, where fossil-fuel power plants could be ramped up or down to meet demand.

As we transition to a renewables-based energy system, this centralised model must change. Future flexibility will rely on 'demand-side' assets. These systems provide decentralised, distributed flexibility and adjust demand to match renewable supply. Flexibility enables renewables to be managed effectively, ensuring a consistent energy supply.

THE VALUE OF DISTRIBUTED FLEXIBILITY:

1. Managing the delivery of network upgrades: The logistical benefits of deferring reinforcement of both distribution and transmission network infrastructure.
2. Reducing capital and operational costs of the energy system: Distributed flexibility uses technologies that we would already have in our Net Zero system. Using them flexibly ensures that we maximise the use of low carbon, cheap wind and solar, avoiding expensive 'peaking' electricity generation, reducing investments in dedicated grid storage and the cost of high voltage electricity infrastructure.
3. Enhancing system resilience and reliability: The methods that we use to deliver distributed flexibility will also be vital for managing high-impact, low-probability events like if we need to re-boot the system after a black out without placing too much sudden demand on our networks.

COMMENT

by Alex Buckman, Innovative Solutions Architect – Flexibility, at Energy Systems Catapult



GETTING DISTRIBUTED FLEXIBILITY TO WORK FOR EVERYONE

Distributed flexibility is valuable, but to unlock the true potential of it, we've got to make sure that it works for everyone from consumers and system operators to those delivering flexibility within our markets. Here's what we should think about:

1. Get the flexible technologies installed – buying EVs and other flexible technologies is an important step in achieving distributed flexibility.
2. Make it available to the energy system – ensuring that technologies are both capable and available to be used as much of the time as possible.
3. Make it commercial – making sure that we can incentivise the right technologies to participate at the right times in the right places to benefit the whole system. We can break down how to make this happen into four areas:

1. **Start with the consumer.** Consumers must be at the centre of a fair, affordable transition to Net Zero. They are the only stakeholders with a veto, so the system must provide outcomes they value. This needs us to change the way we sell energy – from selling kWhs to selling things that people value – like warmth, mobility and convenience. We must make flexibility from consumer assets almost invisible, with a competitive landscape where service providers compete to provide the best outcomes.

2. **Build digital infrastructure.** We cannot build an affordable, reliable and flexible Net Zero energy system without a robust digital infrastructure. Digital solutions must be developed for real-time communication, data sharing, and automation of flexibility services.

3. **Build a Net Zero electricity system.** In our 'Innovating to Net Zero 2024' report, we showed that electricity will need to be the backbone of a low-cost Net Zero energy system. Distributed flexibility can be a tool to reduce the upfront cost and help to deliver the reinforcement that we will need to build. To do this, they need to know that the distributed flexibility that they need will be available at the time and place in the network that they need it. This involves forecasting demand accurately, understanding the spatial needs of flexibility, and enabling digital controls to manage peak load demands in real-time.

4. **Create an outcome-focused market, policy and regulatory environment.** We need a revolution in energy retail to deliver the full potential of distributed flexibility. We want an energy system that delights consumers whilst reaching Net Zero. Creating a competitive and innovative market that uses distributed flexibility to unlock profitable business models is a key tool in achieving this. A supportive regulatory environment is indispensable for unlocking new propositions that consumers love, and flexibility providers can prosper from. Increasing spatial and temporal granularity of market signals whilst lowering regulatory barriers to innovators are examples of how to make this happen.

2030 AND BEYOND

There are some amazing innovators working in distributed flexibility. Our Enabling Distributed Flexibility for Net Zero report looks ahead to make sure that they can grow and deliver the outcomes that consumers and the system need. By 2030, this new 'frontier' of flexibility needs to be fully operational across the UK, with millions of distributed assets able to automatically respond to system demands. <https://es.catapult.org.uk/>

The NEWEST addition to the Chauvin Arnoux PEL series!

The PEL113 three-phase power and energy logger is ideal for electrical diagnostics and energy audits. Identify supply issues, log demand, and reduce consumption by improving energy efficiency.

- Record all voltage, current, power and energy values
- Measure maximum demand, load balance and PF
- Get a breakdown of energy losses and individual harmonics
- Log for a few seconds to a few months



Scan to get your quote now!

OR visit our website at www.cauk.tv



From electricity generators through to consumers, the PEL power and energy loggers are very simple to interface everywhere.





ENERGY SAVINGS FOR BUSINESSES

THE BENEFITS OF SOLAR PV AND BATTERY STORAGE

In today's fast-paced world, businesses are looking for sustainable ways to cut costs and reduce their carbon footprint. One popular solution is installing a commercial solar PV rooftop system with battery storage. This setup offers many benefits, such as saving money, increasing energy independence, helping the environment, and providing flexibility and efficiency in energy use.

By incorporating a commercial solar PV rooftop array, businesses can generate their own electricity and significantly reduce their dependence on the grid while lowering energy costs. Solar power enables businesses to harness clean and renewable energy from sunlight, thereby reducing or

even eliminating electricity bills. The initial investment required for installing the system can often be recouped within a few years through these cost savings, leading to increased profitability and improved financial stability.

In this case study, *Julian Grant, General Manager at Chauvin Arnoux UK*, explains how the data from a three-phase PEL provides crucial insights into energy consumption, peak demand times, usage patterns and opportunities to improve energy efficiency while considering installation of solar PV arrays and battery storage.

Integrating a battery storage system with the commercial solar PV array offers businesses greater energy independence and enhanced reliability,

Excess solar energy generated during the day can be stored in batteries for use during periods of low solar generation or at night. This stored energy ensures a continuous power supply, reducing reliance on the grid and protecting against power outages. By having a reliable and self-sustaining energy source, businesses can maintain critical operations, improving overall productivity and customer satisfaction.

Apart from reduced energy bills and reliance on the grid, one other significant advantage of commercial solar PV rooftop arrays is their positive environmental impact. Solar energy is a clean and renewable energy source that produces no greenhouse gas emissions during operation. By transitioning to

solar power, businesses can contribute to the global effort to combat climate change, reduce air pollution, and conserve natural resources. Embracing sustainable practices and reducing their carbon footprint enhances the company's environmental reputation, attracting eco-conscious customers and stakeholders who value businesses that prioritise environmental responsibility.

Commercial solar PV rooftop arrays offer businesses scalability and flexibility to adapt to changing energy needs. With available roof space, companies can easily expand their solar capacity by adding more panels. This allows them to generate additional electricity to meet growing demands. The modular nature of solar systems enables businesses to incrementally increase their capacity over time, aligning with their future growth plans and energy requirements. The flexibility provided by commercial solar PV systems ensures long-term suitability and the ability to scale up as needed.

THINKING ABOUT SOLAR PV? HERE'S HOW YOU CAN GET STARTED!

Before embarking on a solar PV project, businesses must first gain a comprehensive understanding of their electricity usage patterns by measuring consumption throughout the day and night, assessing variations on a daily, weekly, and monthly basis, and identifying seasonal fluctuations due to factors such as lighting, heating and air-conditioning.

This is best achieved using a portable power and energy logger from Chauvin Arnoux, a powerful instrument that measures and records key parameters such as voltage, current, power, and energy usage. The data from it provides key insights into actual energy usage patterns like identification of peak demand periods, usage trends, inefficiencies, and opportunities to improve energy efficiency.

The energy consumption data collected by the three-phase PEL also plays a crucial role in specifying the sizing of a commercial solar PV array. It enables businesses to estimate the required capacity of the solar panels to generate sufficient electricity to meet their energy demands. By considering factors such as the available roof space and orientation, solar irradiation levels, and energy usage patterns, the data procured from a Chauvin Arnoux power and energy logger ensured that the solar PV system is appropriately sized for maximum energy generation and cost savings.



Incorporating a battery storage system into a commercial solar PV array further enhanced energy independence and reliability. In this scenario, the three-phase PEL helped determine the required capacity of the battery storage system by logging energy usage data during non-sunlight hours. This data provides insights into the amount of stored energy needed to meet the premises' energy demands during periods of low solar generation or high consumption.

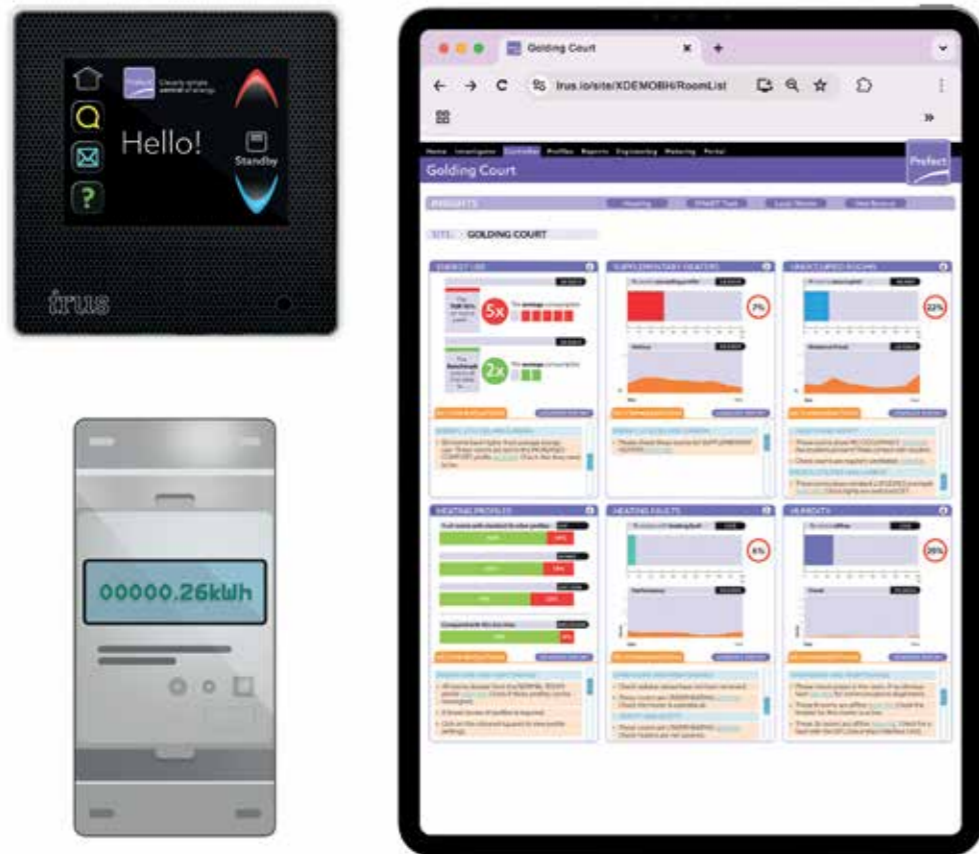
To conclude, investing in a commercial solar PV rooftop array and battery storage system can offer businesses a wide array of benefits. The

significant cost savings achieved through reduced electricity bills, enhanced energy independence, and reliability, make solar power an attractive solution.

Moreover, embracing solar energy contributes to environmental sustainability by reducing carbon footprints and supporting the use of clean, renewable energy sources. This way, businesses not only boost their profits but also come across as sustainability leaders, further drawing in eco-friendly customers and partners who appreciate a commitment to a greener future.

Learn more: <https://cauk.tv/pel-113/>





'HOW' IS MORE INSIGHTFUL THAN 'HOW MUCH'

Metering electricity and water in student accommodation offers numerous benefits, for property owners and residents alike. The most obvious being the potential to charge directly for individuals use. Enacting behavioural change to reduce overall consumption is also made possible when data is analysed and presented to occupants. This helps to educate a generation to manage their relationship with resources, preparing them for future independent living.

A building energy management system that is present in every room can engage with 100% of residents, unlike apps, where the collection of data is dependent on the compliance of occupants.

Creating awareness of the resources consumed encourages responsibility and offers advantages, ranging from cost-saving to promoting a consciousness of utility value.

In many student properties, utilities are included within the rent, but this can lead to inefficient use. If something is considered free there is no incentive to acknowledge its cost! When students don't pay directly for their electricity and water, they may be less mindful of their usage.

The shift towards more sustainable practices contributes to significant reductions in overall consumption, which is important in the context of rising environmental concerns. Over time, this hopefully leads to an eco-conscious society that takes energy and water conservation seriously in its daily life.

Combining metering with a communication strategy is being used to encourage behavioural change. Informing occupants of their peer's average consumption and making them aware of their own leads to lights being turned off, less time spent in the shower, or dressing more appropriately for the time of year. When enlightened, there is a greater

tendency to adopt habits that minimise unnecessary consumption. This translates to less water and electricity being wasted, benefiting the environment by reducing the demand for energy generation and water treatment processes.

For property owners, metering utilities helps to manage operational costs. Operators no longer rely on estimates, or risk covering the cost of excessive consumption. Data is collated based on actual usage, increasing precision in predicting demand, therefore, greater accuracy during procurement.

Prefect Irus has recently added three features that uniquely make all the above possible.

- **Modbus connected energy and water meters.** Quantity of consumption data feeds back to the Irus Portal on a block, floor, flat or room basis.
- The **Irus Optimiser** software tool returns insights from automatically analysed data. **High consumers** are



A wide group of people working across all areas of the Public Sector – to educate, train, support and connect as we work towards a more sustainable future.

Join us today

www.pssa.info



identified, **Heating Profile** allocation is highlighted, and **Occupancy levels** presented. It even brings to attention rooms suspected of using **supplementary heaters**. Recommendations are given on how to act to optimise building services performance.

- The new **ControlSensor**, situated in every bedroom, kitchen, and communal area, features direct-to-room communication so that individual occupants are made aware of their use and advised on how to become more resource-efficient.

Irus provides a twin energy conservation approach. Metering – helps identify problems or over-consumption, while control – physically switches heat sources off when energy isn't required. Operators have complete visibility of utility use and can act on issues accordingly.

Understanding 'how' energy is being used is much more insightful in solving efficiency conundrums, than simply knowing 'how much'.

Utilising the same infrastructure for control and metering is cost-effective in terms of capital investment and installation, providing a one-stop easy to use platform for energy management.

For environmentally conscious students who prioritise sustainability, metered utilities make accommodation more attractive. Many are fully aware of climate change and environmental impact and would prefer to rent a space where knowledge helps them manage their own consumption. Properties that actively encourage energy efficiency and responsible consumption are likely to attract tenants who share these values. www.prefectcontrols.com

Spend half your energy budget on things you need, rather than energy you don't need.

Read how we **halved heating load** and **saved £70K in 12 months.**



Cleverly simple
control of energy.

prefectcontrols.com

irus
Building Energy
Management System



SMART Energy Meters for Landlords

The smart way to meter, measure and manage energy resources for Councils and residents alike.

What's the simplest way for you to offer residents a simple but secure opportunity to pay for their gas or electric? The smartest solution undoubtedly comes from Energy Controls; making it easy for customers to pay for their energy while they're relaxing at home.

And it couldn't be more straightforward or more rewarding.

Pay-As-You-Go

Whether you're looking to streamline your energy overheads with **automated meter readings or get paid upfront** using the latest prepayment system, Energy Controls has the products and expertise to help. They have a fully hosted, web-based software solution linked to market-leading Payment Platform that enables property managers to offer tenants a simple 'Pay-As-You-Go' solution for making energy payments.

Energy Controls' award-winning SMART meters are ideal for all types of sub-metering applications, ranging from blocks of flats to travellers sites and social Housing.



- **Get paid upfront for your energy supplies**
- **Tenants can Top-up online or via our FREE app**
- **Cashless money transfers directly into your bank**
- **Emergency Credit feature**
- **Remote disconnect/reconnect of power supplies**

Business Booster

Energy Controls have been trading for 33 years and are now the leading Supplier of prepayment metering systems to the Landlord sector.

They have invested heavily in an IT infrastructure that delivers a secure, reliable and robust online payment solution which in turn gives the Council and residents alike immediate access to their energy usage data around the clock.

Energy top-up payments can be made online anytime from anywhere using the **FREE App**.

"The prepayment opportunity that our SMART Meters offer our customers provides an instant boost to cash flow" **Chris Smith, Managing Director.**



Accurate Data

The Energy Controls' SMART meter portal enables Property Managers and tenants to monitor their energy usage trends, on the go **from anywhere and at anytime.**

Our **online payment platform** integrates seamlessly with PayPoint to allow users to top up their meters securely, online or using our **FREE App**. A variety of energy usage and financial reports are generated automatically and are sent directly to customers on a regular basis.



Happy Customers

But you don't have to take Chris's word for it. Simply read what the Gypsy and Traveller Team Manager for West Sussex County Council had to say:

"Working with Energy Controls, we have introduced a new cashless PayPoint system for the SMART meters at our Traveller Sites. This system has been a huge improvement for the Council because not only does this mean our staff no longer have to handle cash, the PayPoint service gives our residents greater flexibility and independence. I would not hesitate in recommending Energy Controls and their products and services."

The Manager at Southend YMCA went even further:

"Energy Controls supply 21st century thinking and a great web based service, with lots of useful functions, allowing you to see how much energy has been consumed on an individual basis. We highly recommend Energy Controls to any business. The whole experience of having the latest metering system installed was too good to be true and very straightforward."

Fit for FREE

Energy Controls is happy and well equipped to offer a complete service from free survey to installation, together with full training and after-sales support.

Why not email us at: sales@energycontrols.co.uk to see if you qualify for a 'Fit for FREE' supply and installation service. It could be the happiest move you ever make!

0345 2304535
07879 400150
sales@energycontrols.co.uk
www.econtrols.co.uk



ENERGY
CONTROLS

TURNING CORPORATE RENEWABLE ENERGY OWNERSHIP ON ITS HEAD

Rather than asking if a business can afford to supply its own renewable energy, the question should be can it afford not to?

Bruce Woodman, Managing Director of low carbon energy specialists, Pure Energy Professionals (PEP), looks at the benefits of Corporate Renewable Energy Ownership and proposes a proven pathway to securing low-cost clean energy for the long term.



Companies continue to seek ways to insulate themselves from rising and volatile global energy markets, while providing a more secure and sustainable future for employees, shareholders, suppliers and customers. And the answer for many lies in Corporate Renewable Energy Ownership (CREO).

WHAT EXACTLY IS CREO?

CREO is where a business produces its own clean energy for self-consumption to reduce grid electricity and, potentially, gas purchases. In-house renewables ownership allows a company to gain and retain greater control of their electricity,

In-house renewables ownership allows a company to gain and retain greater control of their electricity

heat and fuel supplies. This ultimately results in better financial budgeting and reduces the impact of unforeseen price spikes. It also provides a direct route to getting carbon emissions down, setting a practical course to deliver net zero goals.

CREO – A COMMITMENT THAT GOES BEYOND GREENWASHING

Owning sufficient renewable energy generation – typically large scale wind and solar PV – sends a strong message about a company's commitment to sustainability and the future of its business.

Yet, the question arises, does CREO pay? With a good nearby wind and solar resource within 5 to 10km, the answer will almost certainly be "yes". The cost of generating power and transporting it to the site of use will likely be lower than grid electricity, with a more predictable price long into the future. It will also be genuinely "green".

While at country level, the UK and others have legally binding obligations to reach net zero in 25 years' time, individual businesses also need to achieve their own net zero targets – regardless of whether national systems are able to decarbonise in that timeframe. But rather than ask if a business can afford to supply itself from renewables, the question should be 'can it afford not to?'

Along with the quality of the nearby wind or solar resource, the biggest influence on energy cost is the cost of capital. If that can be fixed long-term then the year-to-year variability should be small. Then the company has the benefit of low-carbon energy for the foreseeable future, as well as a handle on energy budgets. The business can then be largely immune from energy market volatility.

Renewable energy infrastructure is capital intensive – and sufficient investment for large scale decarbonisation may not be readily available from internal resources. It is common for renewable energy projects to be funded to a large extent by limited recourse loans secured on the project cashflows, and ultimately the assets themselves, rather than a corporate guarantee.

BEGINNING A CREO STRATEGY

Understanding the nature of an organisation's demand and specific site usage is crucial from the very start. It enables the scale of generation to be assessed and onsite or nearby locations to be evaluated. Once the company's overall energy consumption profile is



Owning sufficient large scale wind and solar PV sends a strong message about commitment to sustainability

known, the usual start point is the site where energy consumption is highest. The site itself and surrounding area can be quickly assessed for its suitability for renewable energy generation. If it becomes clear that there are no options, then the next largest point of consumption can be assessed, and so on.

Having identified a site, an initial desktop study covers key development issues, considering design options and potential risks. If the site appears worthwhile, landowners – most of whom are positive about earning long term lease payments – are approached. Furthermore, energy infrastructure that directly supports local businesses, investment and employment is typically more acceptable to local communities than projects backed by comparatively faceless national or international power developers.

Once the planning stage is completed, the project can move ahead to financing, procurement, construction and operation. A skilled and experienced renewable energy generation partner will assemble an expert team to ensure smooth running and optimal value, including the necessary permits, land and grid agreements.

LESSONS FROM CREO PIONEERS

Connecting renewable energy generation directly to a company's



CREO is where a business produces its own clean energy for self-consumption to reduce grid electricity

premises is not new. It is a proven path for early pioneers such as AG Barr, Asda, and Tesco. IKEA is a notable early and large adopter. The Swedish furniture retailing giant has engaged PEP as its renewable energy specialist for over 15 years across whole project lifecycles in North America and most of Europe, as well as the UK. Today, IKEA has a multi-billion initiative to target 100 percent renewable energy consumption across its whole value chain and beyond. IKEA's largest franchise holder, Ingka Investments, has also invested and committed more than €4 billion into renewable energy projects to date.

In addition, PEP supported Aviva Investor's entry into renewable energy generation, providing investment support, construction, operations and asset management for many years across 25 UK wind projects. www.peprenewables.com

UK PLAN FOR REGIONAL ENERGY DEVOLUTION

Chris Goggin provides an overview of plans to devolve regional energy decision making to local authorities. What this action could mean for wider national NetZero objectives and what potential effects on local fuel options will be explored. This article will pose questions as to this – will the introduction of a new decentralised system will be successful or not?



A full plan to devolve power to a local level has been published by the current UK government entitled: “English Devolution Whitepaper.” The document details how the current centralized UK government system can transition into a more fluid and localized form of governance that is more sensitive to regional requirements.

Currently all major decision making relating to regional and local policy is set by centralized government agencies. Future devolved regional authorities will be more aware of local demands and will provide relevant solutions designed to interact with the local environment and economy. Town mayors could become pivotal figures in policy enforcement.

Devolution in the UK is not a new concept and at one point in recent history the UK employed a decentralised system of local

governance. Upon Margaret Thatcher becoming Prime Minister in 1979 the then Conservative government began decentralising local authorities and began transferring regional and local decision making towards Whitehall.

An article published on the BBC website on the 14th of December 2024 describes how and why the current UK Deputy Prime Minister Angela Rayner is keen on introducing local mayors equipped with powers that can immediately stimulate economic growth. Within the interview Deputy Prime Minister Angela Rayner described the UK as the “most centralised country in Europe and pledged to end micromanaging by central government.”

The BBC article continues: “Under the proposals, the government also wants to merge areas where there are currently two tiers of local authority – smaller district and larger county councils – in a bid to streamline services.”

The “English Devolution Whitepaper” details new powers regional authorities will hold regarding localized energy matters:

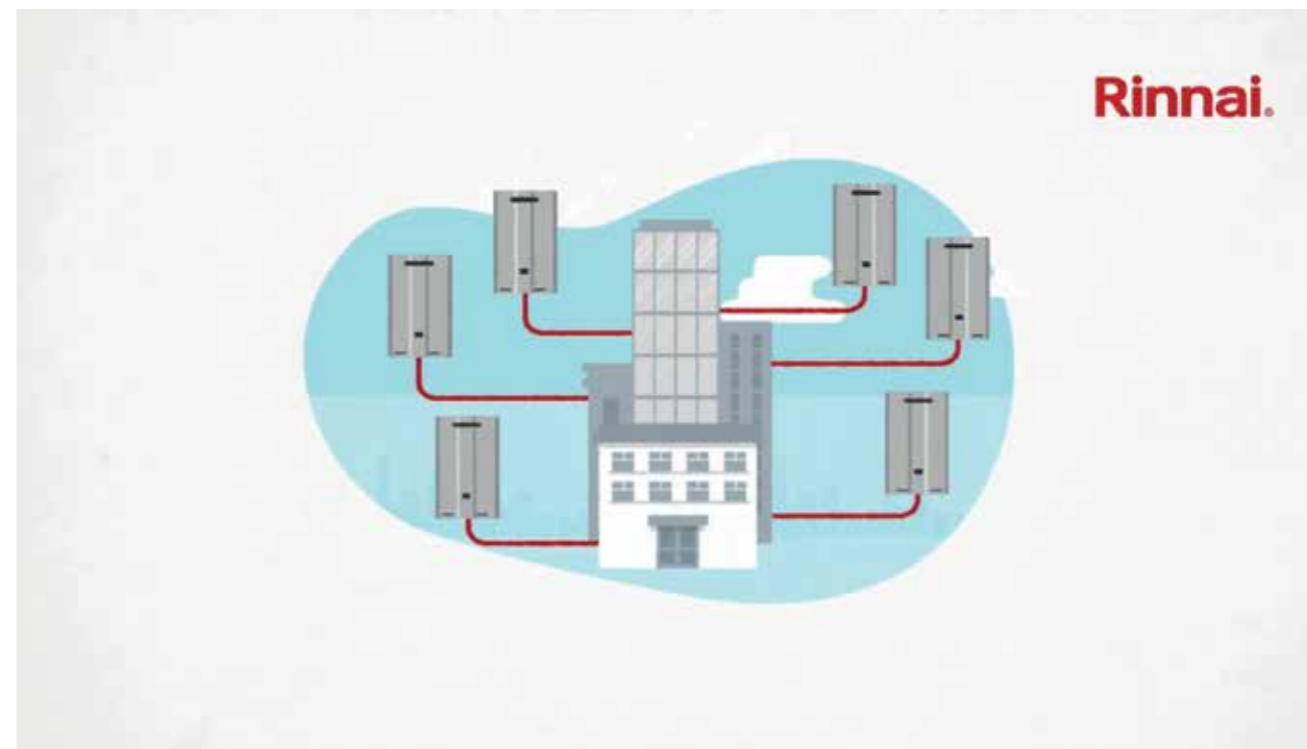
- Control of retrofit funding as part of the Integrated Settlements, providing a strengthened route to local delivery of the Warm Homes Plan.
- Strategic Authorities will have a strategic role in the delivery of the Great British Energy Local

Power Plans, delivering local sustainable energy generation.

- They will also have a role in the wider energy system, delivering our transition to Net Zero, become the zoning co-ordinators for local heat networks, and with their plans taken into account in the National Energy System Operators’ Regional Energy Strategic Plans.
- Finally, we will expand Strategic Authorities’ role in leading Local Nature Recovery Strategies.

Two UK areas that have been granted evolution are York and North Yorkshire who have combined to create the YNYCA (York and North Yorkshire Combined Authority) and have been overlooking local and regional matters since 2022. The YNYCA is committed to becoming a NetZero region by 2034 and carbon negative by 2040.

To achieve this objective the YNYCA has launched several initiatives that will assist in reducing the region’s carbon load. In 2023 a NetZero fund consisting of £7 million was made available to carbon reducing projects across the region. The YNYCA have also launched the £10 million Carbon Negative Challenge Fund which is designed to accelerate the introduction of carbon reducing technology and systems. The scheme was set up in 2024 and will run to 2028. Devolution has enabled local funding to be directed towards localized issues.



A part of this funding focuses on decarbonising commercial buildings with a selection of energies and technologies including heat pumps and green hydrogen. This will ensure that localized gas consumption is reduced whilst still being able to utilise current infrastructure.

Within the idea of decentralizing decision making in English regions the issue of energy could present a variety of challenges towards national NetZero aims. UK energy decisions are currently made up by a national government that views energy distribution along national requirements – not regional.

For example, the rural east of England is made up of vast amounts of flat farmland which has access to regular sunlight. These conditions mean the area is ideal for solar power generation. Coastal areas with steep inclines will be better suited towards offshore and onshore wind manufacturing. Yet both landscapes are currently reliant on natural gas for energy customers who reside in these areas.

In a decentralized approach the region’s requirements will be considered. For example, if a natural gas based northwestern UK industrial city gains access to a successful hydrogen economy, hydrogen could become the easiest way to heat homes and businesses.

Although devolution can be regarded as a more informed and fluid form of governance potential friction between national NetZero goals and local energy demands could become apparent.

What happens if a certain area authority prefers to use cost effective but environmentally harmful natural gas instead of renewables? What happens if an economically split region adopts an expensive decarbonising solution? And what happens if new and stringent NetZero aims are introduced forcing national government to enforce devolved councils to adopt certain strategies not consistent with their own.

Future legislation could be approved at a local and regional level across the UK soon, meaning that energy options could become far more relevant to the constituent. This means that local authorities will be pressured into delivering what is popular with constituents, not what is necessary for the region.

The UK would prefer a form of decentralised authority that is free from problems faced by the French model of regional power. Because power has been divided between a number of decentralised entities, French local authorities are part of an overly complex structure of governance with many financial routes making fiscal accounting difficult.

Devolving regions to govern local energy affairs is in theory a good idea that negates poor solution selections that do not meet local customer and infrastructural requirements. However, there is a possibility for future friction regarding national NetZero aims, local energy options and therefore costs that could arise from a UK decentralized energy approach.

National NetZero objectives are currently enshrined in law and therefore have to be obeyed – however, an approach that is centred on regional autonomy cannot comply with previously agreed policy that is supposed to affect national energy options. The two ideas would appear to be incohesive.

Constituents in the regions and cities could potentially demand energies that will have to be delivered even if those sources of power are negatively considered. Town mayors and locals alike will hold power in decision making regarding these issues – it is highly likely that cost will be the principal concern that dominates energy usage approval.

Rinnai offers a selection of technologies capable of accepting a variety of energies that are to be included within the UK energy mix and are currently being used in domestic and commercial applications. Rinnai will continue to search for and present solutions to UK customers who require decarbonising technology. www.rinnaiuk.com

Rinnai.



WHY ARE WE NOT USING CARBON NEUTRAL OR CARBON NEGATIVE GAS TO DECARBONISE INDUSTRY?

The race to decarbonise our energy demands is becoming increasingly competitive. As companies build their decarbonisation strategies, they become increasingly vaguer as they try to reduce their emissions to Net Zero. Opening the conversation to discuss the myriads of solutions available can address this challenge today. Biomethane and renewable gas being one of those solutions.

Reduce. Replace. Offset. A three-step process that forms the foundation of most energy decarbonisation strategies. But when we analyse our decarbonisation strategies, we only address the “reduce” and some of the “replace”. Following the guidance on decarbonisation from the Oxford Principles, we should look at all three-steps today.

Replacing fossil-based methane (natural gas) demand is frequently a roadblock in the path to Net Zero. The UK economy’s reliance on gas makes its removal a complex undertaking. This is for a plethora of reasons including the capital costs or inability to make the infrastructure changes to electrify because of the layout of or age of facilities or premises, the effects of using electrified solutions on the final product, requiring further product development, or the inefficiency/lack of suitability of alternative solutions.

Biomethane can solve these challenges and takes businesses to Net Zero. Using biomethane is a versatile solution for any gas user connected to the gas grid. A Gas Purchase Agreement (GPA), like a PPA, enables the shipment of biomethane to any gas user connected to the gas grid, decarbonising their Scope 1 emissions. By mass balancing the biomethane injected and the gas used, it is a simple mechanism to attribute biomethane use to an off taker.

For biomethane production that includes carbon capture and storage, this is a source of net-negative gas, and the GPA with mass balancing



is the instrument to attribute those carbon savings to an off taker.

Given the significant value of this gas as a decarbonisation tool, why are we not using more of it?

The answer is with the acceptance of GPAs, both with regulators and in the wider market. This risk can be too high for some to consider this energy and decarbonisation solution. This problem needs to be addressed by the UK government, who can mitigate the risk by acknowledging their acceptance of GPAs, as is the case already in the European Union. Ideally, this would be on the provisions that:

1. The producer and end user are connected by a continuous pipeline that can trace the movement of the gas
2. We bundle the commodity, the gas, and the renewable credentials—green gas certificates and proof of sustainability (POS)—together for transparency and verification.
3. The biomethane production is free from government subsidy
This would remove the risk of greenwashing and put the UK economy at the global forefront of decarbonisation.

The government will address the acceptance of GPA soon, but businesses need to start the conversation now if they want to get a GPA in place before 2030. This is because once the government makes its intentions clear, a floodgate of interest in biomethane will occur and only those who make the move first will get access to a supply.

For those with Emissions Trading Scheme (ETS) obligations, the allowance trajectory and the scope of businesses with an obligation is set to change as we approach 2050 in line with the UK Government’s legal commitment to Net Zero. This will result in fewer allowances available, plus the removal of free allowances in 2026, and increasing demand from newly obligated industries. Thus, the price of allowances will increase and can expose businesses increased financial risk.

Coupling this with increasing market instability from geopolitical conflict, key political changes, and the UK’s increasing dependence on imported gas and elimination of coal will increase the cost of continuing operations as usual.

Therefore, the first movers, with the ambition to future proof their business, will have the competitive advantage. www.futurebiogas.com

SOCIAL HOUSING: THE UNEXPECTED ENERGY EFFICIENCY TRAILBLAZER

When it comes to upgrading the UK’s ageing housing stock, social housing might not be the first place people think of when expecting to find bold climate action. But it should be, and it’s where technologies that will decarbonise heating for the whole country are already proving what’s possible.

While much of the private housing market continues to debate the “how” of decarbonising and improving energy efficiency at scale, the social housing sector has quietly got on with it. Confronted with complex, often pre-1980s building types, tight budgets, and the responsibility of supporting some of the country’s most vulnerable residents, housing providers have turned challenges into opportunities, proving that energy efficiency, climate ambition, and delivering warmer homes can go hand in hand.

Today, nearly three-quarters of social housing properties are EPC-rated A to C. That’s not just a measure of success; it’s proof the sector is leading the way in tackling fuel poverty, cutting carbon, and delivering better homes and environments for tenants – with low-carbon heating playing a major part.

WHY IS SOCIAL HOUSING LEADING THE WAY?

This progress hasn’t happened by chance. It’s been driven by a mix of purpose, policy, scale, and a commitment to improving lives. Supported first by the Social Housing Decarbonisation Fund (SHDF) and now through the £1.29 billion Warm Homes Social Housing Fund (WH SHF), the sector has shown how targeted government funding can deliver better, more energy-efficient homes for hundreds, even thousands of people at a time.

Building on the success of previous SHDF waves, the WH SHF supports measures including low-carbon heating, improved insulation, ventilation, and whole-building upgrades. This joined-up, mass-scale approach has underpinned the sector’s high EPC performance and delivered some of the country’s most efficient retrofit homes – often in buildings you wouldn’t think would be possible.

EFFICIENCY THAT DELIVERS

Upgrading entire buildings in one go not only makes sense but can also have a transformative impact. At Kensa, we’ve seen this first-hand, integrating our networked ground source heat pump model as part of the whole-building decarbonisation challenge. Today, around 30 UK tower blocks are receiving efficient, low-carbon, low-cost warmth from this system, and two stand-out examples show this in practice:

- At Sutton Dwellings in Chelsea, Clarion Housing retrofitted 81 Edwardian-era flats across four blocks, installing Kensa’s compact ground source heat pumps alongside other energy efficiency improvements. The challenge: improving a heritage site without compromising its character, in a space-limited, urban environment. The result: warm, efficient homes with modern, low-cost heating and hot water.
- In Thurrock, 273 flats across three 1960s tower blocks had outdated night storage heaters replaced with the same networked heat pump system – but at a greater scale. Many residents had faced eye-watering bills, but after the upgrade these dropped by up to 66%. Paired with insulation and ventilation improvements, the project delivered a full-building uplift in performance and gave residents homes they could afford to heat.

These projects show what’s possible and offer a blueprint for other providers. By using scalable solutions that cut carbon, tackle fuel poverty, and meet energy standards, Thurrock Council and Clarion Housing are meeting decarbonisation targets and improving the lives of their tenants.

LESSONS FOR THE WIDER SECTOR

Social housing providers have demonstrated what’s possible, with the right scale, strategy and support. By upgrading whole estates and buildings, they reduce disruption, secure better pricing and make a long-term investment while progressing towards net zero goals.

The private sector, in contrast, often upgrades one home at a time – a slower, more expensive, and harder-



Dr Stuart Gadsden, Commercial Director, Kensa

to-coordinate approach. To accelerate national progress, we need to apply social housing’s lessons more widely:

- Retrofit at scale to reduce cost and disruption
- Pair insulation with efficient, low-carbon heating for warmer homes and lower bills

THE ROAD AHEAD

There’s still more to do. Thousands of social homes remain poorly insulated or reliant on inefficient heating. Continued funding, policy certainty and support for innovation will be essential.

The WH SHF is a crucial step. Its potential to upgrade more homes and save huge amounts of carbon a year proves its value. But with no further funding expected before 2028, housing providers will need long-term clarity to plan with confidence and keep up the momentum.

LEADING THE WAY AND SHOWING WHAT’S POSSIBLE

Social housing has proven that decarbonising and delivering better homes at scale isn’t just possible – it’s happening now. Through coordinated investment, careful planning and a focus on residents, the sector has become a blueprint for sustainable, affordable housing transformation.

The rest of the market now needs to catch up. With the right support, funding and policies, private landlords and homeowners can follow this lead and create a future where every home is warm, energy efficient, and built for the climate challenge ahead. www.kensa.co.uk

DELIVERING THE UK'S ENERGY TRANSITION: A PATH TO CLEAN POWER

Amidst the crackle of November fireworks, the National Energy System Operator published a significant report, offering advice to Government on what needs to be done to realise its 2030 clean power ambition. Though the target is achievable, the report notes it will nonetheless 'push the limits' of what is feasible, necessitating not only significant annual investment and planning system reforms, but – crucially – upgrades to the grid, too.

The last point is instructive and reflects the critical moment the UK has reached in its energy transition. Generating more electricity from renewable sources is one thing, but it is only part of the solution. Indeed, to fully realise the benefits of a net-zero energy system, we must modernise the electricity grid, accelerate storage deployment, and invest in new technologies that maintain system stability. This is how the UK can achieve the energy transition while ensuring security, affordability, and reliability.

The first priority is expanding and upgrading grid infrastructure. After all, the UK's electricity network was designed for a centralised system where large fossil fuel power stations distributed energy across the country. Today, the picture is decidedly different, with the challenge now being to integrate thousands of renewable energy projects efficiently and ensure that electricity flows smoothly from where it is generated to where it is needed.

Meeting this fresh challenge may require faster access to grid connections, reducing the delays in new renewable, stability and storage projects coming online. At the same time, upgrading power lines to move clean energy across the country may be required to provide stronger transmission capacity along with the deployment of smart grid technology – using AI and real-time data to balance supply and demand efficiently, for instance – will help support the grid.

In short, by investing in a more flexible, responsive grid, the UK will be able to ensure that clean energy can be delivered at scale without bottlenecks or delays.

Sonia Quiterio, Director of New Business, Conrad Energy



The second key focus is energy storage. Renewables generate electricity when the wind blows and the sun shines, but demand does not always align with supply. To square this particular circle, expanding battery storage capacity will be essential to ensure that clean energy is available when it is needed. Batteries store surplus electricity during periods of high generation and release it back into the grid when demand rises, reducing reliance on non-renewable sources.

New market conditions and system needs must support faster deployment of battery projects, creating the right incentives for investment in both large-scale grid storage and smarter distributed systems that can provide flexibility at local levels. The UK has already made progress in this area, but to reach its clean power targets, battery deployment must scale up significantly in the coming years.

Another crucial part of the transition is maintaining grid stability. Historically, synchronous fossil fuel plants played a key role in keeping the electricity system stable by providing inertia: a force that helps prevent sudden frequency changes. As these plants close, new technologies must take their place to ensure the grid remains secure.

Happily, the UK is already leading the way in deploying clean stability solutions, including synchronous condensers

OCGT & CCGT retrofit – 0MW solutions; grid-forming battery inverters; and real-time frequency response. Scaling up these technologies will ensure that the UK can transition to 100% clean power without compromising reliability and stability of the UK electricity system.

Achieving the energy transition is not just about reducing emissions – it is also a huge economic opportunity. The UK has the chance to become a global leader in clean energy technology, grid innovation, and battery storage, creating thousands of high-skilled jobs and attracting investment. By modernising infrastructure and accelerating the deployment of new technologies, the UK will build a secure, affordable, and resilient energy system fit for the future.

And this cuts to the heart of the issue: the UK is facing a renewable energy moment. To stay on track for clean power by 2030, the UK must look beyond renewable energy generation, modernising the electricity grid, accelerating storage deployment, and investing in new technologies. By acting decisively, the UK will not only meet its clean energy targets but could help set the standard for the world's energy transition. <https://conradenergy.co.uk/>



Image by Nicole Streit from Pixabay.com

Steps to become a Master in Renewable Energy

IN 18 MONTHS OR LESS

STEP 01 Enrol onto your Master Award

Enrolment onto the Master Award takes only 5 minutes, and can be done online.



STEP 02 Access your 15 courses

You will have up to 18 months to complete your courses, so you can study flexibly around other commitments.



STEP 03 Pass your GMC exams

Exams are 30 minutes and are designed to test your knowledge on the subject area taught.



STEP 04 Achieve your Master Award

Once you have passed the exams for a minimum of 12 GMCs, you will receive your Accredited Master in Renewable Energy Award.



WWW.RENEWABLEINSTITUTE.ORG



The Renewable Energy Institute

Join professionals from over **150 different countries worldwide** and enrol onto the award-winning **Master in Renewable Energy Award** from the Renewable Energy Institute.

You will gain access to **15 accredited** renewable energy and energy efficiency training courses designed to further your career in the sector.

All courses are accredited by the **CPD accreditation service**. By studying the Master in Renewable Energy Award, you will accrue a minimum of 280 CPD hours.

For more information, head to www.renewableinstitute.org/training/accredited-master-in-renewable-energy-award/ or contact us by phone on **+44 0131 446 9479** or by email at training@renewableinstitute.org



Photo by Karsten Würth on Unsplash

EMERGING TECHNOLOGIES FOR SUSTAINABLE STEAM GENERATION

THE FUTURE OF STEAM: REDUCING CARBON & CUTTING COSTS

As industries across the UK and Ireland strive towards Net Zero, the way we generate and use steam is evolving. Steam remains the backbone of countless manufacturing and process operations, but emerging technologies are reshaping its sustainability and efficiency. The good news? Cutting carbon doesn't have to mean cutting into profits. With the right solutions, businesses can reduce emissions and drive long-term cost savings simultaneously.

HOW STEAM TECHNOLOGIES DELIVER CARBON REDUCTION & COST SAVINGS

Decarbonisation is high on every

agenda but achieving it while maintaining operational efficiency and managing costs can be a challenge. Fortunately, the latest steam generation technologies are proving that sustainability and financial viability go hand in hand.

1. High-Efficiency Boilers & Alternative Fuels. Traditional boilers are being replaced or upgraded with high-efficiency models that significantly reduce fuel consumption and emissions. The integration of hydrogen-ready and biofuel-compatible boilers allows businesses to transition smoothly towards greener energy sources without major overhauls. Modern condensing boilers can achieve efficiencies of over 95%, capturing latent heat from flue gases that would otherwise

be lost. Meanwhile, alternative fuels such as biogas, synthetic methane, and green hydrogen offer viable pathways to significantly reduce carbon footprints while ensuring energy security.

2. Electrification of Steam Generation. With grid decarbonisation advancing, electric steam boilers are an increasingly viable option. They eliminate combustion-related emissions and offer precise control, making them an excellent fit for sites with access to renewable electricity or carbon-free energy contracts. Advances in electrode boiler technology enable rapid steam generation with high energy efficiency, reducing the reliance on fossil fuel-based generation. Coupling electric boilers with

renewable energy sources or battery storage solutions can further enhance their sustainability credentials.

- 3. Heat Recovery & Reuse.** Capturing and repurposing waste heat is one of the most cost-effective ways to improve steam system efficiency. Technologies such as economisers, flash steam recovery, and condensate return systems help businesses reduce energy demand while lowering fuel costs and emissions.
- Economisers recover heat from exhaust gases to preheat feedwater, improving overall thermal efficiency.
 - Flash steam recovery captures excess steam from condensate return systems, reducing energy waste and fuel consumption.
 - Condensate return systems recycle hot condensate, reducing water and chemical treatment costs while enhancing system efficiency.
- 4. Smart Steam System Control & Digitalisation.** Advancements in digital steam management provide real-time insights into system performance, allowing operators to optimise usage, detect inefficiencies, and prevent costly energy losses. Smart monitoring ensures that steam is used precisely when and

where it's needed, minimising waste and maximising efficiency. The integration of Industrial Internet of Things (IIoT) sensors, AI-driven analytics, and cloud-based monitoring platforms enhances visibility into steam systems. These technologies enable predictive maintenance, reducing unplanned downtime, and improving overall equipment lifespan.

BALANCING CAPEX & LONG-TERM OPEX BENEFITS

Investing in sustainable steam generation requires careful consideration of both capital expenditure (CAPEX) and operational expenditure (OPEX). While some emerging technologies may require upfront investment, the long-term returns often far outweigh the initial costs.

- **Energy cost savings:** Reduced fuel consumption and optimised steam usage lead to significant cost reductions over time.
- **Lower maintenance costs:** Advanced, high-efficiency systems require less maintenance and experience fewer breakdowns, minimising downtime.
- **Regulatory compliance & futureproofing:** Investing now in low-carbon solutions helps businesses stay ahead of evolving environmental regulations and avoid potential carbon taxation.

- **Enhanced operational efficiency:** Smarter steam systems improve process performance, reducing waste and enhancing productivity.
- **Financial incentives & funding:** Various government grants, carbon credit schemes, and tax incentives can help offset CAPEX investments in sustainable steam technologies.

MOVING FORWARD: A SUSTAINABLE, COST-EFFECTIVE STEAM FUTURE

The transition to sustainable steam generation is not just about meeting environmental targets – it's about future-proofing operations for efficiency, cost savings, and long-term resilience. Whether through electrification, waste heat recovery, digitalisation, or alternative fuels, businesses have a range of options to achieve decarbonisation while maintaining financial sustainability.

At Spirax Sarco, we're committed to helping industries optimise their steam systems for a greener future. Our experts can assess your current steam infrastructure, identify efficiency opportunities, and provide tailored solutions that align with your sustainability and financial goals.

Speak to our specialists today to explore the right steam technologies for your business. www.spiraxsarco.com

www.energymanagermagazine.co.uk

Register now to continue receiving
your digital issue of Energy
Manager Magazine **FREE** of charge

[energymanagermagazine.co.uk/
subscribe](http://energymanagermagazine.co.uk/subscribe)



**THE ONLY PUBLIC SECTOR
ENERGY JOURNAL**

THE FUTURE OF HEAT NETWORKS – EFFICIENCY, COMPLIANCE AND SMART MONITORING

As the UK transitions towards a low-carbon future, heat networks are becoming an increasingly vital component of sustainable energy infrastructure. With new heat network regulations set to be introduced very soon, Behfar Abedinia, General Manager at Taconova UK, explores how efficiency, compliance and smart monitoring can shape the future of heat networks.

THE RISING IMPORTANCE OF ENERGY EFFICIENCY IN HEAT NETWORKS

Heat networks offer a robust, efficient and sustainable heating solution. In its Net Zero modelling, the Climate Change Committee (CCC) showed that 18% of the UK's heat supply will need to come from heat networks by 2050, an increase from the current figure of 2%, if the UK is to meet its net zero targets.

1 <https://www.gov.uk/government/publications/energy-security-bill-factsheets/energy-security-bill-factsheet-heat-networks-regulation-and-zoning>



A newly developed residential complex utilising Heat Interface Units

However, many existing networks suffer from inefficiency, with Government figures² revealing that some operate at just 35-45% efficiency due to significant heat losses during distribution. Inefficient heat networks not only increase operational costs and offer poor output but they also undermine environmental goals.

In 2023, the UK government introduced the Heat Network Efficiency Scheme³ offering financial support to heat network operators to improve the efficiency of their networks.

HIUS FOR DISTRICT HEATING

Once you have an efficient network you need an efficient method of transferring heat to those who require it. Heat Interface Units (HIUs) are seen as a pivotal piece of equipment in district heating systems because they enable efficient delivery of heating and hot water to individual properties.

2 <https://www.gov.uk/government/publications/in-situ-monitoring-of-efficiencies-of-condensing-boilers-and-use-of-secondary-heating-trial-final-report-2009>

3 <https://gemserv.com/heat-network-efficiency-scheme-hnes/>

Unlike traditional boilers, HIUs connect to a central energy source, such as a combined heat and power (CHP) plant or renewable energy systems like solar or biomass. This centralised approach minimises energy loss and supports low-carbon goals. By adopting high-performance technologies like HIUs and optimising system design, heat networks can ensure efficient energy transfer and achieve significant energy and cost savings.

THE POWER OF DATA

Smart monitoring can enhance the performance of heat networks by providing real-time insights into system performance. Solutions like Taconova's energy efficiency dashboard can offer advanced analytics dashboards that allow operators to track energy consumption patterns, identify inefficiencies and implement proactive maintenance strategies. This data can enhance reliability and reduce downtime as problems can be identified quickly and even predicted to prevent them from escalating. This in-depth level of maintenance can then help to extend the lifespan of network components.

For instance, heat meters integrated into HIUs not only provide accurate billing data for customers but also enable operators to monitor usage trends and optimise performance. These data-driven approaches are essential for modern heat network management.

THE UK HEAT NETWORK REGULATIONS

The UK is set to introduce comprehensive regulations for heat networks. These changes will transform heat networks into a regulated utility under Ofgem's oversight, similar to gas and electricity markets.

Key regulatory requirements include:

- Mandatory technical standards: Networks must comply with the Heat Network Technical Assurance Scheme (HNTAS)⁴, which sets minimum performance benchmarks.
- Consumer protection measures: Operators must ensure fair pricing and transparent billing practices.
- Compliance: Both new and existing networks will need to comply with new regulations in order to be HNTAS-certified.

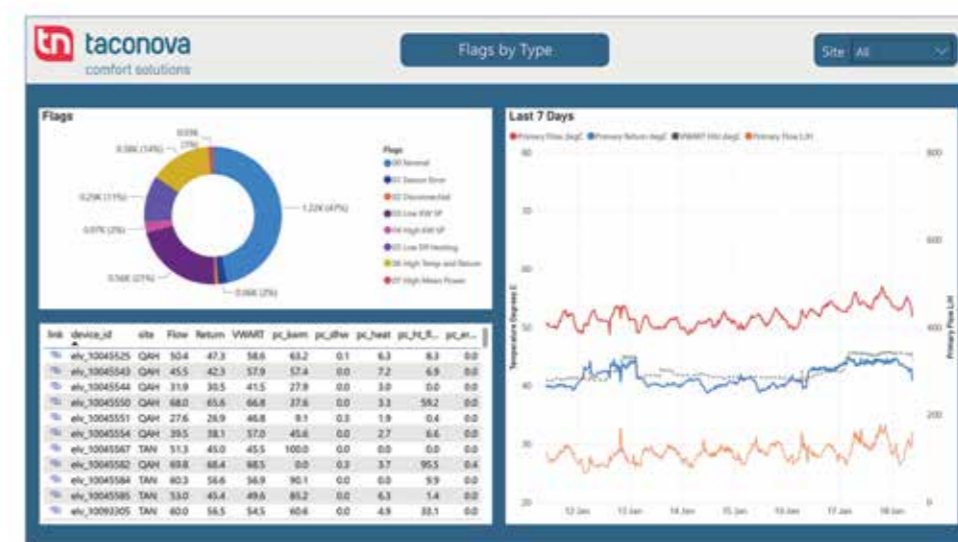
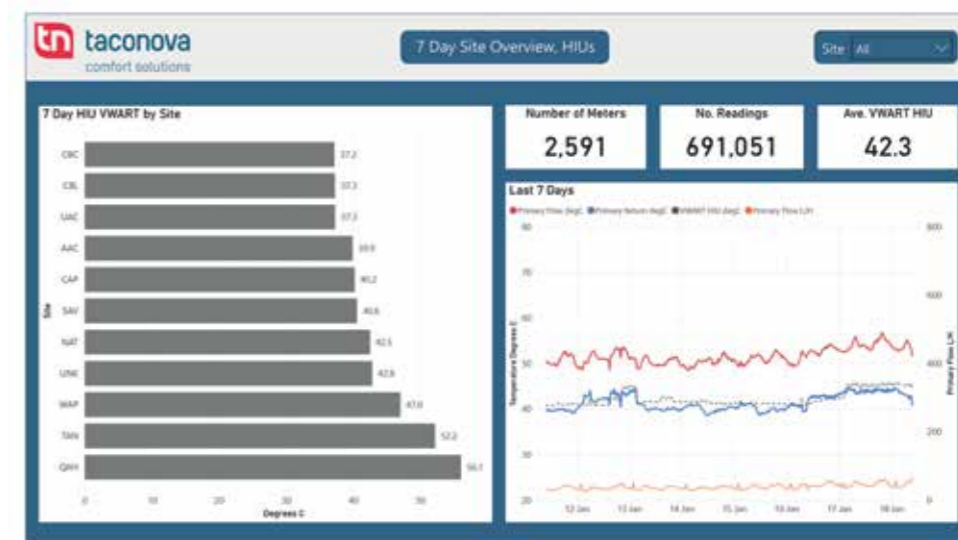
These regulations aim to improve service reliability, reduce carbon emissions, and protect consumers. However, they also present compliance challenges for operators who must adapt their systems to meet the new standards.

ENSURING FAIR AND COMPLIANT OPERATIONS

Accurate metering is crucial for both compliance and customer satisfaction. According to the Heat Network (Metering and Billing) Regulations⁵, heat network operators are generally required to install meters on their networks, provided it is cost-effective and technically feasible, meaning they must install meters in most multi-occupancy

4 <https://www.gov.uk/government/publications/heat-networks-regulation-technical-standards/heat-network-technical-assurance-scheme-hntas>

5 <https://www.gov.uk/guidance/heat-networks>



Top: Taconova's energy efficiency dashboard showing a 7-day overview

Bottom: Taconova's energy efficiency dashboard highlighting flagged alerts from the heating system

buildings on a district heating network to measure the heat consumption of individual dwellings. However, there are exemptions for certain building types and situations which can be assessed based on cost-effectiveness analysis.

Transparent billing practices not only ensure regulatory compliance but also enhance trust between operators and consumers.

Taconova's Metering & Billing offering provides a simple and compliant solution. These tools enable operators to provide accurate bills while also offering insights into energy usage patterns.

EFFICIENT, COMPLIANT AND SMART

As the UK moves towards its 2050 net zero targets, heat networks are in position to become a primary heating

solution for millions of households and businesses. The introduction of the HNTAS and Ofgem regulations means efficiency, compliance and smart monitoring will be more important than ever if heat networks are to provide the 18% heat supply the UK needs to reach its net zero targets.

At Taconova UK, we welcome the introduction of these regulations because they offer a fairer, more efficient heating solution. Our HIU and Metering & Billing experts are ready to assist operators and consumers by offering guidance on our heating technology and metering solutions to ensure a smooth transition to the new regulatory framework.

To find out more, please visit <http://www.taconova.com/>



HEAT NETWORKS: CHANGE IS COMING – AND OVERDUE

The rapid rise in the number of heat network installations in the UK both contributes to and masks serious problems. According to the Heat Trust, the majority are only 35-45% efficient, when this should be closer to 65-70%.

As well as jeopardising the nation's net zero targets, this concerning situation is putting the entire sector in a perilous position.

LAGGING BEHIND

One key issue is that the pace of market growth, stimulated by government policy, is outstripping the country's capacity to provide experts to design, operate and maintain these highly complex systems. Like a luxury car, a heat network needs skilful and consistent servicing to optimise its performance and ensure its reliability and longevity.

Heat network technology has evolved enormously in recent years. It's now much greener and more efficient, with far more emphasis on

Anthony Coates Smith, MD, Insite Energy



digitalisation and data. Used effectively, modern data-driven tools can generate vast improvements in efficiency, sustainability and cost-effectiveness.

However, smart technologies are still vastly underused by UK heat network operators, which almost certainly helps to explain why many systems perform so poorly here. It's very different to other British industries such as finance, retail and manufacturing, where digitalisation has transformed businesses in recent years. It also contrasts with other European countries with more evolved centralised-heating sectors.

WAYFINDERS

As heat network specialists, we should show leadership in applying proven intelligent data-centric approaches to enhance efficiency, improve reliability, reduce costs and lower carbon emissions. We can also help

heat network operators use technology to change consumer behaviours, boost engagement and improve customer experience.

But how does that look in practice? Let me share some notable examples.

One major UK sector innovation has been KURVE, the first web-app specifically for heat network residents on pay-as-you-go billing, launched in 2019. It lets users monitor and manage their energy consumption and pay for their usage quickly and conveniently anywhere, from any internet device.

By offering a quality of customer experience and functionality that banking customers, for example, have benefitted from for years, KURVE is encouraging a sector-wide shift towards more resident-centric service provision and sustainability. Energy

use in KURVE households drops by 24% on average, thanks to easy access to real-time consumption data. Furthermore, analysis of KURVE data is informing and improving industry best practice around sustainability and user experience, benefitting even non-users.

Another important development was the 2023 introduction of motivational tariffs to the UK market. This European practice is a form of variable pricing, rewarding heat network users that look after the heating system in their homes, often positively impacting the energy efficiency of the entire network. It directly tackles the 'What's in it for me?' issue inherent in communal heating systems, whereby customers' heating bills are affected by their neighbours' actions as much as their own.

Motivational tariffs have been highly effective in Denmark, where heat networks supply 64% of homes. In the UK, we've seen lower bills for 81% of residents and a 600% increase in engagement with necessary activities such as equipment-servicing visits.

DIGITAL SIMULATION

A third example of impactful use of data technology is digital twinning. Creating an accurate virtual replica of a heating system's hydronic design can greatly help to tackle poor performance. A heat network is a vast ecosystem of interdependent components; any intervention can have unintended consequences system-wide. Digital twinning allows you to try things out virtually without the expense, risk or disruption of real-world alterations.

Real-life examples where twinning has been used include the optimisation of the heat network supplying Kew Gardens' green houses, and the prevention of a huge, ineffective engineering project at a 190-unit London apartment building. However, the approach has yet to gain real traction in the UK heat network sector.

SMART START

I'm glad to say, though, that many data-driven technologies are now widely used with great results. Smart meters, monitoring systems, and pay-as-you-go

billing give residents real-time data and better energy control. Smart systems monitor plant rooms and networks, detecting faults, reducing inefficiencies and adjusting to demand. And cloud-based services are enabling remote diagnostics or even repairs, cutting costs and improving efficiency.

In future, we can expect more use of integrated heat source optimisation, where dynamic monitoring selects the lowest-cost, lowest-carbon option in real time. Big data visualisation will also likely make performance monitoring clearer and more effective. With housing associations and local authorities managing heat networks alongside other priorities, tools that make complex data digestible are invaluable - both for operators and customers.

AI may well be increasingly deployed, too, to support smart information services. However, it will never replace humans with chat bots. The recent energy and cost-of-living crises have highlighted the need for authentic, empathetic customer interactions when it comes to essential services like heating. <https://insite-energy.co.uk/business>

EM
Magazine

Register now to receive your digital issue of Energy Manager Magazine
FREE of charge



THE ONLY PUBLIC SECTOR ENERGY JOURNAL

energymanagermagazine.co.uk/subscribe

Heat networks: A key solution for decarbonising heat

Decarbonising heat is one of the most significant challenges in achieving net zero carbon emissions. Heat networks have emerged as a powerful solution, playing a central role in reducing carbon footprints while delivering cost-effective energy solutions. With the UK's ambitious climate targets vision, expanding heat network infrastructure is essential for improving energy efficiency and supporting sustainable public sector development.

Heat networks distribute heat from a central source to multiple buildings via insulated pipes. This efficient method of delivering heat minimises energy waste and avoids the need for individual boilers or electric heaters in each building. By integrating renewable and low-carbon heat sources such as geothermal energy, heat pumps, and waste heat recovery, heat networks are a vital tool for reducing the UK's reliance on fossil fuels.

The UK government has identified heat networks as key to achieving net zero by 2050. By 2037, the goal is to reduce emissions from public sector buildings by 75% compared to 2017 levels. Expanding heat networks is crucial in meeting this objective, as they offer an effective alternative to fossil-fuel heating systems.

At Salix, we have been active in supporting heat network development. Through the funding schemes we deliver, we help public sector organisations in connecting to new or existing heat networks. This includes financing the installation of building infrastructure that facilitates these connections, improving both energy efficiency and decarbonisation of heat.

We will continue to play an important role in aligning our support with other government-funded initiatives, ensuring public sector buildings can participate in heat network projects.

The introduction of heat network zoning regulations is set to increase investment in low-carbon heating infrastructure. This zoning approach identifies areas where heat networks are the most effective low-carbon solution, encouraging developers and building owners to connect to these systems. By establishing designated heat network zones, the government aims to streamline planning, attract investment, and expand infrastructure. This regulatory framework enhances funding opportunities for public sector

Daide Natuzzi, assistant director, energy, carbon and technical, Salix



organisations by ensuring their projects align with strategic decarbonisation goals.

Phase 4 of the Public Sector Decarbonisation Scheme incorporates heat network features that prioritise cost-effective carbon reduction strategies. At Salix we deliver the scheme on behalf of the Department for Energy Security and Net Zero. Applications that effectively connect buildings to heat networks are more likely to receive funding under this targeted allocation model in any future schemes should they be developed. This aligns with the UK's long-term decarbonisation strategy, ensuring investments deliver maximum carbon savings per pound spent.

As heat network regulations evolve, public sector organisations will need to consider additional requirements to ensure compliance. Projects seeking funding may be required to demonstrate compatibility with heat network systems, including technical specifications such as flow temperature settings, distribution network design, and heat interface unit configurations. These criteria are designed to ensure long-term system efficiency and alignment with emerging standards.

The success of heat networks centers on collaboration between various funding schemes and stakeholders. Through our work at Salix, we recognise that partnerships with local authorities, public sector organisations, and government agencies are essential for accelerating heat network adoption.

LEARNING FROM DENMARK'S HEAT NETWORK EXPERTISE

Denmark has long been a leader in heat network innovation, offering valuable insights for the UK's efforts to expand its own infrastructure. I was part of a recent delegation visiting Denmark to study their advanced heat network systems, gaining knowledge in areas such as:

- Municipality-led heat strategies that empower local decision-making.
- Flexible energy systems that adapt to fluctuating energy costs and diverse heat sources.
- Integration of large-scale heat storage solutions to improve system efficiency.

The Danish model highlights the benefits of combining energy flexibility with stable costs, making heat networks a competitive alternative to traditional heating methods. As seen in Copenhagen's innovative Amager Resource Center and Høje Taastrup Heat Storage Facility, Denmark has successfully integrated renewable energy sources into its heat networks, offering practical guidance for UK expansion.

Through our work we will inevitably place a strong emphasis on ensuring public sector buildings can connect to heat networks. These buildings often act as anchor loads, stabilising system performance while enabling local communities to access sustainable heating solutions.

RAISING AWARENESS AND BUILDING EXPERTISE

To fully realise the potential of heat networks, greater knowledge and expertise are needed among public sector building managers and within our own organisation at Salix. Training, workshops, and guidance are necessary to ensuring stakeholders can make informed decisions about heat network connections, technical requirements, and funding applications. By fostering a culture of knowledge-sharing, the UK can unlock the full potential of heat networks as a key decarbonisation tool.

Heat networks are an established and effective solution for reducing carbon emissions, improving energy efficiency, and lowering costs. With new regulations and funding opportunities, the UK is well-positioned to accelerate heat network adoption. By fostering collaboration, enhancing expertise, and prioritising public sector buildings, alongside our partners we can all play a key role in transforming the nation's energy landscape.

Through strategic investment and a commitment to innovation, heat networks are set to become a cornerstone of the UK's decarbonisation journey, helping to achieve net zero goals and create a more sustainable future for generations to come.

For more about our work visit <https://www.salixfinance.co.uk/>

MICROGRIDS: THE FUTURE OF ENERGY INDEPENDENCE

Despite global attempts to reduce power use, the IEA predicts that energy demand will rise by 3.4% a year until 2026, with data centres and artificial intelligence (AI) consumption likely to triple. With this increased use comes a need to secure independence, so that if something goes wrong, it doesn't take everything down with it. This is being achieved through microgrids, which can decentralise electricity and prevent mass issues.

Microgrids are being utilised to save costs and change energy strategy in a variety of sectors. They offer a solution by enabling the transition to renewable energy sources to satisfy sustainability goals, by avoiding existing grid connection delays and congestion challenges seen in the UK and Europe.

For those less familiar with microgrids, let me run you through what they are and how they're helping businesses and the grid today

WHAT ARE MICROGRIDS AND HOW DO THEY HELP BUSINESSES?

A microgrid is a self-contained electrical network that lets businesses generate their own power on-site. It connects, monitors, and controls distributed energy resources (DERs), improving energy performance, resilience, and sustainability.

The three key benefits of microgrids are sustainability, cost savings, and resilience. They support clean energy goals by integrating renewables and reducing fossil fuel reliance. Financially, they lower energy costs, enable peak demand management, and create revenue by selling excess energy. Microgrids also increase reliability by allowing businesses to have more control over their energy consumption.

Microgrids also give organisations more control over energy costs to optimise demand, reduce use at peak times, and store electricity. They

can reduce outage risks, preventing productivity loss, and enhance resilience by ensuring power during grid failures. Their distributed design also strengthens cybersecurity and energy security.

RELIEVING THE PRESSURE ON EXISTING INFRASTRUCTURE

By reducing the strain on conventional networks, microgrids and energy storage give companies energy independence. Microgrids collocate generation and consumption, producing electricity locally as opposed to centralised networks that depend on distant power plants.

By converting households and businesses into energy producers, this decentralised strategy helps alleviate grid congestion and growing energy demands. Microgrids can enable new energy uses like EV charging, smart industries, and agriculture and can be deployed more quickly and affordably than grid upgrades.

Infrastructure development must go beyond energy supply if microgrids are to become a reality. Existing grids need to be more spread out, independent from each other, and resilient to external factors to reduce building pressure. These improvements are necessary to increase microgrid capacity and storage, and industry needs to be encouraged to become grid-active and profit from local energy output.

Because microgrid integration is governed by regular networks, which frequently slow approval, connecting to the grid might be difficult. Once operational, weather-related fluctuations in microgrid supply can be avoided by on-site battery storage, which stores energy for usage when needed.

Although improvements have been gradual, infrastructure needs to advance to keep up with decentralised solutions, EV charging, and renewable energy sources. Digital twins can guarantee a successful microgrid integration and optimise current infrastructure.

David Rimmer, Microgrid Business Leader UK&I at Schneider Electric

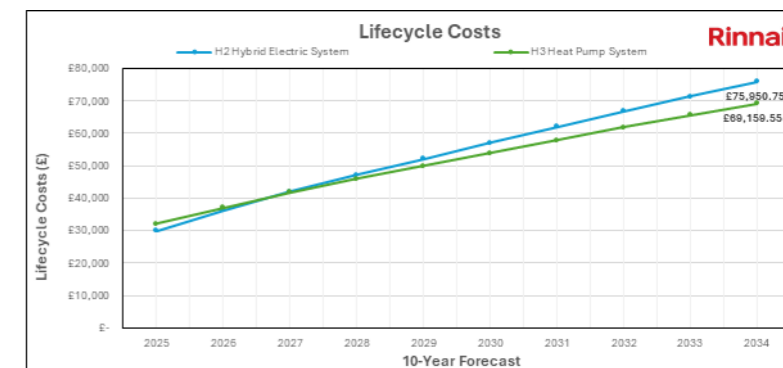
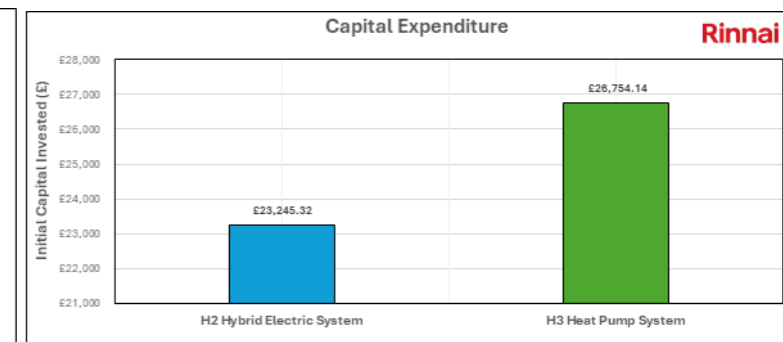
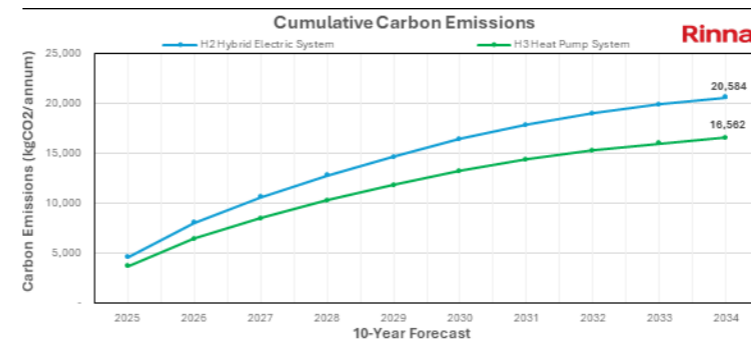
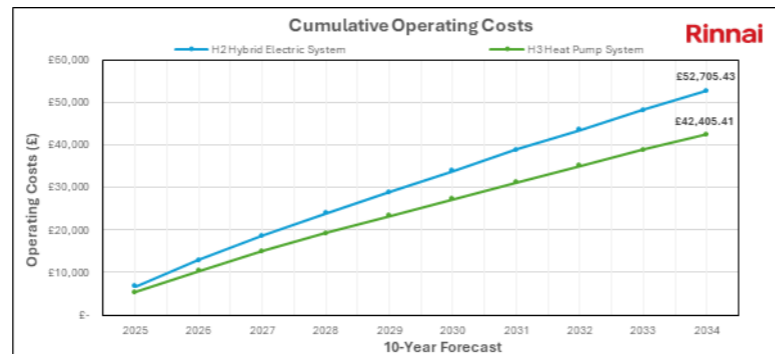
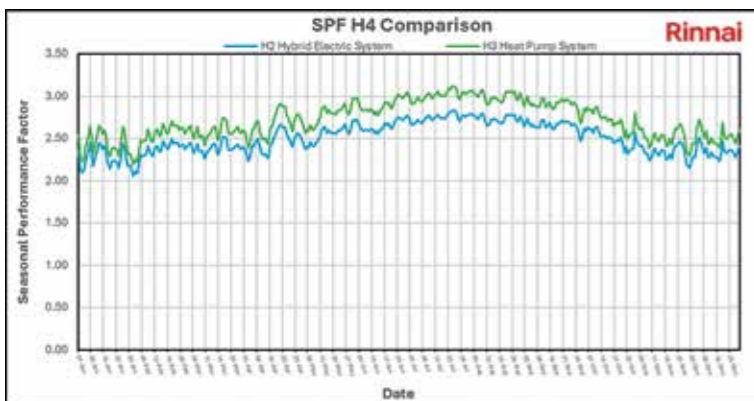


THE FUTURE OF MICROGRIDS IS NOW

Careful planning is essential in ensuring microgrids are a worthwhile investment. Returns on spending can be increased by working with knowledgeable partners who assess energy capacity, comprehend business factors, and provide asset recommendations.

Finland's Citycon Lippulaiva complex is a perfect example, incorporating a microgrid backed by sophisticated digital monitoring tools and intelligent management systems. Resilience, sustainability, and operational efficiency have all been maximised in this sustainable urban development, which includes a bus terminal, metro station, shopping mall, and flats. Within five years, the microgrid is expected to return on its €3 million investment, having cut yearly energy expenses by 14%.

In order to manage the reliable, but intermittent, potential of renewable energy sources like solar and wind, microgrids must be integrated into conventional energy infrastructure in order to reach their full potential. This shift makes switching to a smart grid essential; a sophisticated, digital network that maximises power supply through automation, control systems, and two-way communication. These technologies will improve the energy grid's efficiency, dependability, security, and sustainability as we move towards smart grids, fostering the expansion of microgrids and the integration of renewable energy sources. <https://www.se.com/>



RINNAI PROVIDES TURNKEY HEAT PUMP DHW SOLUTION FOR LEADING NORTHWEST CALL CENTRE

Rinnai has provided a low carbon DHW (domestic hot water) Heat Pump solution, with Seasonal Performance Factors (SPF) Analysis, for a Northwest call center to upgrade its existing system to meet government guidance on carbon reduction. The existing hot water system was 2 x 20kW water heaters, each with 300L of hot water storage, and was working at an efficiency level of just 77%.

Find out more about Rinnai R290 commercial heat pump solutions <https://www.rinnai-uk.co.uk/products/commercial-heat-pumps>

Gathered hot water usage data suggests a peak hot water usage of approximately 542L and a recovery period of less than 1 hour. Based on this information the Rinnai Technical Design Team were able to examine two options suited to the site.

- H2 Hybrid Electric System:** 3x 9kW R290 Heat Pumps + 1x 300L Heat Pump Storage + 1x 215L Electric Cylinder with 2x 9kW immersion ports
- H3 Heat Pump System:** 4x 9kW R290 Heat Pumps + 1x 500L Heat Pump Storage.

Because the site only had single phase power, Rinnai opted for multiple 9kW R290 heat pumps rather than one larger R290 commercial air-source heat pump, and the new Heat Pump-based system will now supply all the hot water to all call center staff using sinks, showers and wash hand basins.



To take advantage of Rinnai design services contact us today.
www.rinnai-uk.co.uk/contact-us/help-me-choose-product

The following data was used to enable the client to make an informed choice. The graphs analysis SPF (seasonal performance factors), Operational expenditure, carbon produced, Capital expenditure and the life cycle costs between the Rinnai **H2** Hybrid water heating system and Rinnai's **H3** Heat Pump system. The **H2** hybrid system is represented in blue whilst the **H3** heat pump system is represented in green.

The SPF graph portrays that when taking the entire system efficiency into account, the **H2** Hybrid Electric system has an average SPF of 2.50, while the **H3** Heat Pump System has an average SPF of 2.72. The key reason for the drop in efficiency of the **H2** system is the inclusion of electric cylinders, as opposed to generating all heated water via higher efficiency heat pumps.

The operating expenditure graph shows the **H2** hybrid system always has a higher OPEX than the **H3** heat pump system across a 10-year period. The **H2** system will cost approximately £52,705, while the **H3** system will cost around £10,000 less at £42,405, considering a 19.5% decrease in operating costs. The **H2** hybrid system requires more grid sourced electricity to be purchased because the efficiency of the electric immersion cylinder is less than the R290 Heat Pump.

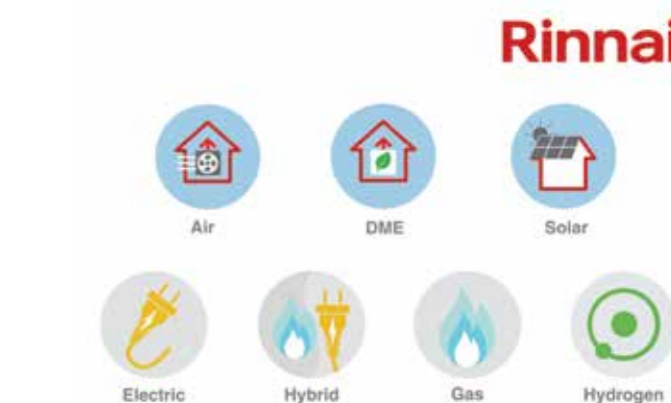
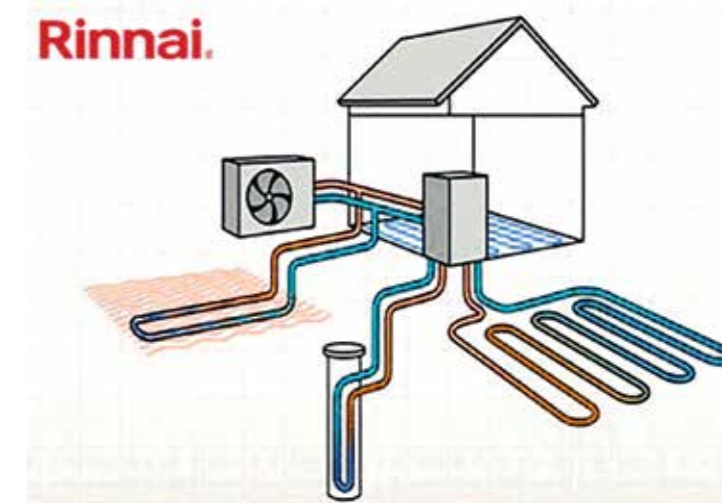
When comparing the carbon produced across a 10-year period the **H2** system will emit 20,584kg of CO₂ whilst the **H3** system will emit just 16,562kg of CO₂. This demonstrates a 24.3% decrease in carbon production.

CAPEX costs associated with the **H2** hybrid electric system will cost £23,245, the **H3** heat pump system will cost £26,754, a 13% increase. The reason for the increase is that heat pumps can cost more than electric immersion cylinders. This gives the customer an option of reducing initial expenditure if budget constraints exist.

When combining the CAPEX and OPEX data, lifecycle costs over a 10-year period can be forecast. This reinforced that the **H3** Heat Pump system will cost less over its lifetime compared to the **H2** Hybrid Electric System. The **H3** Heat Pump system will save the customer £6,791 over a 10-year period and will take just two years to become comparable with the **H2** Hybrid Electric option.

Sign up for a free CIBSE accreditation SPF CPD today!
<https://www.rinnai-uk.co.uk/training/cibse-cpd-training-enrolment>

Rinnai understands the UK customer requirement for cost effective and robust appliances that consistently deliver clean hot water and heating to domestic and commercial buildings across the UK. Rinnai are committed to offering UK customers low cost and practical solutions that cover all energy options.
 Visit www.rinnai-uk.co.uk or email engineer@rinnaiuk.com



MAXIMISE SUSTAINABILITY GAINS WITH MINIMAL SPEND – HERE'S HOW!

(THE MOST IMPACTFUL INVESTMENT YOU'RE PROBABLY NOT MAKING)

Sustainability budgets are often the first to be cut during tough times because they are seen as non-essential and have long-term returns rather than immediate financial benefits. However, it is actually possible for sustainability initiatives to drive efficiency, significantly reduce costs and even enhance brand reputation, making it a valuable long-term investment rather than a discretionary expense.

HOW?! BEHAVIOUR CHANGE! STAY WITH US... YOU WON'T REGRET IT

One of our first large Behaviour Change projects was during 2013-2015 for Rolls-Royce. The project delivered annual energy savings of 8.9%.

The 8.9% savings from behavioural projects matched those from installing new factory LED lighting. However, the behavioural projects cost only 6% of the lighting installation and paid for themselves in about three months. The savings were independently verified using an internationally recognised methodology.

A significant part of this project was training and empowering staff. It's often hard to quantify the exact benefits of training alone, but in this case, it was known to be in the range of 2.5-3.5% energy savings, at a time when production was increasing.



This project took place some time ago, and since then, training, technology, and our expertise have advanced significantly. Compared to a decade ago, we can now achieve a much greater impact with fewer resources through automation, digital tools, smarter policies, and expanding industry-wide knowledge, allowing us to scale solutions more efficiently, reach more people and create longer lasting change,

Just recently, we helped one local authority reduce their gas consumption by 15% and their electricity consumption by 14%, with a combined Behaviour Change and ISO 50001 implementation project. Both initiatives are powerful alone, but when combined create strong tangible results. ISO 50001 provides a structured framework for energy management, while Behaviour Change ensures employees actively follow and sustain energy-saving practices. Together, they create a holistic approach that combines technical improvements with a cultural shift, leading to long-term energy efficiency. This project had a payback of only 13 months.

If you're still not convinced how simple, cost-effective, and incredibly powerful behaviour change programs can be in saving massive amounts of energy

for minimal investment, this is some of the feedback we've had from our clients:

"We have achieved over 20% energy savings over the last 12 months and no doubt the training was a contributing factor towards this. I am sure that people are much more energy aware than they were before the training and I would recommend anyone who hasn't done this sort of training to seriously consider it." Property and Energy Manager, Numatic International.

"The programme catered really well for a wide range of energy experience, from dedicated energy project managers to frontline operators. It has helped us find and deliver energy savings and helped hone the skills we need to manage energy well." Energy Manager, Severn Trent Water.

Failing to implement a Behaviour Change programme will cost you far more than the investment it requires. Take this as just one example – in 2024, we helped a client save £700k on their water bills. With a few process adjustments and some training, they could have achieved these savings by themselves.

You can see these examples, and more, on our case studies page:

www.jrpsolutions.com/case-studies



BUT WHAT ACTUALLY IS BEHAVIOUR CHANGE? IT SOUNDS VERY VAGUE AND NON-QUANTIFIABLE...

A well-designed Behaviour Change programme is one of the easiest and most cost-effective ways for organisations to drive efficiency, cut costs, and enhance sustainability.

But no programme can succeed without people. People are the key to successful Behaviour Change – technology and policies alone can't drive lasting energy and sustainability change. The way employees think, act, and engage with energy use determines whether efficiency measures succeed or fail. A thoughtfully crafted Behaviour Change programme empowers people with the knowledge, motivation, and accountability to embed sustainable practices into daily operations, turning small actions into significant, long-term savings.

With minimal upfront investment, it delivers fast and often high returns by reducing energy, resource waste, and inefficiencies. Beyond financial benefits, it fosters accountability and embeds long-term cultural change – transforming sustainability from a top-down directive into an organisation-wide initiative.

Yet, many organisations hesitate due to misconceptions about complexity or scepticism about its impact. In reality,

with the right strategy, behaviour change is a simple, high-value solution that not only improves financial performance but also strengthens corporate responsibility and operational resilience. AND, as in our examples above, with a holistic Behaviour Change programme, savings can be verified to satisfy the number crunchers of its effectiveness.

STILL NOT WITH US? IT'S A BIG TOPIC – WE KNOW...

It is common for 'training' and 'Behaviour Change' to be used interchangeably and while training is an important element of a comprehensive Behaviour Change programme, to be truly effective, a programme needs to be holistic and embedded within every part of an organisation.

A comprehensive programme targets attitudes, behaviours, practices, processes and procedures and involves everyone who is in a position to influence energy performance as well as those who have direct hands-on control of equipment and systems.

There are over 140 different types of Behaviour Change interventions that could be made of which training is just one. Organisations will need their own unique combination to deliver change for themselves, but the beauty is that the result will be significant long-term benefits for your organisation.

Ready to talk to someone about a tailored behaviour change programme that's fit for you and your organisation?

BEHAVIOUR CHANGE CONSULTATIONS – TUESDAY 8TH AND WEDNESDAY 16TH APRIL – LIMITED SLOTS AVAILABLE

JRP Solutions have been in the energy and sustainability game for over 25 years. We are sustainable by nature. Built to last. Our experts are well placed to assist you with the best solution for you and your organisation.

Book a no-obligation Behaviour Change consultation with George Richards

With over 35 years of experience working with industrial and commercial clients across a range of sectors, George is well equipped to advise and support you.

Book your Behaviour Change consultation: <https://scheduler.zoom.us/george-richards/one-to-one-behaviour-change-consultation-with-george-richards>

Please outline your level of understanding of Behaviour Change so George can best prepare to help you. <https://www.jrpsolutions.com/>



WHY IT'S TIME TO GET SERIOUS ABOUT WATER

The water market in the UK is at a turning point, and organisations and policymakers are increasingly starting to treat water with the urgency, respect and innovation it needs.

Waterscan's State of the Water Market 2024 report painted a stark picture around the time Ofwat released its 'final determinations' on price increases coming in from April 2025. It revealed a marketplace that is technically open to competition but held back by structural limitations, a worrying lack of data transparency, and a culture that still views water efficiency as a "nice to have" rather than an operational necessity.

However, it also points to signs of real progress – and an increasingly powerful coalition of voices demanding reform.

The issues are not new, but they are becoming impossible to ignore. Drought risk is rising. Regulatory pressure is tightening. Water costs, once negligible on the balance sheet, are beginning to build up. In addition, the public is increasingly unforgiving of companies and sectors that appear to be wasting or polluting water. The era of cheap, abundant water is over. Organisations that fail to adapt will pay the price – financially, reputationally, and operationally.

What's needed now is not just compliance, but leadership.

A MARKET OPEN IN THEORY, BUT NOT IN PRACTICE

The water market in England was deregulated in 2017, in theory allowing non-household customers to choose their water supplier. But eight years on, the promise of a competitive, customer-driven market has yet to materialise. Switching rates are low, customer satisfaction is stagnant, and many businesses don't even realise they have a choice.

Waterscan's research highlights the root causes: a lack of transparency around pricing and performance, limited innovation from suppliers, and a regulatory model that doesn't do enough to incentivise efficiency or penalise waste. For too long, the market has tolerated mediocre service and rewarded passivity.

But this status quo is no longer acceptable. Water is becoming an increasingly strategic issue, particularly for large, multi-site organisations. It impacts ESG performance, climate resilience, and long-term cost exposure. Organisations want more insight, more flexibility, and more support – and they're not getting it from the current market setup.

Mike Callis, Waterscan Ltd

DATA IS POWER – AND TOO FEW HAVE IT

Perhaps the single biggest obstacle to progress is the market's data deficit. Accurate, timely consumption data is the foundation of any meaningful water strategy. Yet most businesses still operate in the dark, receiving infrequent, estimated bills and lacking visibility of where, when and how they're using water.

This is not just an inconvenience – it's a major risk. Without robust data, it's impossible to identify leaks, benchmark performance, or build a credible case for investment. It also undermines trust in the market and prevents meaningful competition.

Encouragingly, some organisations are starting to take matters into their own hands, installing their own data loggers and working with independent experts to build clearer pictures of usage and risk. But this patchwork approach is no substitute for market-wide transparency. Ofwat and MOSL have acknowledged the problem. Now it's time for coordinated action.

FROM AFTERTHOUGHT TO SHARED PRIORITY

One of the most positive trends highlighted in Waterscan's report is the growing maturity of non-household customers attitudes to water. Efficiency is no longer the preserve of sustainability teams – it's increasingly being discussed across all levels of the public sector departments and committees.

This shift is being driven by several forces: the sharp rise in other utility prices (making water cost control more attractive by comparison), the expansion of ESG reporting requirements, and a growing awareness of the reputational risks associated with poor water stewardship. In commercial sectors like hospitality, retail and manufacturing, water use is now seen as a core operational issue, not just a compliance box to tick, and the public sector is quickly following.

Forward-thinking organisations are starting to ask smarter questions: How do we set meaningful reduction targets? How do we design out waste in our processes? Can we reuse greywater or harvest rainwater? How do we measure success?

These questions don't have easy answers. But asking them is the first step to real progress.

THE ROLE OF INDEPENDENTS

Given the limitations of the current market structure, it's no surprise that many businesses are turning to third parties to help navigate their water strategy. Independent consultants and water managers are increasingly the ones driving innovation, offering services from auditing and procurement to real-time monitoring and demand-side management.

This is a clear signal that organisations are hungry for more than what many licensed suppliers are offering. It also suggests a new kind of market model – one less reliant on traditional retail competition, and more focused on collaborative, consultative partnerships between organisations and experts who can unlock hidden value.

Several local authorities have taken steps already to gain more control over their water usage and costs by becoming self-suppliers. Blackpool Council was one of the early adopters, switching to self-supply to help drive efficiencies and support wider sustainability goals across its public estate. Sefton Council has since made considerable progress on its water journey, using self-supply to identify and address leaks, improve data visibility, and embed water-saving practices into day-to-day operations

TIME TO MAKE WATER COUNT

Ultimately, water is not just a resource; it's a risk, an opportunity, and a responsibility. The 2024 Waterscan report should serve as a wake-up call for everyone involved in the business of water – from regulators and retailers to facilities managers and CFOs.

If we want a water market that works – one that's transparent, innovative, efficient, and resilient – we can't keep doing more of the same. We need bold reform, smarter regulation, better data, and a cultural shift in how we value water.

The good news? The momentum is building. Organisations are ready to lead. Policymakers are starting to listen. And with the right focus, 2024 could be the year the water market starts to live up to its promise.

Keen to learn more and continue the conversation? Join Waterscan at its annual **Water Matters** conference in London on 19th June 2025 to drive change on water sustainability.

www.waterscan.com



ADDRESSING THE CHALLENGES FACING WATER SECTOR ENERGY AND CARBON MANAGERS

As water and wastewater companies in England and Wales embark on the next regulatory Asset Management Period, which runs until 2030, reducing carbon emissions from both assets and operations will come under spotlight.

Not only are rising energy costs and increasing needs for energy resilience front of mind – water industry regulator Ofwat has now introduced new performance commitments on operational carbon emissions as part of the 2024 price review. The rewards and penalties arising from these performance commitments will support the UK's wider 2050 net zero target

In my role at Mott MacDonald, I engage with energy and carbon managers in the water sector who have shared some of their challenges as they seek to curb emissions significantly over the next five years. There are technical, commercial, regulatory and management issues to consider.

PUTTING THE RIGHT TECHNOLOGY IN THE RIGHT PLACE

Foremost among the technical challenges is the problem of introducing new technologies and monitoring systems into existing sites and operating environments. Suitability of on-site renewables and storage is limited by a site's characteristics – as well as potential objections in the planning system. Integration of water and wastewater systems with digital tools to combine energy demand and flexibility measures is also not straightforward.

The availability of key technology (e.g. solar panels, electric vehicle chargers) and expertise in the supply chain will be a barrier, and needs to be factored into the timetable. Should new grid capacity be required, timeframes are likely to be extended further, meaning that the carbon savings might not be realised until the next regulatory cycle.

Setting up adequate digital energy and carbon monitoring tools is crucial. Ofwat expects any data submitted to be subject to rigorous assurance, and companies need their

Rosa Rotko, project director energy transformation, Mott MacDonald



own performance data to be accurate and reliable, particularly if they are engaging in demand side response and energy arbitrage activities.

SEIZING COMMERCIAL OPPORTUNITIES

The use of on-site generation and energy storage creates an opportunity to reduce operational energy costs and exposure to wholesale markets – as well as bringing down scope 2 emissions as there is less need to purchase electricity from the grid. Looking at behind the meter and private wire solutions therefore ought to be a priority.

However, water companies operate in a regulated and cost-conscious environment that can make accessing finance more complex and limit the ability to take risks. Energy managers need to carefully build business cases, showing the full range of benefits for the regulated and non-regulated parts of the business.

In addition to the obvious cost savings, calculations of the regulatory payments or penalties under the performance commitments will form part of this. Other benefits could include revenues from offering ancillary services; avoided costs (e.g. from reduced maintenance); greater price certainty; reduced vulnerability to rising wholesale costs; and qualitative benefits such as improved reputation.

NAVIGATING REGULATORY COMPLEXITY

Energy and sustainability managers in water companies are having to get to grips with regulations not only in their own sector but also in the energy markets. This is bound to make execution of their roles challenging, since they work in relatively small teams and cover multiple topics.

As water companies enter this new regulatory period, it is important for Ofwat to support them with clear

direction and guidance as energy transformation and decarbonisation efforts progress.

Energy markets and carbon understanding will become an increasingly important part for the regulator's remit.

STAKEHOLDER MANAGEMENT IS KEY

Increasingly, leaders and senior managers in water companies need to consider energy and carbon as part of their wider corporate vision. Decision makers need the capability to understand and debate these issues.

Energy availability and costs can contribute to a multitude of organisational goals for modernisation, efficiency and capital programmes. Senior champions with knowledge of the energy and sustainability agenda will become increasingly important in the water sector.

Stakeholder management will be key to building successful energy and carbon reduction programmes. Water companies will need to partner more with energy solutions providers, the wider supply chain and possibly community energy groups – so building networks and horizons beyond the sector will be useful.

In summary, it is in the interests of both customers and the environment that water companies take action to reduce energy costs and carbon emissions. The sector has already made significant progress and performance commitments over the next five years should be further motivation to redouble these efforts. Technical, commercial, regulatory and management challenges exist, but none are insurmountable.

Energy and sustainability managers, most of whom are doing commendable jobs, need the support from their management and the regulator to tackle these complex issues. www.mottmac.com

ENERGY TECHNOLOGY LIVE 2025 CELEBRATES A SUCCESSFUL EVENT

Energy Technology Live, featuring The Distributed Energy Show and the successful launch of The Energy Storage Show, concluded its highly anticipated event, showcasing the industry's latest efforts toward a clean, sustainable, and flexible energy system. Held for the first time at the NEC, Birmingham, on 12th and 13th March 2025, the event brought together thousands of energy executives, users, engineers, and supply chain professionals.

Energy Technology Live provided an invaluable platform for networking, collaboration, and knowledge exchange, allowing attendees to engage with industry leaders and peers. With a comprehensive lineup of exhibitors, expert speakers, and interactive sessions, participants gained valuable insights into the latest industry trends and innovations driving the transition toward a net-zero future.

The exhibition hall displayed a wide array of technologies and services, with some of the energy sector's most prominent companies alongside innovative start-ups, all united by the same goal: helping energy users and industry leaders optimise energy usage while advancing sustainability and efficiency targets.

Leading exhibiting companies included Flexitricity, Joulen, NESO Power Responsive, the Department for Energy Security & Net Zero, OVO, GOODWE,



Thales, BOSCH, DSO – Electricity North West, Greener Power Solutions, Siemens Financial Services, and Voltalis. These companies showcased their latest products, services, and solutions, including Energy Storage, Heat Pumps, Wind Turbines, Hydrogen, Smart Energy Control Systems, Switchgears, Solar Systems, Gas Turbines, Small Hydro, Energy Systems, Batteries, Cabling, Power Electronics, Transport and Logistics, and much more.

In each corner of the hall, four dedicated conference theatres were curated to offer practical insights, industry trends, challenges, and opportunities that are shaping the future of the sector.

The industry-leading conference featured a diverse range of experts, researchers, and thought leaders from companies such as Vattenfall, Ofgem, Zenobe, Siemens, SSE Energy Solutions, NESO, Mott MacDonald, and ABB. These thought leaders delivered insightful presentations, panel discussions, keynote talks, and workshops on topics such as 'Energy Storage for a Net-Zero Future', 'The Energy Act, One Year On', 'Transforming the Energy Sector Through Digital Innovation', 'Emerging Energy Flexibility Solutions', and more.

Dr. Nina Klein, Flexibility & Policy Expert from Ofgem, commented: *"Conferences like Energy Technology Live are really important for contributing to innovation and growth in the UK. By bringing the industry together in one space, we can share successes and also talk about the remaining challenges. We*

can learn from these and scale them at the pace we need for clean power by 2030."

Attendee companies included JLR, Veolia, EDF Energy, National Express, Freedom Leisure, Tesco, Boots, Nestlé, Transport for London, Total Energies, Amazon, Rolls-Royce, Mercedes, Virgin Media O2, Manchester Airport Group, British Steel, and many more.

Attendees and exhibitors also took full advantage of exclusive networking opportunities, including three drinks receptions hosted by Greener Power Solutions, GoodWe Technologies Co., and Power Responsive.

"I'd recommend others to come along and gain perspectives different from their own, as it will help identify the right way forward for their business, sector, and industry," said Luke Strickland, Project Director – Energy Transition at Mott MacDonald.

Energy Technology Live, featuring The Distributed Energy Show and The Energy Storage Show, will return to the NEC on 11th and 12th March 2026.

To find out how to get involved or to stay up to date with the latest updates for the 2026 event, visit www.energytechlive.com

Energy Technology Live is an annual event dedicated to accelerating the transition to a sustainable energy future in the UK. Organised by Event Partners Ltd, the event brings together industry leaders, innovators, and policymakers to discuss emerging technologies and drive progress toward a net-zero future.

A PREMIER EVENT CONNECTING INDUSTRY LEADERS AND INNOVATORS

Are you a senior energy management professional looking for solutions to your business projects? Or a supplier offering the latest innovative products and services within the energy sector?

Then join us at the Energy Management Summit – an exclusive gathering designed to foster meaningful business connections in an intimate and productive setting.

Following our award-winning format, the event offers a carefully curated experience featuring personalised 1-2-1 meetings, invaluable networking opportunities, and insightful seminar sessions—all tailored to help you stay ahead in the energy sector.

DATE: 22nd & 23rd September

VENUE: Radisson Hotel & Conference Centre, London Heathrow

FOR INDUSTRY BUYERS – YOUR EXCLUSIVE FREE PASS

As a senior professional within the industry, attending the summit is completely free.

Your pass includes a personalised itinerary of relaxed 1-2-1 meetings with budget-saving suppliers aligned with your project needs. You will have access to insightful and educational seminar sessions led by industry thought leaders, along with networking opportunities to discuss trends and innovations with like-minded professionals. Throughout the event, complimentary breakfast, lunch, and refreshments will be provided.

Overnight accommodation at the venue is included, allowing for a seamless experience. The event also features an exclusive gala dinner with live entertainment, offering a perfect opportunity to unwind and connect with fellow attendees.

Our exclusive seminar programme will include talks from leading industry experts. Mark Agnew, European Adventurer of the Year 2023 will discuss "How to find your polar bear - resilience in the workplace", while Alan Stenson, Founder of Neutral Carbon

Zone will offer insights in his seminar "Embedding Sustainability: A Strategic FM Guide". Further topics will be covering 'sustainable construction' and 'the future of energy management'.

Industry buyers can secure their free pass by completing our short booking form. <https://energymanagementsummit.co.uk/delegates-booking-form/>

For more details about attending the forum, contact us here: <https://energymanagementsummit.co.uk/request-more-info-delegates/>

FOR INDUSTRY SUPPLIERS – CONNECT WITH KEY DECISION MAKERS

At the Energy Management Summit, we understand the value of your time. That's why we bring you face-to-face with energy professionals who are actively looking for solutions to support their upcoming projects. These decision-makers have specifically requested to meet with suppliers like you, ensuring highly relevant and productive interactions.

As an industry supplier, you will receive a personalised itinerary designed to match you with sector professionals who fit your business needs. You will gain exclusive 1-2-1 access to senior decision-makers who have active budgets and projects. Additionally, the event provides extensive branding exposure through event marketing materials, the event guide, the event website, and social media channels.

Your participation includes complimentary breakfast, lunch, and refreshments throughout the event, ensuring a comfortable and productive experience. A pre-built, hassle-free meeting stand will be provided for you, fully furnished and ready for business discussions. Overnight accommodation at the venue is also included, allowing you to focus entirely on making valuable connections. The prestigious gala dinner, complete with live entertainment, will provide a relaxed atmosphere to further strengthen relationships.

This unique event offers a unique opportunity for you to promote your solutions directly to senior decision-makers who are reviewing their current suppliers and actively looking for new partnerships.

For more information on partnership packages and exhibiting opportunities, please contact our event manager, Charlotte, at c.russell@forumevents.co.uk or request more information here: energymanagementsummit.co.uk/request-more-info-suppliers/

Don't miss this exclusive opportunity to network, collaborate, and drive business growth. Secure your place today! <https://energymanagementsummit.co.uk/>



RINNAI PROVIDES PEACE OF MIND WITH FUTURE PROOF WATER HEATERS AT HUDDERSFIELD CARE HOME

Rinnai has supplied two N Series continuous flow water heaters to the Sycamore Care Home in Huddersfield, ensuring a reliable and efficient hot water heating system. Installed by CBFM, the system includes a 300L cylinder store, providing a first-hour flow rate of 2407L and a continuous flow rate of 1907L, with a recovery time of just 15.7 minutes at 60°C with a 50°C temperature difference.

The Rinnai N Series water heaters are the pinnacle of commercial water heating, offering fully modulating (58kWh – 4.4kWh) and fully condensing stainless steel heat exchangers. These water heaters have been independently tested for hydrogen blends of 20% and renewable liquid fuels like Bio LPG, ensuring future compatibility with greener gases.

One of the standout features of the Rinnai N Series is its impressive 12-year warranty, providing peace of mind and demonstrating the company's commitment to reliability and durability. This long-term warranty ensures that customers can trust in the performance and longevity of their hot water heating system.

To find out more about the Rinnai N series visit www.rinnai-uk.co.uk/products/commercial/n-series-commercial-water-heater.

CBFM, known for its bespoke installation and maintenance contracts, emphasizes service excellence and energy efficiency. Harl Bowman of CBFM stated, "We have built our reputation on service excellence, ensuring the job is done with minimal fuss. Our team of highly trained and qualified engineers consistently deliver outstanding results".

In addition to the installation at Sycamore Care Home, CBFM's Gas Safe commercial heating teams recently installed a commercial water heater and cylinder at a local community centre, providing essential services to the kitchen and toilets, along with LPG gas for the kitchen catering equipment.

To find out more about CBFM services visit <https://cbfmheating.co.uk/>.



Rinnai offers cost-effective domestic or commercial hot water solutions, with a variety of options based on location and requirements. Their design team can size any site and suggest optimum solutions based on installation space and customer needs. Rinnai also provides full product availability 24/7 for next-day delivery of all hot water heating unit models, including 48-58kW units.

For more information on the Rinnai product range which includes R290 heat pumps, electric instant, gas fired, solar thermal and electrical storage, contact us today www.rinnai-uk.co.uk/contact-us/help-me-choose-product



MEASURING SUCCESS: A GREAT PLACE TO WORK, A GREATER CUSTOMER EXPERIENCE

National Gas Metering is one of the largest providers of gas meter services, gas connections, and hydrogen solutions in Great Britain.

Not only do they manage more than 5 million gas assets, but they also have award-winning customer service. Their latest achievement is securing a place among the top 50 best places to work in the UK, ranked 46th. This recognition is a testament to their commitment to creating a workplace where employees feel valued, supported, and motivated. Beyond being a great place to work, there's a powerful connection between employee satisfaction and exceptional customer service – one that directly impacts business success.

WHY HAPPY EMPLOYEES CREATE HAPPY CUSTOMERS

Customer service is often the frontline of any business, and the attitude, motivation, and wellbeing of employees play a critical role in shaping customer interactions. Here's how an employee-first approach directly translates into a superior customer experience:

1. Flexible Working Fuels Productivity and Engagement

By offering flexible working arrangements and remote work options, employees are empowered to achieve a better work-life balance. This flexibility reduces stress, increases job satisfaction, and enables employees to bring their best selves to work. When employees feel in control of their schedules, they are more engaged, motivated, and ready to provide outstanding service.

2. Great Pay and Benefits Drive Motivation

Competitive salaries and a strong benefits package not only attract top talent but also keep employees motivated. When people feel financially secure and valued, they are more likely to be engaged, enthusiastic, and committed to delivering high-quality service. Customers can sense when employees genuinely care, and that authenticity fosters trust and loyalty.

3. Good Leadership Sets the Standard

Strong leadership is a cornerstone of any thriving company. National Gas



Metering's leaders set clear expectations, provide support, and inspire teams to go above and beyond. When employees feel heard, respected, and guided by effective leadership, they are more likely to mirror those positive interactions with customers – ensuring every touchpoint is handled with professionalism and care.

4. Regular Surveys and Communication Strengthen Relationships

Open communication is key to a happy workforce. Through regular employee surveys and ongoing dialogue, a culture is created where feedback is valued, concerns are addressed, and employees feel empowered to contribute to company improvements. When employees know their voices matter, they feel a stronger sense of belonging – and that positivity extends to their customer interactions.

THE BUSINESS IMPACT OF A HAPPY WORKFORCE

The correlation between employee satisfaction and great customer service isn't just theoretical—it's backed by data. Studies show that companies with highly engaged employees experience:

- Higher customer satisfaction scores.
- Increased customer retention and loyalty.

- Stronger brand reputation and word-of-mouth referrals.
- Greater business growth and profitability.

In their latest customer satisfaction survey, National Gas Metering achieved scores of 90% for Trust, an industry-leading NPS score of +68, and customer satisfaction of +90. By prioritizing their people, they create a ripple effect that enhances customer experiences, strengthens their brand, and fuels long-term success.

COMMITMENT TO EXCELLENCE

Maxine Long, Metering Director, says: "Being recognized as one of the top places to work in the UK is more than just an achievement – it's a reflection of our ongoing commitment to our employees. We understand that happy, engaged teams are the driving force behind great customer service. As we move forward, we remain dedicated to fostering a workplace where employees feel valued, supported, and inspired – because when companies take care of their people, they take care of our customers."

To find out how National Gas Metering's products and services visit their website: www.nationalgas.com/national-gas-metering or follow them on LinkedIn: www.linkedin.com/company/national-gas-metering

ECOBAT BATTERY SHOWS ITS MEGA SCALE MUSCLE

Ecobat Battery, the UK's largest battery distributor, has just completed the second phase of a major piece of infrastructure work for a 404 megawatt combined gas turbine power station for the National Grid of Ireland.

The project, which was the second phase of a two stage process, began on the 7th of October and the time critical undertaking had to be carried out and successfully completed within two weeks, while Huntstown power station, operated by Energia, was closed for routine maintenance.

Alongside the pressure of adhering to the non-negotiable timescale that had to be respected, was the scale of the work in question, which was to remove the station's previous backup power batteries and install more than two hundred new 2,190Ah batteries, each weighing 160 kilogrammes within a second floor location with restricted, as well as challenging, access, via an outside staircase, than a ladder.

"Following a great deal of detailed work to tender for and secure the agreement, this was a largescale job and a significant undertaking, which involved not only the installation of two new banks of batteries, but also the safe removal and correct disposal of the spent batteries," explained Ecobat Battery Operations Manager, Matt Davies. "It therefore required complex planning and the close cooperation of third party specialists to complete it successfully and on time.

"As a major European battery distributor with many years of power storage experience and several brands within our portfolio, identifying the ideal product for the installation was relatively

straightforward, as the Sonnenschein A602/2200HB blocs we selected were a perfect solution, so it was the logistics of the project that set us the greatest challenge.

"With the obvious internal route to the battery room impossible due to health and safety concerns, because it goes over one of the turbines, the second storey external access door was the only option open to us, but to use it, we needed help from our friends at Mastiff Engineering.

"Deploying their fully trained engineers, the Mastiff team supplied, set up and manned a spider crane that would first bring down the spent batteries as we disconnected them from their threads and moved them to the door area, before lifting up the new batteries for us to position and subsequently string together.

"Over the two phases, that means that close to 140 tonnes of batteries were transferred to complete the overall project, so we're hugely appreciative of the efforts made by the entire Mastiff Engineering team."

For further details, please visit Ecobat Battery at: www.ecobatbattery.com/applications/energy-storage-solutions/



WHY TURNING LIGHTS OFF CAN KEEP THEM ON...

Shifting alliances, wars and inflation are just a few of the forces that threaten supplies of affordable energy. The Pirbright Institute, a research facility that excels in protecting livestock and livelihoods, is no stranger to the fortunes of the power markets. Here, Dave Gillies, Energy Manager, explains how his team's work helps the Institute weather the global turmoil.

The Pirbright Institute relies on energy. After wages, power is our largest expenditure. The amount needed to keep the laboratory-intensive work of a scientific research facility on track makes us acutely aware of our environmental impact, and the need to cut energy use across our campus.

Recent geopolitical events have led to seismic shifts in energy tariffs. As prices rise, so does operational expenditure. Whilst our funding is agreed every five years by the Biotechnology & Biological Sciences Research Council (BBSRC), and despite forecasts each month through the Crown Commercial Service, sudden utility costs cannot be predicted, but energy bills must be paid.

Every business has a moral obligation to use energy responsibly, which cuts operational expenditure and mitigates carbon and greenhouse gas emissions. At Pirbright, we focus on a combination of capital development projects, process

changes and staff-led innovations to identify and implement change, generate our own power or increase efficiency. In a virtuous cycle, these ethical adjustments make us a more attractive destination for investment.

Pirbright's research grant funding sources are increasingly seeking assurance that we undertake our science in an environmentally sustainable way. Yet energy saving measures need not cost the earth, or demand upheaval. The gradual implementation of change with minimal or staggered investment is possible, through measures including:

- appropriate & effective asset care programmes
- condition monitoring techniques to detect inefficient equipment for proactive replacement
- replacing defective equipment with energy efficient units/components
- using lifecycle & obsolescence registers to forecast replacement expenditure
- investigating investment in new infrastructure, plant and installations
- strategic procurement.

When investment opportunities arise, having a selection of solutions to hand can ensure timely implementation. Savings can begin to be realised with minimal delay, so we aim to have such opportunities reviewed and approved by our Senior Leadership Board to progress immediately when funding becomes available.

BBSRC's decision to award Pirbright £2.7m in 2022 to install a Combined Heat & Power (CHP) plant has been a resounding success story. With optimum performance, the installation has the potential to save the Institute £1m every year. Savings will be enhanced when we deploy the next phase of the project: recovering waste heat for low temperature hot water supplies in nearby facilities. Benefits will be enhanced further through an application to export excess energy produced by the CHP to the National Grid, allowing us to generate revenue.

The completion in 2025 of projects currently in progress will save the Institute an estimated 761,486kWh (electricity), worth around £200,000.

In the year ahead, our energy reduction projects include the roll out of low temperature hot water (LTHW) heat



recovery across our Plowright building, together with improved ventilation regimes – the latter representing an estimated annual energy saving of c.350,000 kWh. Sitewide lighting optimisation will save c.65,000 kWh per year, whilst adjustment of building temperature setpoints to reduce heating/cooling will save around 346,486 kWh.

Opportunities to rationalise steam and compressed air generation and distribution, and the expansion of our existing solar panel arrays on site, are also being explored. However, physical changes take time, and require significant investment with agreeable payback terms. That's why 'quick wins,' changing processes and proposals with minimal investment costs, are always worth pursuing.

Operating under the principle that the cheapest form of energy is energy you don't use, some of our older buildings have been decommissioned and research relocated to alternative, upgraded facilities on our Surrey site.

Finally, let's consider a few office items in use every day, assuming 24hr operation:

- a single 60W lightbulb costs £115 p.a. and emits 107kg carbon
- a desktop PC with 2 Monitors costs £467 p.a. and emits 438kg carbon
- a laptop with 2 monitors costs £210 p.a. and emits 196kg carbon

The items above total £792 & emit 741kg carbon, so turning off unused equipment makes sense for our finances and the planet. Only using these items during average working hours can save £610 p.a. (570kg carbon).

Switching off unused equipment is something we all do at home, but not always at work. By turning things off, we can help keep them on.

Contact Dave Gillies: david.gillies@pirbright.ac.uk



EXPLORE HOW
OUR EVENT
UNFOLDS HERE

OUR 10TH BIRTHDAY CELEBRATION!



22nd & 23rd
September 2025

Radisson Hotel &
Conference Centre,
London Heathrow

MEETINGS



SEMINARS



NETWORKING



LASTING BUSINESS
RELATIONSHIPS



01992 374093



m.clark@forumevents.co.uk



Energy Management
Summit



Scan or click here
for our website