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Welcome to the February and March issue of Heat Pumps Today

It's March 2026 already! Stand by your beds, as this year promises to be a busy one.

We've started the year with some positive news - the UK's £15 billion Warm Homes Plan, launched in January 2026, aims to upgrade 5 million homes and lift 1 million households out of fuel poverty by 2030. On the whole, this has been received by the heat pump and renewables sector as a positive move, and should contribute to wide spread growth within the domestic setting.

This issue has an interesting focus on Ground Source Heat Pumps (GSHP's)

1. Innovation is on the horizon through ice energy storage – P08
2. Boundaries are being pushed and lessons learned from a mine-water project – P10
3. John Marsh, Chief Innovation Officer at GTC discusses networked GSHP's – P12

We also look at why underfloor heating is a valuable addition to any installers tool kit. As well as a selection of successful projects, demonstrating innovation and forward-thinking installations.

Finally, the deadline to enter the National ACR & Heat Pump Awards 2026 is looming. However, if you need a little bit of extra time, please get in touch asap – no promises, but we'll do our best to accommodate where we can.

I'd also like to offer my gratitude to David Crowson, Digital Editor for his support in bringing this issue together. I hope you all enjoy it.

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Government unveils £15bn 'Warm Homes Plan' to upgrade homes and tackle fuel poverty

Families across the country will see lower energy bills as a result of the government's comprehensive plan to upgrade the nation's homes.

The government has announced the 'Warm Homes Plan' will deliver £15 billion of public investment, roll out upgrades to up to 5 million homes that could save them hundreds on energy bills and help to lift up to a million families out of fuel poverty by 2030.

Upgrading homes is one of the best ways to bring down bills for good, and this plan is a vital next step in addressing the long-term issue of energy affordability for the country. Home insulation installations fell by more than 90% between 2010 and 2024, and millions of households have paid higher energy bills as a result.

The British people are currently showing record demand for home clean energy products like solar panels and heat pumps. The cost of these products continues to fall, but they are still out of reach for too many - and this plan will help bring these costs down so working people can benefit.

The 'Warm Homes Plan' targets help at low-income families, alongside a universal offer, to ensure that working families can feel the benefits of products that can cut their bills.

Alongside this, the plan will support consumer choice for all households, so people can choose the technologies that work for them as and when they want. Homeowners will be able to apply for government-backed, low and zero interest loans to install solar panels - unleashing a "rooftop revolution".

These loans will also be available for batteries and heat pumps, making it easier than ever for every home to access clean energy technologies that can lower bills. Low-income households and those in fuel poverty could receive support that would cover the full cost of having solar panels put on their rooftop, or insulation installed, alongside new rules to ensure landlords invest in upgrades to cut bills for renters and social tenants.

The 3 pillars of the programme are:

Direct support for low-income families:

- Low-income households will receive free of charge packages of upgrades, depending on what technologies are most suitable for their homes- backed by £5 billion of public investment
- For example, families could receive fully funded installations of solar panels and a battery, to the full average cost (currently £9,000-£12,000)
- For social housing residents, this could mean upgrades to entire streets at the same time, lowering bills and improving warmth and comfort for whole neighbourhoods

An offer for everyone:

- The government-backed, zero and low interest loans programme to get solar panels onto the nation's rooftops and new rules that mean every new home will come with solar panels by default
- This plan will triple the number of homes with solar panels on their rooftops by 2030
- Making it easier for anyone who wants to get a heat pump, with a £7,500 universal grant for heat pumps, and the first ever offer for 'air-to-air heat pumps' that can also cool homes in the summer

To read the story in full visit: **www.acrjournal.uk/heat-pumps/government-unveils-15bn-warm-homes-plan/**

Trade associations unite to launch heat pump insulation guide

The Thermal Insulation Contractors Association (TICA) has joined forces with key industry partners to launch a definitive good practice guide covering the thermal insulation of domestic, communal and commercial heat pump installations.

The guide – produced in conjunction with trade bodies, including the Institute of Refrigeration (IoR) and Building Engineering Services Association (BESA) – provides clear, practical guidance on insulation standards for above-ground, externally located heat pump pipework.

The new good practice guide covers domestic applications as well as communal and commercial applications, and it clearly signposts when a specialist thermal insulation contractor is required for the role of insulating the associated pipework.

Lawrence Leask FInstR, Managing Director of Kaizen Energy Consultancy, reinforces why insulation cannot be an afterthought: "Thermal insulation of heat pump pipework often remains an afterthought. It's clear that we cannot afford to remain hyper-focused on efficiency of the heat pump alone. The most efficient heat pump for the application could be specified and installed, but any assumed benefits could easily be undone through poor thermal insulation specification and installation."

The Good Practice Guidance: Thermal Insulation of Externally Located Above Ground Pipework" is available now by visiting: **https://tinyurl.com/jfd7jeye**

Research project: Understanding the factors that will ensure a smooth heat pump transition for households at risk of fuel poverty

The Committee on Fuel Poverty has launched its latest research project, in collaboration with Carbon Trust.

The study, 'Understanding the factors that will ensure a smooth heat pump transition for households at risk of fuel poverty', will generate critical evidence that will provide insight into how heat pumps are being used in the UK, and could help shape future policy in the area.

This research will examine the lived experiences of fuel poor households with heat pumps, identify the factors that distinguish positive from negative outcomes, and develop practical recommendations for policy makers, delivery bodies, and installers. The findings will help inform how future policies could be delivered.

The research team requires support from local authorities and housing associations to identify households who have had a heat pump installed and would be willing to share their experiences. The team is also interested in speaking with practitioners who have first-hand experience of working with fuel poor households during heat pump installations, or who have delivered programmes involving heat pump deployment in low-income homes.

To read the story in full visit: **https://tinyurl.com/yrz3s6fv**

Green Heat Network Fund (GHNF) kicks off the new year with £47 million to four projects

Four projects across England are receiving a share of £47 million from the Green Heat Network Fund (GHNF), supporting the delivery of low-carbon heat networks across Greater Manchester, London and Sunderland.

This announcement marks the continuation in a long-term programme supporting governments ambition to double the size of England's heat network sector over the next decade. The variety of innovative clean heat projects receiving funding showcases the central role of the GHNF in turning that ambition into delivery.

The investment will support heat networks using a variety of low-carbon sources, including harnessing heat from the River Thames, Manchester Ship Canal, sewage treatment works, and local data centres.

The heat networks that have been awarded funding through the GHNF are:

- Waterloo and South Bank heat network (£15.6 million commercialisation and construction funding).
- Media City heat network (£5.3 million commercialisation and construction funding)
- Sunderland Central heat network (£15.5 million commercialisation and construction funding)
- Hounslow heat network (£10.5 million commercialisation and construction funding)

To read the story in full visit: **www.acrjournal.uk/heat-pumps/ghnf-kicks-off-the-new-year-with-47-million-to-four-projects/**

Scott Johnston promoted to LG product manager for Exi-tite Scotland

Scott Johnston has been promoted to product manager for LG in Scotland, following a highly successful first year with the business.

Scott began his career in the HVAC industry in 2017 with Glasgow-based installer Fisher Group, building experience across operations, sales and air conditioning estimating. Following Fisher Group's acquisition by Johnson Controls, he progressed to a national estimating role, conducting site surveys and developing designs and costings for projects across the UK.

He joined Exi-tite in October 2024, bringing a strong blend of contractor-led experience and technical estimating expertise into his role.

Scott, said: "Exi-tite is a company that genuinely looks after its people, and I've felt supported from day one. I'm really pleased to be able to progress within the organisation, and I'm looking forward to continuing to support our partners across Scotland in this new role."

www.exi-tite.com

New digital training programme for heating professionals

Ideal Heating's Expert Academy has partnered with Warmur Academy to support the launch of Hydronics Unlocked, a brand-new digital training programme that helps heating professionals apply modern system design principles in the real world, on any job.

The collaboration brings together Ideal Heating's training leadership and trusted installer brand with Warmur Academy's specialist expertise in hydronic system design, to jump-start a shift in competency across the industry.

Hydronics Unlocked is built around Warmur Academy's unique 10-step process, turning hydronic theory into a practical, repeatable method engineers can use to design and set up any system. The new programme will combine the current in-person 1-day course with an interactive digital course to offer flexible routes for learners while working towards a recognised Low Temperature qualification.

As a founding partner, Ideal Heating will accelerate the rollout of the digital learning platform and bring the scale the sector needs for mass adoption.

The online programme will be available directly through Warmur Academy and via trusted industry partners, to provide learners with flexible ways to access the training. As a founding partner, Ideal Heating installers will benefit from exclusive early access to the training from Spring this year.

To find out more, or to register for the course, installers should contact **enquiries@expert-academy.co.uk**

Custom Heat qualifies its largest-ever apprentice cohort

A Midlands heating and plumbing firm is celebrating its largest-ever cohort of qualifying apprentices, with six engineers set to complete their training this year during the National Apprenticeship Week.

Midlands based Custom Heat will see **Beth Jenkins**, **Isaac Clerc**, **Cam Lea**, **Caleb Hill** and **Liam Hazelwood** complete their City & Guilds Level 3 plumbing and heating qualifications this year. The company's South West operation will also see **Dillon Newton**, aged 23, from Bodmin, who is studying at Cornwall College Group, qualify by spring.

The apprentices represent the next generation of skilled engineers entering the sector, at a time when demand for qualified heating and plumbing professionals continues to increase across the UK.

The milestone comes as the heating industry faces a growing skills crisis. There are currently around 130,000 gas engineers registered with the Gas Safe Register, but with around half aged over 55, an estimated 65,000 could retire within the next decade. The figures underline the importance of apprenticeship programmes in securing the future workforce.

The six apprentices reflect a range of routes into the trade. Beth, 28, joined Custom Heat after switching careers from the care sector and was crowned HPM Apprentice of the Year 2025, recognised for bringing strong communication and customer care skills into the traditionally male-dominated industry.

Isaac, 22, joined the company in 2021 and has gained experience across domestic and commercial work, including bathrooms, boiler installations, underfloor heating and heat pump systems. Cam, 23, followed his father into gas engineering after meeting Custom Heat engineers through his rugby club, while Caleb, 21, and Liam, 23, entered the trade after previous roles in vehicle maintenance and construction. Dillon was crowned Gold medallist for plumbing at the WorldSkills UK National Finals in November 2025, competing against more than 400 finalists across over 40 skill categories.

https://customheat.co.uk/

Custom Heat Apprentices Caleb Hill, Bethany Jenkins, Isaac Cerec, Cameron Lea, Liam Hazelwood

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Innovation is on the horizon through ice energy storage

Christian Engelke, Owner and Consultant at EngC Consulting, explores how ice energy storage works and why it offers a compelling alternative to boreholes and ground collectors.

Ground Source Heat Pumps (GSHPs) have long been celebrated for their efficiency and ability to deliver both heating and passive/active cooling. Yet in the UK, installations have slowed in recent years - with 2025 figures suggesting fewer than 800 registered systems under 45 kW, the lowest since 2010. High upfront costs, drilling requirements, and lengthy planning processes have all contributed to this slowdown.

But innovation is on the horizon. Ice energy storage offers a fresh approach that could make GSHPs more accessible, quicker to install, and easier to integrate into both residential and commercial projects. By harnessing the latent heat released when water freezes, this technology provides a compact, sustainable alternative to boreholes and ground collectors - and could help reposition GSHPs as a competitive choice in the UK's energy transition.

Key benefits of ice energy storage

- **No drilling required** – avoids costly boreholes and ground collectors
- **Compact installation** – prefabricated tanks fit into limited land space
- **Fast setup** – installation time reduced by up to 50%
- **Dual function** – provides heating and passive cooling without compressor use
- **High efficiency** – annual performance factors (SCOP) between 4 and 5
- **Sustainable** – uses free environmental energy, reducing CO_2 emissions
- **Durable** – actively regenerated, maintaining performance for decades
- **Applications** – suitable for single-family homes, schools, offices, logistics halls, and data centres

The principle of ice energy storage

An ice energy storage system is a sustainable and economical solution for supplying heating and cooling to buildings. It stores environmental energy at a low temperature level without loss and makes it usable for a heat pump at any time.

Why low temperatures are ideal?

In the ground, temperatures in the UK are between about 10 and 12 °C all year round – regardless of the season. This geothermal heat flows into the uninsulated ice storage tank and either brings in additional energy or cools the storage tank in summer. 10 to 12 °C are ideal conditions for heating with a heat pump as well as for cooling buildings.

How the ice storage system works?

The ice storage tank is a large water tank that is installed in the ground. It can be made of plastic (for volumes up to approx. 20,000 litres) or concrete structures (for larger systems of up to 1000m³). The heat pump extracts energy from the water in the storage tank via heat exchangers until it gradually freezes. This creates a special effect: crystallisation heat.

Christian Engelke, owner and consultant at EngC Consulting

What is heat of crystallisation?

Heat of crystallisation is the energy released when water freezes. The special feature is that this energy is contained in the phase transition – i.e. exactly at the moment when water becomes solid (ice) from 0 °C to liquid 0 °C. This releases as much heat as would be necessary to heat water from 0 °C to about 80 °C. This large amount of energy is available to the heat pump without the need for additional environmental heat. The resulting ice is therefore a thermal waste product that is extremely valuable for heating operations.

Direct use or storage?

If energy is available in the environment – for example through air, sun, roof or façade collectors, waste heat or rainwater – it is either fed directly to the heat pump or stored in the ice storage tank.

Hurricane solar air absorber

Solar air absorber fence

large commercial ice energy store under construction

Energy flow principle of a GSHP system with ice energy store

Regeneration – recharge several times a year

An ice storage tank is regenerated several times over the course of the year, i.e. recharged with heat. Various environmental energy sources are used for this purpose:

1. Solar air absorbers that absorb solar heat directly from the ambient air
2. Energy fences that harness wind and solar energy on fence surfaces
3. Active roofs that combine rainwater retention, greening and energy generation

These sources provide heat even on cold winter days or in the transitional period and ensure that the storage system retains its full capacity for decades.

High efficiency – more free energy than electricity

A properly designed ice energy storage system achieves annual performance factors between 4 and 5. This means that for one kilowatt hour of electrical energy, the heat pump supplies an additional more than 4 kWh of free environmental heat. This ensures low operating costs and a very good climate balance.

Advantages over geothermal probes or horizontal collectors

Geothermal boreholes continuously extract heat from a limited volume of earth. Over time, the surrounding soil can cool down, reducing efficiency. An ice reservoir, by contrast, is actively regenerated and maintains full performance for decades – independent of geological conditions or permits for deep drilling.

Another advantage is the significantly smaller footprint required. A 10 kW GSHP system typically needs around 120 m² for boreholes, 300 m² for a horizontal collector loop, but only 19 m² if an ice store is used. This is less than a tenth of the space required compared to traditional ground extract solutions.

For larger commercial systems, the difference is even more striking. A 400 kW installation would require approximately 3,500 m² for boreholes (depending on ground conditions), 12,000 m² for a horizontal collector loop, yet just 320 m² for a single 500 m³ ice energy store.

Sustainable and economical

A properly designed ice energy storage system has a payback period of less than ten years. It uses free environmental energy, significantly reduces operating costs and avoids fossil fuels. The technology is durable and can be used for both heating and cooling.

The heart of the system: control and efficiency

The key components are the control technology. It ensures that the cheapest energy source is always used and that regeneration takes place optimally. With system efficiency monitoring, the system is permanently monitored, the operation is analysed and adapted to the actual consumption. This means that the system works with maximum efficiency at all times.

Future outlook

In Germany, companies such as Solar Eis and Kraftwerk Solutions have pioneered ice energy storage systems, providing valuable experience and technical input that can inform future UK projects. More than 1,000 systems are already in use in single-family homes. There are now more than 500 systems in commercial buildings – such as schools, office and administration buildings, logistics halls or data centres.

In the UK two residential systems have been realised over the last 7 years and the potential is there. For the residential market the key benefit is that it is simple to install. Premanufactured tank and other accessories make the installation quick and cost effective. Especially for new build or complete building renovations GSHP with ice energy store could be a real winner.

For commercial systems using a 400kW GSHP the installation of the ice energy storage from planning to commissioning takes only three months.

Conclusion

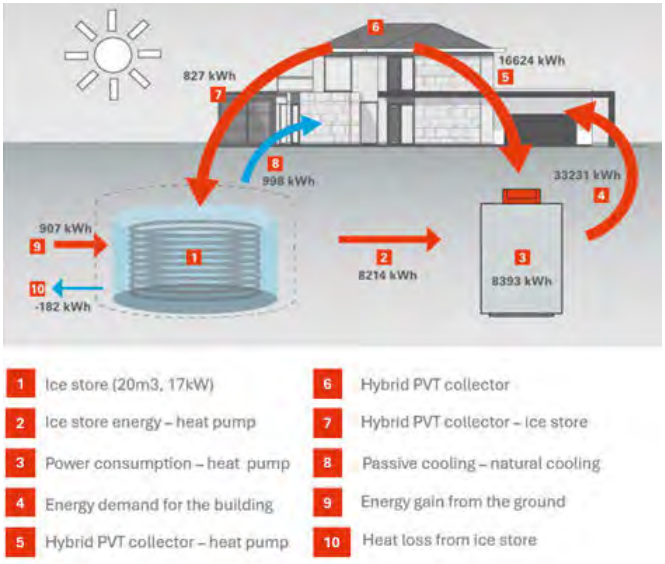
Ice energy storage combines a simple physical principle with modern system design to deliver reliable heating and cooling. By regenerating itself through environmental sources, it avoids the longterm efficiency losses of conventional ground probes, while offering installers and building owners a faster, more flexible solution.

With hundreds of systems already operating across Europe - from singlefamily homes to schools and logistics centres - the technology has proven its durability and efficiency. For the UK, the opportunity is clear: ice energy storage could help overcome barriers to GSHP adoption, reduce costs, and support the drive toward lowcarbon heating. The time is right to explore this innovation more widely and bring its benefits to both residential and commercial markets.

www.engcconsulting.co.uk

Source

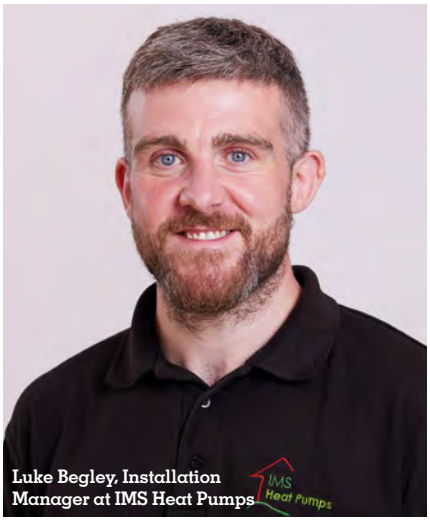
Images and input for the article have been provided by Solar Eis **www.solareis.com** and Kraftwerk Solutions **www.kraftwerkernergiezukunft.de**. Both companies have pioneered innovative ice energy storage systems in Europe, and their expertise is helping to shape future projects and applications in the UK.



Energy flow principle of a GSHP system with ice energy store

Pushing the boundaries of Ground Source Heat Pumps (GSHP): Lessons from a mine-water project

Luke Begley, Installation Manager at IMS Heat Pumps, shares with us a project which used an unconventional mine-water heat source to achieve real-world performance that significantly exceeds typical Ground Source Heat Pumps (GSHP) expectations.


Luke Begley, Installation Manager at IMS Heat Pumps

GSHPs have long been recognised as one of the most efficient and reliable low-carbon heating technologies available. When correctly designed and installed, they offer consistent performance, low running costs and long service life. Yet despite these advantages, GSHPs are still sometimes perceived as complex or niche compared with air-source alternatives.

In my experience, that perception often comes down to unfamiliarity rather than limitation. Some of the most impressive results I've seen from heat pump systems have come from ground source installations where the site conditions, system design and commissioning have been treated as a single engineering challenge rather than a set of standard components.

One such project is Stillwaters, a new-build home in North Yorkshire that recently won Heat Pump Project of the Year at the H&V News Awards. Delivered by myself and a skilled team of IMS Heat Pumps engineers, the project uses an unconventional mine-water heat source to achieve real-world performance that significantly exceeds typical GSHP expectations.

Understanding the site

The Stillwaters property is located within a Victorian woodland estate In North Yorkshire, set in an Area of Outstanding Natural Beauty. From the outset, it was clear that this would not be a standard domestic installation. The client was committed to a low-carbon heating solution that would sit discreetly within the landscape and avoid the visual and environmental compromises associated with oil or LPG.

With no access to mains gas, a heat pump system was the obvious route. However, traditional GSHP approaches such as boreholes or extensive horizontal ground loops presented challenges due to the sensitivity of the site and the desire to minimise disturbance.

What made this project unusual, and ultimately highly successful, was the presence of a disused lead mine on the land. The mine produces a continuous flow of underground water, and early investigations suggested that this water maintained a stable temperature throughout the year. Rather than seeing this as an obstacle, we recognised it as a genuine opportunity.

Why mine water makes sense

From a heat pump perspective, source temperature stability is everything. The more stable and favourable the source temperature, the lower the temperature lift required by the compressor, and the higher the system efficiency.

Underground mine water offers exactly that. Unlike rivers or surface ponds, which closely follow seasonal air temperature changes, mine water is insulated by the surrounding geology. This makes it particularly well suited to heat pump applications, provided it is handled carefully.

Our approach was to design a bespoke system that could extract energy from the mine water without disrupting its natural flow or the surrounding environment. A custom reservoir was constructed to house a Nuenta Energy Blade collector, allowing heat to be transferred efficiently while maintaining separation between the mine water and the closed heat pump circuit.

Getting this element right was critical. Flow rates, reservoir volume, freeze protection and long-term resilience all had to be carefully considered. The performance gains only materialise if the source behaves predictably over time, so we invested heavily in the upfront engineering.

Designing for low temperatures

At the heart of the installation is a NIBE S1155-16 kW three-phase GSHP. The property has a peak heat demand of 11.18 kW at a design outdoor temperature of –4.7 °C, and from the outset the goal was to keep flow temperatures as low as possible.

We designed the system around a 36 °C design flow temperature, which immediately places greater emphasis on the emitter side of the system. To achieve this, underfloor heating was installed throughout the property's 307 m² floor area. Every room was calculated individually, with pipe spacing adjusted between 100 mm and 200 mm depending on heat loss, floor construction and finish.

This level of detail is essential. Low flow temperatures are not something you simply "set" on a heat pump, they are enabled by correct emitter sizing and distribution design. If that work isn't done properly, system efficiency inevitably suffers.

Domestic hot water is provided via a 300-litre high-gain unvented cylinder. The cylinder selection and control strategy were chosen to balance efficiency with real-world usability, ensuring reliable hot water delivery without excessive reliance on immersion heating.

Controls and commissioning

Modern GSHPs are extremely capable, but they still rely on good commissioning to deliver their full potential. At Stillwaters, the control strategy includes internal room sensing, an external temperature sensor and weather compensation, allowing the heat pump to modulate smoothly rather than operating in a simple on-off fashion.

Remote connectivity also plays an important role. It allows us to monitor performance, check operating conditions and fine-tune settings after handover. For complex systems like this, commissioning doesn't end when the system is switched on - it's an ongoing process of optimisation.

As installers, this is where we add real value. A well-commissioned system not only performs better on day one, but it also continues to perform better over its lifetime.

Delivering the installation

The project took around ten months from initial survey to final commissioning and handover. Alongside the heating installation, the build required close coordination with civil works, plantroom layout planning, and careful routing of pipework to protect the surrounding environment.

Leading the installation alongside our team of heating engineers, my role was to ensure that the design intent was delivered accurately on site. On projects like this, clear communication and planning are just as important as technical knowledge.

You don't get many second chances when you're integrating a bespoke heat source into a protected setting, so attention to detail is key.

Performance in practice

Since commissioning, the system has exceeded expectations. The installation is currently achieving a Seasonal Coefficient of Performance (SCOP) of 6.2, comfortably outperforming the original design estimate.

Stillwater energy blade

This level of efficiency is the result of several factors working together: a stable mine-water source, low-temperature underfloor heating, inverter-driven modulation, and careful commissioning. None of these elements on their own would deliver the same outcome, it's the combination that matters.

From the homeowner's perspective, the benefits are simple and tangible: stable indoor temperatures, reliable hot water and significantly reduced running costs compared with fossil-fuel alternatives. From an installer's perspective, it's a strong example of what GSHPs can achieve when they are treated as engineered systems rather than off-the-shelf products.

Key lessons for GSHP installers

Looking back on the project, a few lessons stand out:

- Don't overlook unconventional sources: Stable water sources such as mine water can deliver exceptional results when properly engineered.
- Emitter design is critical: Low flow temperatures don't happen by accident; they are designed into the system.
- Commissioning matters: Real-world performance is won or lost during commissioning and early operation.
- Collaboration pays off: Complex GSHP projects benefit hugely from close coordination between designers, installers, and other trades.

The plant room at Stillwater

Looking forward

As the heating industry moves towards net zero, GSHPs will play an increasingly important role, particularly in projects where long-term efficiency, reliability and low carbon impact are priorities. Installations like Stillwaters demonstrate that ground source systems still have enormous untapped potential, especially when installers are prepared to engage with site-specific challenges and think creatively about heat sources.

For me, this project reinforces why GSHPs remain such a compelling technology. When they're done properly, they don't just meet expectations, they exceed them.

www.imsheatpumps.co.uk

Networked GSHP borehole drilling

It's all about networking

John Marsh, Chief Innovation Officer at GTC, discusses networked Ground Source Heat Pumps (GSHPs), the quiet infrastructure that stands to revolutionise new build home decarbonisation.

As the Future Homes Standard (FHS) moves from policy into practice, the UK housebuilding sector faces a pivotal shift. The conversation is no longer simply about selecting a compliant low-carbon heating system; it is increasingly about long-term performance, reliability, whole-life cost, and how new homes can integrate more intelligently with a changing energy system.

Air source heat pumps naturally receive much of the public attention, yet a quieter transformation is taking place beneath the surface, quite literally. Networked GSHP systems are emerging as one of the most robust, efficient and future-proof solutions for FHS-ready developments. By combining shared ground loop infrastructure with individual in-home heat pumps and smart optimisation technology, these systems offer a blend of predictability, comfort and grid-friendly performance that individualised solutions often struggle to match.

What makes Networked GSHPs so powerful is not a single advantage, but how the entire system works cohesively to meet the needs of developers, residents, planners and the energy system itself.

FHS compliance, made simple

For developers, the first challenge is ensuring that homes meet FHS requirements in a way that is buildable, scalable, and attractive to buyers. Networked GSHPs simplify this significantly. The constant year-round ground temperature provides a stable heat source that enables high seasonal performance, typically with heating coefficients of performance around 4.2, exceeding many air-to-water systems.

When combined with smart thermostat technology, these systems optimise heat delivery based on occupants' routines and integrate seamlessly with rooftop solar PV and other renewables. This makes it easier for developers to future-proof homes, achieve strong SAP scores, and deliver predictable low-carbon performance without requiring oversized emitters or intrusive equipment.

This stability is particularly valuable as developers prepare for FHS homes that must dramatically reduce carbon emissions and energy use. With Networked GSHPs, those performance thresholds are met comfortably, without complex engineering work at plot level.

John Marsh, Chief Innovation Officer at GTC

Attractive and tangible benefits for homebuyers

The financial side of low-carbon heating is increasingly important to buyers. Rising energy bills have sharpened awareness of running costs, and new home purchasers are approaching heating choices with more scrutiny than ever before.

Against this backdrop, Networked GSHPs perform strongly. A typical three-bed semi-detached home, built to the expected FHS and connected to a shared ground loop can achieve whole-home energy cost reductions of up to 47% compared with an equivalent gas-heated house. When compared with homes using individual air source heat pumps, the whole-life cost advantage is typically around 25% - a notable difference for households balancing affordability and sustainability.

These savings stem from capturing low-grade heat from the ground, where temperatures remain stable. Unlike air source systems, which are influenced by cold snaps, humidity and frost cycles, ground temperatures are unaffected by weather. The result is not only greater efficiency, but also greater predictability - a quality that residents consistently value.

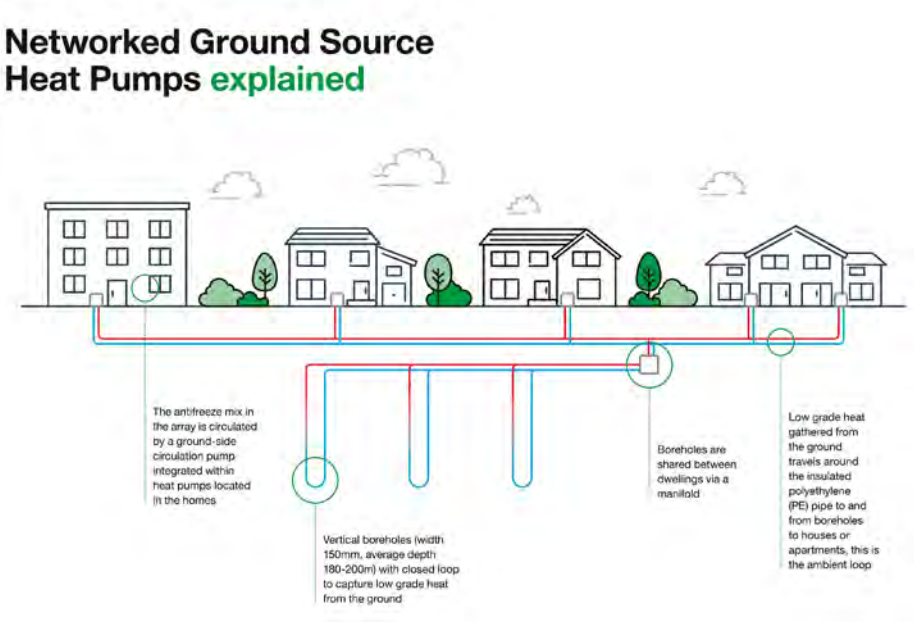
Comfort is another compelling factor. With no outdoor unit, the system avoids noise concerns and preserves outdoor space and aesthetics. Inside the home, quiet operation and consistent heat delivery create a comfortable living environment. And as the UK contends with increasing summer temperatures, the passive cooling capability of ground loops provides a low-cost way to meet Part O requirements while improving summertime comfort without resorting to energy-intensive air conditioning.

Supporting a smarter, more flexible energy system

As the UK shifts toward widespread electrification of heat, the resilience of the electricity system becomes a vital consideration. One of the most compelling advantages of Networked GSHPs is their inherently low peak electrical demand, often requiring a similarly sized electricity connection to gas-heated homes. This is typically half that required for individual air source heat pumps thanks to a stable temperature ground source versus variable air temperatures and humidity issues which cause frosting with air-source heat pumps.

Smart controls amplify this benefit by enabling households to participate in grid flexibility services. When residents opt in, their heat pumps can automatically shift or reduce their demand for short periods to help balance the grid during peak times.

This ability to integrate with the energy system marks a shift in how new homes contribute to decarbonisation. Rather than adding strain during peak periods, developments built around ground source networks can actively support the transition to a smarter, cleaner grid.



A predictable, transparent experience for residents

From the resident perspective, Networked GSHPs offer a simple, predictable and confidence-inspiring ownership experience. Residents typically pay a single monthly charge that covers all servicing, maintenance and replacements over the lifetime of the system. There are no unexpected repair costs, and no requirement to source specialist engineers.

The smart thermostat plays a central role in enhancing comfort and energy savings. It enables remote control via a mobile app, optimises heating schedules automatically, and provides transparency over energy use. These features make the system easier and more intuitive than many traditional heating controls.

Efficiency benefits also translate into environmental reassurance. Networked GSHPs are up to five times more efficient than gas boilers, and around 15% more energy-efficient than individual air source heat pumps.

Finally, heat networks now fall under Ofgem regulation, offering residents the same protections and consumer confidence that they expect from established utilities.

A compelling sustainability story

Beyond the practicalities of compliance and comfort, Networked GSHPs offer a powerful sustainability narrative. They deliver substantial reductions in operational carbon, support renewable integration, and provide visible evidence of a developer's commitment to responsible, future-ready homes.

For planners, the technology aligns well with carbon-reduction commitments and local net-zero aspirations. For buyers, it strengthens trust in the long-term resilience and environmental credentials of their new home. And for the wider community, it supports a scalable transition to low-carbon heat without adding noise or visual impact.

In a housing market where sustainability influences sales appeal, brand reputation and planning outcomes, this technology delivers both substance and story.

A future-proof pathway

Decarbonising heating will require a range of technologies, but Networked GSHPs occupy a uniquely advantageous position. They offer high efficiency, predictable performance, grid-friendly operation, low running costs, and long-term simplicity for both developers and residents.

As the UK accelerates toward the FHS and beyond, treating ground source heat as shared infrastructure rather than an individual appliance represents a strategic shift - one that aligns with the broader ambitions of a net-zero energy system.

Quietly, beneath the ground, lies one of the most scalable and resilient pathways to delivering the next generation of low-carbon homes.

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The ideal partnership: Heat pumps and underfloor heating

Tony Croke, Product Manager for Indoor Climate Solutions at Wavin, explains why underfloor heating (UFH) is a valuable addition to any installer's toolkit - offering a reliable, future-ready solution that enhances system performance and supports regulatory compliance.

In the UK, the way we heat our homes and buildings is changing. With heating responsible for over a third[1] of the nation's carbon emissions, decarbonisation has become central to national net-zero targets and energy security strategies. Heat pumps are rapidly becoming the go-to low-carbon heating option. Rising energy bills, government support, and growing demand from homeowners for cleaner, more efficient systems are all driving the shift away from traditional gas boilers.

Government targets are clear - heat pump installations are set to rise dramatically, with at least 600,000 expected each year by 2028. For installers, this isn't just more work - it's a chance to rethink what a "standard" home heating system looks like. Systems once seen as premium, like underfloor heating (UFH), are now a natural fit with heat pumps.

This combination brings real benefits. Better system performance, more comfort for homeowners, and smarter solutions that add value to properties. It's also an opportunity for installers to stand out, offering more tailored solutions, and increase returns.

A planet-friendlier investment

It's no secret that the UK is rapidly moving toward a future that relies much less on carbon emissions to produce its energy, and the government's impending Future Homes Standard reflects this shift. Expected to come into effect as early as this year, the legislation mandates that new builds must produce at least three quarters (75-80%) less carbon emissions than those built under current Building Regulations.

According to a study by the International Energy Agency[2], heat pumps can cut carbon emissions by between 20% and 80% compared to traditional fossil fuel-based heating. As the Future Homes Standard edges closer, installers are under increasing pressure to deliver low-carbon solutions - even though many of the final details remain unclear still. With the full regulatory picture still emerging, the immediate priority is clear: specifying systems that cut emissions wherever possible and aligning with the direction of future compliance.

This is where UFH comes in. Unlike traditional radiators, both UFH and heat pumps are designed to operate at lower temperatures; which makes them naturally compatible. This allows the heat pump to run within its optimal temperature range, without the need to work harder to deliver comfortable heat levels. The result is a more balanced, energy-efficient system that maintains comfort, keeping both energy use and carbon emissions low.

An investment in comfortable living and your wallet

Unlike traditional convection heating, UFH distributes warmth evenly across the entire floor, eliminating cold spots and creating a consistent, radiant heat that feels natural and inviting. The system also operates silently and out of site, freeing up interior space and offering greater flexibility for interior design.

These systems also operate at significantly lower temperatures – typically between 30-50°C for hydronic underfloor systems, like Wavin's Comfia system[3], as opposed to the 60-70°C required for conventional radiators, making it a natural fit for low-carbon heat sources like heat pumps.

This synergy results in a more balanced heating system that uses significantly less energy compared to traditional boiler system. When heat pumps are paired with UFH's ability to evenly and consistently radiate heat, the home stays warm for longer, reducing the need for frequent thermostat adjustments. This creates a lower overall energy demand throughout the home, helping to cut heating costs in the short term while maintaining a high level of comfort for the homeowner.

But this heating combination isn't just a smart financial choice in the short term. For homeowners looking to make long-term improvements, a heat pump and UFH setup offers lasting value.

An investment into the future

As a long-term investment, installing a heat pump and UFH system helps future-proof a home by aligning with upcoming government regulations, boosting sustainability credentials, and enhancing both adaptability and cost-efficiency. This added value can make the property more attractive to energy-conscious buyers or first-time buyers, increasing its market appeal when the homeowner decides to sell. In this way, the combination of heat pump and UFH not only delivers day-to-day savings but also potentially supports a stronger financial return in the future.

To assist developers in meeting their future goals and government regulations, Wavin is also investing in installer expertise through its Wavin Installer Network (WIN)[4]. It's a free-to-join programme offers tailored training, hands-on support, and priority access to technical guidance for UFH, ventilation and heat recovery systems. WIN is designed to help installers enhance their skills, stay up to date with the latest technologies, and deliver high-quality installations with confidence, whilst remaining compliant to new and existing regulations.

For homeowners, the combination of UFH and a heat pump offers long-term comfort, energy efficiency, and peace of mind. For installers and the wider trade, it represents a future-ready solution that meets the growing demand for sustainable, low-carbon homes.

https://wavin.com/gb

Source

1. https://tinyurl.com/55eh8bns
2. www.iea.org/reports/the-future-of-heat-pumps/executive-summary
3. https://promo.wavin.com/en-gb/comfia-underfloor-heating
4. https://wavin.com/gb/win

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Daikin opens its new Manchester Training Academy

Heat Pumps Today Editor, **Juliet Loiselle**, visited Trafford in Manchester to attend the opening of Daikin's Training Academy.

The event was very well attended; in fact, I'd say a full house. Installers, partners and press were welcomed by **Tomoji Miki**, Daikin UK's Managing Director. **Daniel Dickenson** from Greater Manchester Combined Authority (GMCA) Low Carbon Programme and Policy Lead talked about the importance of working alongside companies like Daikin. He said: "Daikin's commitment to investing in skills development and low-carbon technology in Greater Manchester is helping us build the green workforce we need to achieve our 2038 carbon neutrality target."

We enjoyed an in-depth tour and witnessed a host of resources to enable the training of new and experienced heat pump installers, along with the installation of renewables technology to support the drive towards net zero in the Manchester region and beyond.

The academy's new facilities feature three state-of-the-art training rooms equipped with the latest Daikin technology, providing participants with direct access to the equipment they'll be installing in the field. This hands-on approach ensures trainees gain practical experience and confidence with industry-leading systems before stepping onto their first real-world job site.

Hands on experience

A standout addition is a realistic house frontage complete with a living room and airing cupboard, featuring a fully operational heating and cooling system. This immersive setup allows participants to practice installations in conditions that closely replicate actual domestic environments, building confidence and competence in real-world scenarios.

The academy also includes an interactive zone dedicated to virtual reality training and a wall of interactive controls, offering innovative learning methods that complement traditional hands-on instruction. These cutting-edge additions ensure trainees develop both the technical skills and practical understanding needed to excel as professional heat pump installers.

The Daikin Manchester Training Academy opening ceremony

Tomoji commented: "Daikin enjoys a special relationship with the Manchester region. Since 2022 we have generated £0.5 million in social value for the city-region. This includes donating 40 heat pumps to the Embassy Village charity and training 35 college tutors.

"The growing appetite for low carbon heating, and a nationwide shortage of trained engineers, means there has never been a better time for installers to upskill into heat pumps. With the transformation of our Manchester Training Academy, we are better equipped to provide the most advanced training to local tradespeople."

James Harries, Head of Climate Change and Sustainability Service at Trafford Council added: "I'm pleased to welcome the opening of Daikin's new training facility in the Trafford area. It will help the region's residents and businesses decarbonise their heating and cooling. In turn this will help to create and support hundreds of well-paid and secure jobs across the region and the North of England."

The opening of the new academy comes at a key moment for Daikin, having recently signed a Memorandum of Understanding with the Greater Manchester Combined Authority. This is part of a landmark five-year collaboration agreement aimed at scaling up low-carbon heating across the city-region and delivering its 2038 carbon neutrality target.

The agreement strengthens a two-year partnership that has already delivered £0.5 million in social value to the city-region through innovative technology projects. Key achievements include installing 1,500 heat pumps across Greater Manchester, with many benefiting social housing tenants; donating and installing 40 heat pumps at the Embassy Village homeless facility in the city centre; training 35 college tutors who will educate hundreds of young people in heat pump installation; and developing low carbon heating educational resources now being taught in 10 local schools, with plans for city-region-wide rollout.

The Daikin Training Academy offers a comprehensive range of training courses, including Daikin product courses and industry-accredited training for heat pump and renewables installers, social housing providers and developers. In addition, the academy also offers installation training on Daikin's low temperature, high temperature, hybrid, and air-to-air cooling and heating solutions - starting at level 1 through to level 3 and service, fault finding and maintenance courses for different technologies.

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Becoming a heat pump installer

Going from zero experience of renewable technologies to completing seven successful Air Source Heat Pump (ASHP) installations in just seven months is no mean feat. **Bill Taylor**, Co-Director at Harvard Renewables, looks back at his heat pump journey – and what advice he'd give today to others considering moving into heat pumps.

Bill Taylor, Co-Director at Harvard Renewables

Bo Lindeman, Owner of Harvard Heating and the Co-Founder and Co-Director of Harvard Renewables

Bill had been working as a senior engineer at Harvard Heating for 15 years when one day he had a light bulb moment: now was the time to consider expanding into heat pumps. First, though, he needed to persuade his boss **Bo Lindeman** who is the Owner of Harvard Heating and the Co-Founder and Co-Director of Harvard Renewables.

It wasn't that Harvard Heating was short on business – the Kent company was running profitably with a full order book – but Bill had his reasons for wanting to persuade Bo to form Harvard Renewables together.

"For a while I'd been thinking about developing my own skillset and ways to diversify the business," Bill said. "But I also genuinely want to support homeowners and businesses looking to move to cleaner heat, by helping them make informed decisions as to the best solution and approach for them."

Getting started

Bo saw immediately the business potential behind the idea, but this was a whole new area for the pair. So where to start? As Harvard Heating had worked closely with Baxi on the boiler side for over a decade, their first port of call for support was their Area Sales Manager Steve Bates who suggested attending a free Air Source Heat Pump (ASHP) awareness day at Baxi's Dartford training centre.

Bill and Bo signed up immediately. "After the product day, I was 100% convinced and we immediately signed up for the Baxi Heat Pump Installer course to learn more about ASHP design, application, installation and commissioning," Bill continued.

Completing this course would mean that Harvard Renewables could directly commission ASHPs, providing an additional revenue stream for the company. For Bill, though, there was an added benefit.

(L-R) Bo and Bill speaking with a Baxi commissioning engineer

"Our focus is, and has always been, on trust and quality. So, a key benefit of being a Baxi Heat Pump Installer for me was that I could also provide my customers with an enhanced heat pump warranty, which would bring peace of mind of high heat pump performance.

"The Baxi training course divides nicely between theory and hands-on training which suited me down to the ground," he explained. "This was carried out in the workshop, where trainers explained each component to us and really broke it down."

The training didn't stop there. Next, Bill and Bo enrolled on the BPEC ASHP course that Baxi offers. This covers the principles of design, installation, commissioning and servicing ASHP systems. The course is followed by a formal assessment.

First installation

"By now we'd done the research and were fully trained, which meant it was time to put it all into practice," Bill recalled. "Bo decided that the first install should be done at his 1930s detached house – 'putting his mouth where his mouth is', as he neatly put it!

"It was a great idea, but I was a bit daunted, if I'm honest," he continued. "There's a lot of expensive kit involved in a heat pump installation – and don't forget that this was happening at the home of my business partner! The pressure was on."

Fortunately, as a Baxi Heat Pump Installer, Bill also received free assisted commissioning support on the first installation from one of their specialist engineers.

"I can't tell you how reassuring that was! I had a commissioning engineer by my side, checking every detail and offering useful tips for future projects. It really filled me with confidence."

With his first installation a success, it was time to promote Harvard's new service in the local area.

Launching the new company

"Bo and I were so excited about the prospect of starting a new renewables business but, if we are brutally honest, it wasn't as easy as we had anticipated," Bill said. "However, as a company, we are committed to the future of the heat pump industry, so we were absolutely determined to make this work."

A marketing budget had been set aside to launch Harvard Renewables across Greater London and the South East. The first step was to develop a new website. The next move was a Pay Per Click (PPC) campaign with Google to drum up business.

"The PPC campaign was a great way to launch our new Renewables division and reach potential customers," added Bill. "You only pay when someone clicks on your advert, so it's a cost-effective way to get leads. And as you can target users by location, it means you can hone in on the specific area you want to focus on as well as customer type – in our case, homeowners and businesses."

Sort the wheat from the chaff

Sure enough, the leads began to come in, but disappointingly many failed to result in new business. "There was a lot of interest in those early days," Bill explained, "but for me, too many leads came to nothing. All those site visits felt like a waste of time! So, we took the decision to started charging an upfront cost that would be deducted if the job went ahead. Unsurprisingly, this changed the situation overnight, helping us to identify the genuine leads and use our time more efficiently."

On the subject of costs, for Bill this remains a major deterrent for homeowner customers, particularly those living in older properties. "Of course, the government's £7,500 Boiler Upgrade Scheme funding significantly cuts heat pump installation costs," he said, "but there's no getting away from the fact that the total cost can be as much as £12,500 on projects where building fabric or pipework and radiator upgrades are required. That means the homeowner has to come up with around £5,000 which isn't cheap.

"I'd also like to see at least some funding for homeowners looking to replace an existing heat pump with a new model," he added. "Not the full £7,500, but perhaps half of that to allow them to upgrade and optimise comfort and heat pump performance."

Learning curve

Looking back over the last seven months, Bill can hardly believe how much experience and confidence he has gained as an ASHP installer.

"I said I wanted to upskill, but I don't think I fully appreciated that the learning would carry on long after the Baxi training courses!" he laughed. "Every project has been different. We've fitted heat pumps into new build commercial properties, retrofitted ASHPs into older homes and carried out like-for-like heat pump replacements. You name it, we've done it! Each job teaches you something new, so there's never a dull moment."

Advice to those starting out

What advice, then, would Bill give to those considering moving into heat pumps?

"My first piece of advice would be to find out as much as you can at the outset. Dip your toe into the water rather than rushing headlong in. Go on a heat pump product awareness course and speak to other installers who are already installing them. We might be rivals but fundamentally we do get on! Ask if you can go along to see an install so that you have a better idea of what's actually involved. Maybe even partner up with a more experienced company like ours if you have a lead.

"My second tip is to partner with a responsible manufacturer. Baxi were great, not just with the training and commissioning at the early stages, but providing the heat pump solutions, offering regular promotional incentives for Baxi Heat Pump Installers, and supplying leads for new business opportunities. Good manufacturer back up and support shouldn't be underestimated.

"I'd also suggest considering using MCS Umbrella Schemes, especially if, like me, fitting heat pumps is the part you enjoy. I give the design side and admin to a company that specialises in this area, which frees me up to specialise in heat pump installation.

"And finally, if you do make the move to heat pumps, take time to recognise your progress and give yourself a little pat on the back. You won't necessarily know everything in a day, a week or even six months, but what you are doing is incredible, as is the small part you're playing in creating a more sustainable future."

https://harvardrenewables.co.uk/
www.baxi.co.uk

(L-R) A Baxi commissioning engineer and Bill Taylor

Overcoming heat pump noise barriers: Enabling scalable deployment and public acceptance

Members of a research team within the Acoustics Research Centre at the University of Salford, and part of the Future Homes Acoustics team, share their findings from investigations into improved methods for the noise management and assessment of air source heat pumps (ASHPs).

The research team (L-R) Volkan Acun, Kathryn Salter, Lucy Barton, Antonio J Torija Martinez, Jonathan Hargreaves, Simone Graetzer.

Air Source Heat Pumps (ASHPs) have the scope to play a central role in decarbonising the UK's housing stock. As deployment accelerates, however, concerns about noise are increasing. While thermal performance is well understood, the acoustic implications of large-scale adoption (particularly for planning approval and community noise annoyance) remain a challenge.

To address this, a research team within the Acoustics Research Centre of the University of Salford has spent the past three years investigating improved methods for ASHP noise management and assessment. This work forms part of Future Homes, a flagship project led by Energy House Labs and supported by £3.5 million funding under the Innovation Accelerator programme of Innovate UK (project number 10054845) and the Greater Manchester Combined Authority.

The project unites academia (the Universities of Salford and Manchester) and industry partners (including Barratt Developments, Bellway Homes, and Saint-Gobain) to accelerate low-carbon housing innovation. The acoustics team has also worked closely with organisations such as the Heat Pump Association to address noise-related barriers to ASHP adoption.

Through Future Homes, Salford Acoustics[1] has access to a unique research ecosystem for studying sustainable housing. A key facility is Energy House 2.0, which contains full-scale homes within a climatic chamber operating from –20 °C to +40 °C. This setting allows detailed acoustic measurements without interference from wind or traffic noise, which can otherwise mask important features of ASHP sound.

Complementing this work, Salford Acoustics also uses its UKAS-accredited Acoustics Laboratories. These facilities support both standard testing and bespoke studies in vibration, environmental noise, and human perception, allowing ASHP noise assessment by human experience as well as sound levels.

Overview of research work

Our research aims to address noise challenges in ASHPs to support uptake. Key activities include:

- **Noise characterisation:** improved measurement protocols considering directionality, tonality, placement, and cumulative effects.
- **Mitigation strategies:** assessment of common fences as noise barriers.
- **Planning optimisation:** a CIBSE-funded PhD project focuses on minimising community noise impact through better ASHP placement.
- **Stakeholder engagement:** hosted a UK-wide ASHP Noise Policy Workshop (July 2025).
- **Industry collaboration:** published a field assessment report with the Heat Pump Association (Sept 2025) and launched an engineer survey on sound and vibration (Nov 2025).
- **International leadership:** leading psychoacoustics research under IEA HPT Annex 63, coordinating a pan-European study on:
  - Tonality and low-frequency effects
  - Impact of background noise
  - Interaction and cumulative impact of multiple units
  - Psychoacoustic performance of noise barriers

This work provides evidence-based insights to inform policy, improve design, and enhance public acceptance of heat pumps.

Field assessment

Laboratory data is essential, but ASHPs operate in real residential settings. In collaboration with the Heat Pump Association (HPA), the Future Homes Acoustics team recently completed a field study in Nottinghamshire — the first in a planned series — examining the cumulative effects of multiple ASHPs installed in close proximity. Published in September 2025[2], the report provides findings of direct relevance to industry.

One key result concerns the predictability of noise from neighbouring units. It has been postulated that multiple ASHPs operating nearby could create complex interference patterns, leading to localised noise "hot spots" that aren't predicted by standard planning methods. Measurements showed that this is not the case: simple power summing (logarithmic addition of decibels), as is standard in Environmental Noise Assessments, was sufficient to predict combined sound levels.

Although timber garden fences reduce high-frequency noise, they offer little attenuation at low frequencies. As a result, broadband fan noise is reduced while low-frequency compressor tones remain, increasing perceived tonality and annoyance despite a lower overall sound level. These findings indicate the importance of unit placement and appropriate noise barriers.

Psychoacoustics: Beyond the decibel

Noise limits don't guarantee pleasant soundscapes for ASHP owners or neighbours. Current approaches to ASHP noise, including the MCS 020a framework, are based on A-weighted sound levels and simplify how sound is experienced in real residential settings. As a result, compliance does not always align with reported community response.

To explore this further, the Future Homes Acoustics team complemented laboratory and field measurements with a listening experiment involving 50 participants. The study examined how ASHP noise is perceived under different background noise conditions, while keeping the ASHP sound itself unchanged.

The findings showed that background noise influences perception, mainly at lower ASHP levels. Under higher daytime background conditions, ASHP noise below approximately 40 dB(A) was partially masked, with lower reported annoyance. At higher ASHP levels, this masking effect was reduced, and annoyance increased regardless of background sound.

These results do not imply that higher ASHP noise is acceptable in noisier environments. Rather, they indicate that the relationship between ASHP sound level and annoyance is influenced by context, including ambient conditions, particularly at lower operating levels. This helps explain why annoyance can vary between installations that meet the same criteria, and highlights the need to interpret compliance within real-world contexts.

Global leadership

Beyond national and regional work, the Acoustics Team also contributes to international efforts addressing ASHP noise through participation in the International Energy Agency (IEA) HPT Annex 63, part of the IEA's Heat Pump Technologies programme.

Within Annex 63, the team leads Task 3: Psychoacoustics of Heat Pumps, coordinating contributions from eight countries. The task focuses on understanding how human responses change as installations move from single units to multiple ASHPs operating within the same residential area.

A seven-country study modelled realistic neighbourhoods to assess how clusters of heat pump units sound under different noise and barrier conditions. The combined results show how multiple units affect annoyance in dense housing and offer evidence to guide future planning.

Researchers are conducting field measurements to study how noise levels interact when multiple heat pumps are installed in close proximity

Policy and stakeholder engagement

In July 2025, the Future Homes Acoustics team hosted a dedicated ASHP Noise Policy Workshop to support dialogue between research, policy, and practice. The event brought together key stakeholders, including representatives from central government, local authorities, regulators, professional bodies, and industry, with attendees from organisations such as DESNZ, the Heat Pump Association, MCS, CIBSE, NESTA, and DEFRA. Ahead of the workshop, the team also prepared a public policy brief[3] informed by findings from laboratory, field, and perceptual studies, which was used to support the discussion on the day.

The programme combined recent research presentations with structured discussions. Participants reviewed gaps in ASHP noise policy, regulation, and installation practice, and considered how emerging evidence could strengthen guidance and assessment. The workshop also fed into a shared policy roadmap to support future research translation and continued engagement as deployment scales.

The acoustics team is also surveying ASHP installers with CIBSE and the Domestic Building Services Panel (DBSP), and with the support of the HPA's Installer Representative, Damon Blakemore. Focusing on noise and vibration, the survey aims to identify priority issues needing further investigation and to inform training for current and future installers.

Conclusions

As ASHP deployment accelerates, managing noise will remain central to public acceptance and effective policy. Evidence from laboratory, field, perceptual, and international studies shows that factors such as installation practice, the presence of barriers to the propagation of sound, and the context will likely play an important role in shaping the noise impact. Continued collaboration between researchers, industry, and policymakers will be essential to ensure that assessment methods remain robust, proportionate, and aligned with real-world experience.

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When you consider that the heat being generated by the heat pump is flowing through the pipework, if the pipe being routed is outside, it is critical that all pipework and connections are covered by an external grade weather and UV-stable insulation.

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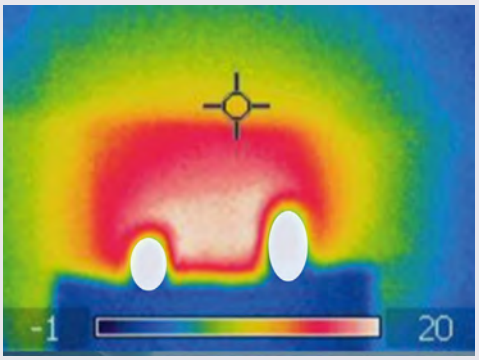
Our Through The Wall Kit is specifically designed to insulate the pipes running through the wall from the exterior to interior. The thermal imagery shows just how much heat is lost when the pipes are not properly insulated.

HEAT LOSS INTO THE EXTERNAL BRICKWORK

The connection of the pipework running through the wall



Thermal images showing just how much heat is lost when these connections are not adequately insulated

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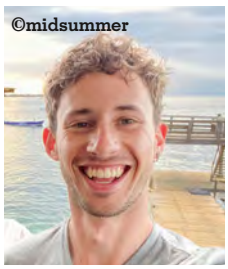
Changing energy paradigms:
A new model for scaling electric heat

Image © Worcester Bosch

Michael Barbour at Midsummer Energy, discusses why domestic heating products need to be treated as flexible, intelligent energy assets, as they are key to making net zero affordable — cutting costs, balancing the grid, and boosting energy security.



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The electrification of heat risks being seen as a contradiction by consumers in the UK. The cleanest energy source should be the cheapest too, and yet gas prices are three to five times lower than electricity, despite around 45% of the UK's electricity coming from renewable sources. Many homeowners therefore believe electric heating technologies will prove more expensive than traditional gas. Nonetheless, electrifying heat at scale is crucial for the UK's net zero pathway and has the potential to benefit consumers significantly.

To realise this opportunity, domestic heating products must no longer be viewed as passive demand. Instead, they need to be treated as flexible, intelligent energy assets, in line with the model other distributed energy resources (DER) and battery energy storage systems (BESS) are already embracing. In such a model, the home is no longer a problem for a constrained grid. Its energy assets - including heating technologies - become part of a distributed balancing mechanism that can smooth demand peaks, reduce reliance on imported fossil fuels, and lower wholesale electricity prices. This is the new energy paradigm that is emerging, and it is essential that heating technologies are included.

This paradigm is driven **by flexibility**: the grid's ability to respond to periods of high or low demand while remaining within critical frequency limits. As electricity demand grows and renewable penetration increases, flexibility is becoming more valuable as an alternative to slow and expensive grid reinforcement. Increasingly, National Grid ESO and distribution network operators contract flexibility from non-traditional sources such as BESS and virtual power plants (VPP), made up of aggregated DERs located in homes.

Using smart home energy management systems (HEMS), providers can aggregate DERs and automate their response to price signals and grid events. This allows consumers to shift electricity use to cheaper periods, earn revenue through schemes such as the Demand Flexibility Service, and automate heating operation to minimise costs while maintaining comfort. However, while optimisation platforms for batteries and EVs are expanding rapidly, heating technologies have been left behind.

This represents a major gap. Heat pumps, thermal storage, and related electric heating technologies represent at least 10GW of flexibility potential by 2030 according to BEEAMA, even before accounting for the future ability of heat pumps to use building thermal mass as a flexibility asset. This is more than three times the peak output of Hinkley Point C. Electrically powered heating therefore represents one of the UK's largest untapped flexibility resources.

For consumers, the opportunity is substantial. Around 80% of household energy consumption in the UK goes towards space heating and hot water. If this demand can be shifted away from peak periods and managed automatically, costs fall. NESTA's HeatFlex project demonstrates that smart heat pump operation can preheat homes or hot water during low-price, low-carbon periods without compromising comfort. The study showed a 32% reduction in whole-house electricity consumption and a 74% reduction in heat pump electricity use during targeted flexibility windows, with high participation and low opt-out rates. Aggregated across households, this delivers meaningful peak demand reduction and financial benefits without requiring active consumer engagement.

Flexibility is not limited to homes suitable for heat pumps. Heat batteries, domestic hot water heat pumps and smart hot water cylinders all provide valuable flexibility, particularly for flats and hard-to-treat homes. If just 20% of hot water cylinders installed today were smart-enabled, the UK grid would gain around 5GW of flexible demand. Compact heat batteries can deliver the majority of a home's heating requirement and charge during cheap periods.

Scaling electric heat without flexibility risks increasing system stress. Scaling it as a flexible resource does the opposite and crucially bolsters energy security. Reframing homes as grid balancing DERs turns them into national and personal energy assets, lowering costs, enabling greater renewable integration, and enhancing energy security. Flexibility is the bridge that makes heat electrification both affordable and sustainable, and heating technologies are a crucial part of the equation. This is the model that consumers need to buy into, because without the decentralised flexibility afforded by energy assets **including** heating technologies located in their homes around the country, the energy transition will struggle to reach its destination.

https://midsummerenergy.co.uk

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Heat pumps work - will 2026 be the year we finally change the narrative?

Public opinion about heat pumps is shifting, supported by new studies that reveal increased end user satisfaction and high performance in cold conditions. **Tim Mitchell**, Sales Director at Klima Therm explores the real-world data that is overturning outdated assumptions about heat pumps and what it means for installers, specifiers and decision makers in 2026.

The Department for Energy Security and Net Zero (DESNZ) public attitudes tracker's research from Summer 2025[1], showed that 76% of respondents had an awareness of air source heat pumps, up from 71% in 2021. Overall, 88% understood we need to change the way our homes are heated to meet Net Zero targets.

There is also a growing body of evidence to support the effectiveness and performance of heat pumps in the UK. **HeatPumpMonitor.org** recently analysed a complete year of data for 169 ASHP systems and found that, when well-designed, ASHPs achieve an average seasonal performance factor (SPF) of 3.86 – a 40% improvement on the 2.81 previously found under the Electrification of Heat project (EoH).

This evidence is backed by Octopus Energy's recent consumer research[2]. More than 1,800 UK based households were surveyed by the energy giant during a recent cold snap. Heat pump owners were more satisfied than gas boiler users across key metrics, including performance during cold weather (85% vs 80%) and running costs (66% vs 43%).

So, what can we take from all this? Well, that when heat pumps systems are specified, designed and commissioned correctly, they are the superior choice, keeping buildings warm and bills low; even as temperatures drop.

Understanding heat pumps – it's not one-size-fits-all

Perhaps the most important point for installers and specifiers to grasp is that heat pumps are not a one-size-fits-all technology. Each installation must be correctly designed on a case-by-case basis, taking into account the building's specific requirements, thermal performance and usage patterns.

Tim Mitchell, Sales Director at Klima Therm

Refrigerant selection has become increasingly important as the industry moves away from high global warming potential (GWP) synthetic refrigerants toward more sustainable alternatives. Natural refrigerants such as CO2 (R744) and propane (R290) are gaining traction due to their minimal environmental impact, with GWP values close to zero compared to hundreds or thousands for traditional HFC refrigerants.

Different refrigerants behave very differently across typical HVAC temperature ranges, however. CO2 heat pumps, for example, operate using transcritical cycles and, when applied correctly, will maintain high efficiency even in extreme cold. Additionally, even standard CO2 machines can deliver hot water at temperatures up to 90°C, which is advantageous for retrofit applications where existing radiators may require increased flow temperatures.

One challenge with CO2 systems is that they operate at much higher pressures, requiring specialised equipment and installer training; another is that those very high efficiencies are only realised with systems operating across large flow and return temperature differences. Indeed, they are best applied to systems with large domestic hot water loads, where the hot water is consumed and the water to be heated is the top-up water at typical mains water service temperatures.

Propane-based heat pumps offer excellent thermodynamic properties and can achieve good COPs across a wide temperature range. Propane systems tend to be more efficient than many synthetic refrigerants in mild to moderate cold conditions typical of the UK climate. Propane is flammable and so requires careful handling and adherence to safety regulations, with charge size limitations that may affect system design in larger applications.

Heat pumps for all climates

In the UK, there seems to be misplaced anxiety about heat pumps operating on cold days - of which we have relatively few throughout the year. We need only look to Scandinavian countries where this technology is widely used to heat homes in climates far colder than the UK experiences. If heat pumps can keep Norwegians warm through Arctic winters, they can certainly handle a British January!

In reality, our changing climate means that overheating is becoming a far more pressing concern for many of our buildings, particularly those in packed city centres. Great British summers, which were once at best comfortably warm and more likely to result in soggy picnics than heat stroke, are now regularly hitting record breaking temperatures. Heatwaves of 40°C are no longer exceptional events but the new normal that we must plan for. We need climate control solutions that keep inside temperatures optimal whatever the weather.

For commercial applications, polyvalent and reversible heat pumps[3] offer the solution. By switching seamlessly between heating and cooling, and in some instances providing both functions simultaneously, delivering year-round comfort from a single integrated system, polyvalent heat pumps can lead to reduced capital expenditure, simplified maintenance and lower operational emissions.

Advances in variable-speed compressors, EC fans, variable primary flow controls and low-GWP refrigerants are pushing polyvalent heat pump efficiencies higher than ever before. The award winning UniPack-P range from Rhoss, for example, can produce hot water up to 72°C and cold water from -10°C to 20°C, ensuring optimal performance in diverse climate conditions.

Another key advantage of reversible heat pumps is flexibility of integration. Many models are designed for installation alongside existing HVAC systems and when incorporated into new-build designs from the outset, can deliver even greater efficiencies.

Looking ahead

For heat pumps to achieve widespread adoption in 2026 and beyond, we need everything to come together in a reinforcing cycle. Evidence from independent studies demonstrating real-world performance is key, but we also need technology and tools that make the specification and installation process quicker and easier, supporting installer confidence at every stage that translates into high-quality, high-performance installations.

If 2026 is to be the year we finally change the narrative around heat pumps, it will require everyone in the industry playing their part. Manufacturers must continue innovating and providing the training and support installers need. Installers must invest in developing their skills and confidence. Policymakers must create an environment that encourages quality over speed. And specifiers must take the time to understand each building's unique requirements.

Reversible heat pumps offer a practical, low-carbon, future-ready solution that addresses both sides of the thermal comfort challenge – cooling in the summer, heating in the winter – with outstanding efficiency. At the moment, this technology is most widely adopted in commercial applications, but if we are serious about climate resilience, HVAC solutions that provide year-round temperature (and air quality) control should be the gold standard for all buildings.

The data shows heat pumps work. The technology is proven. Now it's time to change the conversation.

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Source

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2. https://tinyurl.com/mr3y77be
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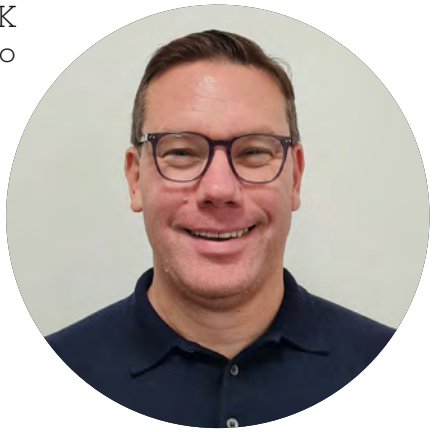
With Norway leading heat pump installations, what can the UK learn?

Greg Banham, Commercial Director for Navien UK, looks at why the UK is behind with heat pump adoption and suggests what could be done to close the gap and accelerate our transition to renewable heating.



Greg Banham, Commercial Director for Navien UK

When it comes to heat pump installations in Europe, Norway is leading the way. More than two-thirds of households in this Nordic country of five million people have a heat pump – more than anywhere else in the world – and Sweden and Finland follow closely behind.

In 2024, Norway sold 48.1 heat pumps per 1,000 households, and in the same year, the UK sold 3.5 per 1,000 households, hence its low sales ranking. Positively, however, the UK saw sales increase by 56% last year and was one of only three markets in Europe to experience growth in 2025, meaning that there is a huge opportunity for the UK heat pump sector to climb the ranks, if it is willing to take learnings from the Nordics.

With 2025 shaping up well so far, the outlook is positive, and it is an attainable goal for the UK to climb European rankings soon enough. With the right policies, skilled workforce, and consumer incentives and support, we can unlock this potential. With the result of cutting our carbon emissions, strengthening energy security, and driving growth in the UK's clean energy sector, heat pumps are a win-win for Europe, so it would be well worth the UK taking notes from Norway's success.

The key to Norway's success

In response to the 1973 Oil Crisis, Norway proactively shifted away from fossil fuels, encouraging the population to adopt heat pumps. Key to this strategy was consumer incentives. The Government ensured early on that fossil fuel heating was the most expensive option; it imposed taxes on carbon emissions from fossil heating fuels to make heat pumps the affordable choice and financially appealing.

The Government also invested significantly in training its workforce to install heat pumps, a move which fostered customer satisfaction and positive reviews, further increasing the adoption of the technology. Arguably, the lack of a skilled workforce is one of several bottlenecks holding the heat pump industry back. As well as training and incentives, Norway's government also implemented long-term policies to discourage fossil fuels and promote alternatives, such as heat pumps.

Ultimately, abundant and affordable clean energy ensured that heat pumps were the economically viable and energy-efficient choice for consumers, while an outright ban on oil boilers in 2020 was successful in positioning Norway as the European market leader.

The UK's situation

While heat pumps are yet to become widespread globally, they offer several benefits compared to traditional heating. Low maintenance and cheap to run, heat pumps are one of the most eco-conscious solutions on the market, effective at reducing carbon emissions and energy bills in properties across the UK.

They will play such a pivotal role in the decarbonisation challenge that the Department for Energy Security & Net Zero's (DESNZ's) ambition for the number of hydronic heat pumps installed per year by 2028 is 600,000 units.

To increase demand, the UK Government has boosted the grant available for heat pumps through the Boiler Upgrade Scheme to £7,500, up from £5,000 for an air source

"WHILE THE NEW REGULATIONS ARE A HUGE STEP IN THE RIGHT DIRECTION, THERE IS STILL THE QUESTION OF HOW THE NORDIC COUNTRIES HAVE BEEN ABLE TO IMPLEMENT SUCH CHANGES IN COLDER CLIMATES, BUT THE UK HASN'T."

heat pump and £6,000 for a ground or water source heat pump. However, heat pumps are still viewed as one of the more expensive options, which is why DESNZ set an ambition for the industry to reduce costs by at least 25% by 2025 compared to 2021 – an ambition that unfortunately was not realised, with reports indicating that cost reductions were minimal.

Beyond cost, heat pumps work very well as both a heat and cooling system and have a very efficient conversion rate of energy to heat. A heat pump will have a smaller carbon footprint compared to a gas boiler – they are around four times more efficient - even when plugged into an electricity grid dependent on high-emitting suppliers.

New regulations that came into force this year as part of the Government's Warm Home Plan, remove restrictions such as the 'one-meter rule' and allow for larger units, making installations more accessible, particularly in urban areas. The new regulations remove significant barriers to installations, and there is no better time than now for homeowners and installers to make the move to heat pumps.

While the new regulations are a huge step in the right direction, there is still the question of how the Nordic countries have been able to implement such changes in colder climates, but the UK hasn't. It could be due to a lack of awareness or the absence of strong policies to promote heat pumps. For certain, installers must receive specialist training to ensure high-quality heat pump installations, something which Norway has shown is key to adoption.

A smart choice for consumers

Norway's success is not easy to replicate. It is one of the wealthiest countries, and it also makes cheap, renewable electricity from hydropower dams, which lowers monthly bills. Sweden and Finland also rank in the top three for the most heat pump installations per 1,000 households, showcasing that the transition to heat pumps can be both viable and environmentally responsible.

Overall, the success of heat pumps in the Nordics is not accidental. Rather, it is the direct result of a well-designed policy mix of economic instruments, financial support and regulation, underpinned by co-ordination and engagement. The natural efficiency of heat pumps has also helped their deployment.

Navien is fully invested in supporting the UK's renewable heating transition and understands that it is a complex process. Its comprehensive training programme in partnership with Ultimate Renewables is designed to build installers' confidence when it comes to heat pump installations, and they can learn how to install Navien's new PEM750 heat pump a monoblock system.

Taking learnings from Norway, it is clear that for the UK to climb the European ranking, electricity prices must be made more competitive, long-term support schemes put into place, and installers must be efficiently trained to make heat pumps the smart choice for UK consumers.

To find out more

Navien's full product offering, visit:
https://navien.co.uk/professional/

Navien's heat pump training through Ultimate Renewables, visit:
https://ultimaterenewables.com/training

WOMEN IN THE HEAT PUMP INDUSTRY

Linda Field, New Build and Social Housing Manager at Qvantum UK, she shares her journey from being a beautician and aerobics teacher to taking on an evolving role focused on building brand awareness and growing Qvantum's customer base.

When I was fresh out of college at 18, I worked as a beautician and aerobics teacher at a local health centre, so yes, I did start out in a totally different field! I loved it, though, and it really gave me independence and confidence. Plus, I had to build my own customer base because there were other beauticians and classes people could choose instead. It taught me so much about working with people and providing excellent service, skills that definitely helped me later in sales.

How did you get into the heat pump industry?

I started out in sales within the plumbing and heating world, working for companies like Porcelanosa, Vaillant and Baxi. When my kids were little, I took a step back to manage some holiday cottages my husband owned so I could be closer to home. But I really missed the industry, so I started helping part-time at a small biomass boiler company nearby. What started as helping with trade shows quickly grew into a full-time sales role as my responsibilities increased. Once my kids were older, I jumped back in fully, and I have been working in heating — and renewables — ever since. Helping people find the right solution has always been what drives me.

I am currently the New Build and Social Housing Manager at Qvantum UK, and honestly, it's such a breath of fresh air! The company is still relatively new to the UK, so my role is always evolving. I head up the new build and social housing team, which I have worked in for years, and my focus is building brand awareness and growing our customer base. No two days are the same, which keeps things interesting, and I love that Qvantum's products are genuinely different from other heat pumps, people are really interested in what we offer and how it can help them.

What are the challenges facing the industry?

There are a few big ones. Uptake of heat pumps has been slow because of uncertainty around the Future Homes Standard, which makes planning tricky for housebuilders. There's also the "spark gap" homes with heat pumps can cost buyers more than traditional gas heated homes, so that's a barrier too. And finally, we really need more young people coming into the trade. Apprenticeships aren't always easy to get, and the industry needs to do more to make it appealing to the next generation.

Did you have any mentors or anyone who inspired you?

My dad was a huge inspiration, even though I didn't fully realise it until later. He was a salesman in the days before emails and mobile phones, everything by post and I would spend so much time with him in his workshop, doing woodwork and fixing things. That probably explains why I was drawn to construction and heating. He had this saying, "The saddest words in the English language are 'if only'," which still sticks with me. It reminds me to take chances and not have regrets.

What would you say to other women considering the heat pump industry?

Absolutely go for it! The industry has changed a lot since I started. Back then, there weren't many women, and it could be tough to be taken seriously. Now, there are so many amazing women doing brilliant work, and there are real opportunities to build a rewarding career.

What do you like to do outside of work?

Most of my time is spent with family — between my husband and me, we have six children and eight grandchildren. I also love spending time with friends, cooking, and having people over for dinner. And I enjoy walking my dog, though not quite as far as we used to, because she's 15 now.

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Scaling up the heat pump revolution

Tim Williams, co-founder of Go Geothermal, explores the accelerating transition to renewable heating in the UK's largest buildings and the innovative solutions now available to forward-thinking organisations.

The conversation around decarbonising Britain's building stock has moved beyond residential properties. Whilst domestic heat pump installations continue to grow at a rapid pace, there's real untapped potential in our public buildings, commercial estates, and leisure facilities. These large-scale properties, from large footprint financial headquarters to energy-draining swimming pools, represent a big challenge and a significant opportunity in our journey towards net zero.

At Go Geothermal, distributing CTC heat pumps from Sweden has positioned us at the forefront of this transformation. As the exclusive UK distributor for CTC, backed by NIBE, we are witnessing a fundamental shift in how organisations approach their heating infrastructure.

The journey has admittedly been slower in the commercial sector than many anticipated, but the options available today are more varied and sophisticated than ever before.

The scale of the challenge

Consider the energy demands of a typical large commercial building. A regional office for a financial institution might need hundreds of kilowatts of heating capacity. A leisure centre with swimming pools operates nearly year-round at significant cost.

Supermarket chains with refrigeration needs generate substantial waste heat that traditionally leaks unused into the atmosphere. Global gyms like Virgin Health, local authority buildings, and educational campuses all share a common burden: enormous energy bills and the pressing need to demonstrate environmental responsibility.

Swimming pools deserve particular attention. Across the country, community pools are closing their doors, unable to sustain the rising energy costs required to maintain water temperatures and adequate air handling. These closures represent not merely an economic failure but a social one, removing vital community resources and health facilities. The sad fact is that renewable heating technology could dramatically reduce these operational costs, yet awareness and adoption still remains low.

Technology leading change

The encouraging news is that the technology has caught up with the ambition. We can now supply single units producing approximately 230kW of heating output. For larger installations, multiple units can be configured to meet virtually any demand, with sophisticated controls ensuring optimal efficiency across varying loads.

Beyond traditional ground source systems, water source heat pumps represent an exciting frontier. Our Thermogenius range shows this versatility, capable of extracting heat from rivers, lakes, and even industrial water sources. The physics are sophisticated: large bodies of water maintain relatively stable temperatures throughout the year, providing an abundant and reliable heat source that requires minimal ground disruption to access.

Tim Williams, co-founder of Go Geothermal

One of our most instructive projects demonstrates this potential brilliantly. At the Lake District Visitor Centre at Brockhole, a lake source heating system has been operational for over five years, drawing heat from Windermere through coils placed discreetly beneath the public transport jetty. This installation, funded through the European Structural Investment Fund's Low Carbon Lake District initiative, saves approximately 50 tonnes of carbon annually whilst heating the historic Brockhole House. Whilst we did not supply the heat pump itself for this project, we provided all the external equipment, including the crucial Thermogenius technology that interfaces between the lake and the heating system.

Brockhole Jetty

The Windermere project offers valuable lessons for others considering similar installations. Bodies of water don't need to be vast to be viable. The technology is proven, reliable, and requires remarkably little maintenance once properly commissioned. Moreover, the visual impact is minimal, an important consideration for heritage properties and environmentally sensitive locations.

Thermal storage potential

Perhaps the most exciting development in large-scale renewable heating involves thermal storage, a concept that remains underutilised despite its huge potential. Picture a modern school building with extensive glazing. On sunny days, solar gain through those windows generates significant heat, often requiring ventilation or cooling even in winter months. Traditional building services simply exhaust this warmth to the atmosphere. What if instead we could capture it?

By coupling heat pumps with borehole thermal storage, we can harvest excess heat during periods of solar gain or high occupancy, storing it in the ground to be recovered during colder periods. The ground becomes a seasonal battery, charged during summer and autumn, discharged through winter. This approach not only improves system efficiency but also reduces the peak capacity required from the heat pump itself, lowering costs.

The experts we work with increasingly design systems that dovetail multiple heat sources and storage strategies. A leisure centre might combine waste heat recovery from refrigeration plant, solar thermal collectors, and ground source heat pumps with cross-seasonal storage. The result is a highly resilient system that minimises reliance on any single heat source whilst maximising overall efficiency.

Research and design

Experience matters profoundly at the specification stage. We draw on extensive in-house research and development capabilities, with manufacturing exclusively within Europe. This is not simply about supply chain security, it means we design and refine these systems, adapting solutions to the specific quirks of UK building stock and usage patterns.

We have built relationships across the commercial and public sectors that go beyond simple equipment supply. We understand the procurement challenges facing local authorities. We recognise the budget constraints in the leisure sector. We know that financial institutions require cast-iron reliability and comprehensive maintenance support. Our role is to match the technical capabilities of world-leading heat pump technology with the practical realities of British buildings and organisations.

The business case strengthens

The economics of large-scale heat pumps have transformed dramatically. Capital costs, whilst still substantial, have decreased as manufacturing scales up. More importantly, the revenue support mechanisms and grant funding available continue to evolve, particularly for public sector and community projects. The Low Carbon Lake District initiative demonstrates how European and domestic funding streams can be layered to make projects viable.

Operating costs tell an even more compelling story. Ground source and water source heat pumps typically deliver between three and four units of heat for every unit of electricity consumed. As electricity grids decarbonise and gas prices remain volatile, this efficiency advantage translates into significant operational savings. For an energy-intensive facility like a swimming pool, the payback period for a properly designed renewable heating system can be surprisingly short.

Looking ahead

The transition to renewable heating in large buildings is no longer a question of if but when and how. The organisations leading this change, from progressive local authorities to forward-thinking leisure operators, are not merely reducing their carbon footprints. They are future-proofing their operations, insulating themselves from fossil fuel price volatility, and demonstrating the environmental leadership that stakeholders increasingly expect.

The variety of options now available means that virtually any large building can find a renewable heating solution suited to its specific circumstances. Whether ground source, water source, or hybrid systems incorporating thermal storage, the technology exists today to dramatically reduce both carbon emissions and energy costs.

At Go Geothermal, we remain committed to bringing the best of European heat pump innovation to the UK market. The revolution in renewable heating has begun. The question for commercial and public sector decision-makers is whether they will lead it or follow behind.

www.gogeothermal.co.uk

A project where a slimline hot water cylinder ticks all the boxes for installers

Jay Abley, Operations Director at EcoFuture, tells us about delivering a retrofit project with a very limited airing cupboard. The cupboard previously housed a small, vented cylinder, so an innovative product was used to meet the customer's needs.

EcoFuture delivers total renewable solutions from design to installation for commercial and residential projects across the North of England.

The business is thriving due to increasing demand for solutions that provide low carbon and energy efficient benefits that help the environment. The team is experienced in renewable heating and is always seeking product enhancements that can further improve the service offered to customers.

The team identified that the new high recovery uniSTOR cylinders from Vaillant, with a choice of internal or external expansion, a new design, a full range of slimline sizes, and easy to install pre-plumbed and unplumbed models for boiler and heat pump systems, would be an excellent addition to support their service offering.

In a recent residential heating upgrade project, the uniSTOR plus 175 litre pre-plumbed cylinder was installed.

Talking about the project Jay said: "Every project is different, and you have to be flexible about the best solution. We were approached for a retrofit job at a 1980s four-bedroom timber framed property in Hexham that has a very limited aiuring cupboard, which housed a small, vented cylinder.

"Part of the overall solution, which replaced an inefficient legacy electric based heating system, included the specification of an aroTHERM plus air source heat pump and a wet radiator system in all parts of the large house. It also included a full suite of accompanying heating controls to give oversight to the owners, as well as remote access for us to monitor the system as required."

Jay explained that when it came to the accompanying hot water cylinder which would complement the entire install, he was delighted to be able to call upon the design, installation, and performance benefits of the new uniSTOR plus 175 litre pre-plumbed cylinder as it helped overcome many of the traditional challenges installers face.

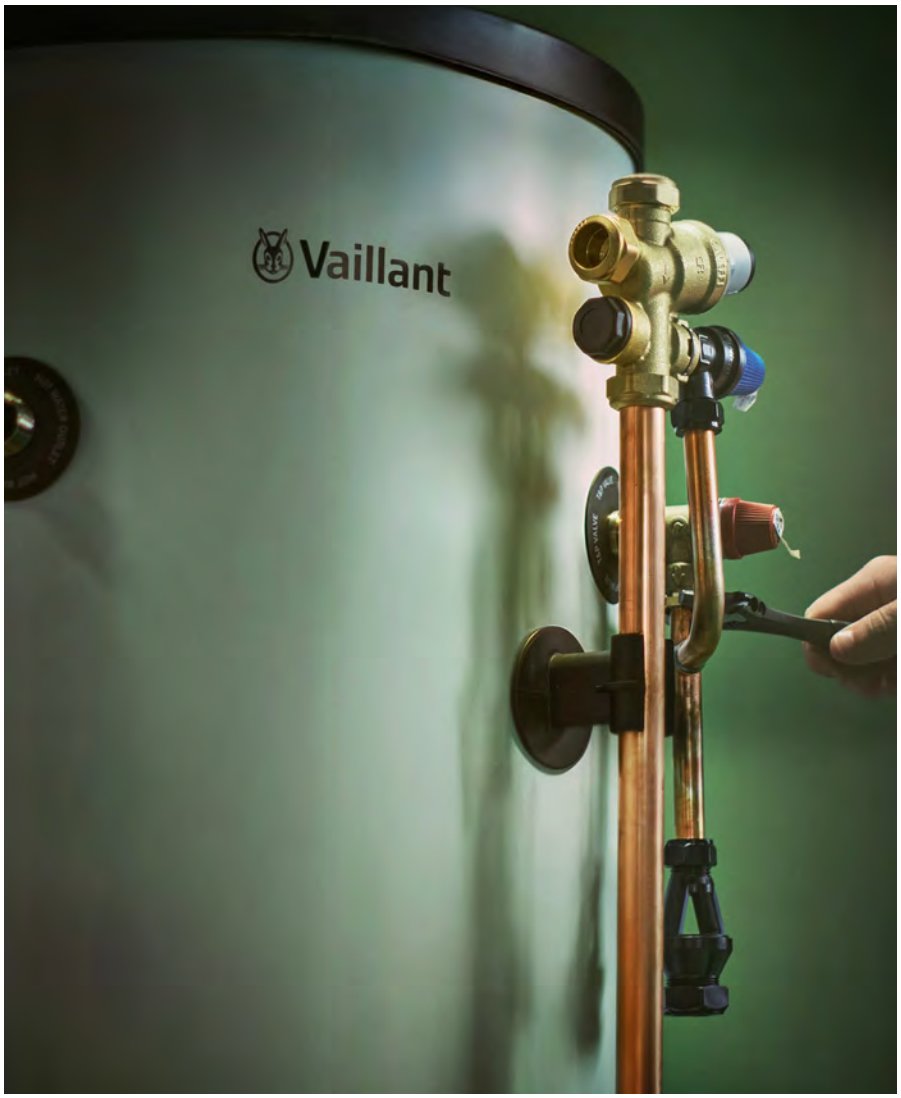
Installation solutions

Jay continued to explain that often the number one issue is the space limitations which they encounter in people's homes.

He said: "It can be a challenge to site the hot water cylinder in the available space and can complicate the installation process. Projects will often require higher cylinder capacities to suit hot water demands for the household, but space constraints can compromise what we can do.

"The important thing we have found with the cylinder option is that its slimline dimensions mean we can suitably fit it into smaller spaces whilst offering increased water capacity levels. Also, the design has clearly labelled connections at the front of the cylinder. This is a great bonus, especially on the pre-plumbed model, which helps us to speed up installation times.

"The new cylinder affords the option to be fitted with a boiler today, and then when the homeowner is ready to upgrade to a heat pump system, the buffer can be installed at either the top or bottom of the cylinder, or even somewhere else depending on location. This is immensely helpful to the install team. It means we can work with a variety of scenarios knowing that we have fitting alternatives to combat the mentioned common space barriers. This innovating development will be of 100% benefit on our future install projects."



Heating costs cut and the trade supported

Jay explained that as the heating sector continues to welcome new installers, he also believes that features such as the clear labelling used on the product will be highly beneficial.

He said: "We have apprentices working on installs alongside experienced staff. As apprentices build their confidence, being able to work with easy to understand and accessible connections, as well as accompanying instructions, definitely helps. It is also of great assistance for those who have been in the industry for a while, ensuring they get the job done right first time, every time."

Jay continued to explain that now fully installed, the combined air source heat pump, hot water cylinder and controls package, alongside other renewable technologies, is making a real difference for the ccustomer. Heating running costs on the inefficient legacy system of around £10,000 per annum have been drastically cut to about £1,500, driven by system efficiencies which are now delivering much higher levels of heat into the home for the amount of electricity consumed.

Info
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How a new type of heat pump is helping Hepworth Brewery cut energy and emissions

Tom Taylor, CEO at Futraheat, tells us about a successful project where a heat pump has been developed, to deliver low-carbon heat to a beer brewing process.

A heat pump project at a Sussex brewery is helping it to radically reduce energy use and costs – promising to slash bills for wort boiling by more than 65 percent.

Last year the family-owned Hepworth Brewery became the first in the UK to trial a new type of heat pump, developed by Futraheat, to deliver low-carbon heat to the brewing process.

Heat, delivered through high temperature steam, is a vital component of brewing, and many other industrial processes, and is usually delivered by boilers running on gas or fuel oil.

Unlike most heat pumps, which deliver hot water up to around 80°C, the Futraheat Greensteam 300kW heat pump can produce steam up to 130°C.

At Hepworth, the new system recovers waste heat at 100°C, previously vented to atmosphere, and upgrades it to process steam between 120°C and 130°C. This steam is then resupplied to the brewing kettle, displacing the need for the fossil-fuel derived heat.

Now, with months of operations under its belt, the heat pump has shown its potential to radically reduce the brewer's reliance on a CO2-emitting oil boiler and allow it to switch much of its heat requirement for wort boiling to the electrically powered heat pump.

Figures now published by The Carbon Trust and the Department for Energy Security & Net Zero – which part-funded the initiative – show the project has demonstrated:

- an 85.8 percent energy saving for the wort boiling process in the kettle compared to the existing fuel-oil boiler;
- a 91.2 percent reduction in CO2 equivalent;
- a 65.3 percent energy cost reduction;
- consistent steam output at 125°C, matching brewing specifications, with a high Coefficient of Performance (CoP ~ 6).

The project enabled the Greensteam heat pump to move from technology readiness level TRL 5 to TRL 9, with over 70 hours of operation at kettle boiling conditions, equivalent to 35 brews and around 500,000 pints of beer production.

Futraheat is now looking with the brewery at how Greensteam 330 heat pump could be integrated site-wide to maximise the offset of the fossil fuel generated heat used at the brewery.

The project is one of a number of initiatives being adopted by the brewer as part of its commitment to sustainability. Other measures include solar panels, a reed bed and a waste system which converts organic matter in wastewater into biomethane.

Futraheat CEO Tom Taylor says: "Heat is a major component of a huge range of industrial processes, from pharmaceuticals to food and drink, and vast amounts of this is delivered by steam.

"Until recently, heat pumps have been both unaffordable and unable to deliver heat at the temperature that industry requires. This project demonstrates the technology can now be implemented within a brewery.

"We're confident it can then be rolled out across a range of industries, in the UK and worldwide."

The project has been delivered in partnership with Hepworth Brewery and the Department for Energy Strategy and Net Zero's Industrial Energy Efficiency Accelerator (IEEA) programme, managed by the Carbon Trust.

Futraheat secured £2million investment in 2023 from backers including the Clean Growth Fund to develop and now plans to deploy their next-generation machine, which will incorporate two TurboClaw compressors to deliver heat up to 150 degrees.

www.futraheat.com
www.hepworthbrewery.co.uk

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A key objective since **Hydratech's** formation in 1998, has been the establishment of technical partnerships with industry leading renewable energy consultants, contractors, and installers. Working with those responsible for heat recovery system design, installation and operation, **Hydratech's** engineers, chemists and analysts implement a fully integrated approach to thermal fluid selection and management - which in turn, maximises performance, reduces operational costs and delivers significant return on investment.

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The **Hydratech Services** division provides specialist engineering and maintenance services to customers installing, commissioning, operating or optimising heat pump systems.
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On a roll! KNIPEX top tools, now available in sets

One size rarely fits all, which is why KNIPEX offers a range of tool rolls and bundled sets for some of its most trusted plumbing tools. Designed to keep popular pliers protected, organised and easy to access, the durable polyester rolls give tradespeople a practical way to carry the sizes they use most, without overloading the tool bag.

A popular choice is the KNIPEX Cobra® water pump pliers set (00 19 55 S9). Built for gripping pipes, fittings and nuts, Cobra® pliers are known for their strong self-locking action, allowing them to grip securely without slipping and with reduced effort from the user.

This three-piece set includes the compact 150mm Cobra®, ideal for tight spaces and hard-to-reach components, the versatile 250mm with its 25-fold fine adjustment and the larger 30 mm for pipes up to 70mm in diameter and nuts up to 60mm across flats. Together, they cover a wide range of applications while keeping everything neatly stored in one place.

Another long-standing favourite is the KNIPEX Pliers Wrench Set (00 19 55 S7). Replacing a whole set of imperial and metric spanners, the Pliers Wrench is designed for gentle gripping, holding, pressing and bending without damaging fittings. Smooth, parallel jaws allow work directly on plated surfaces, while fast push-button adjustment makes sizing quick and straightforward. This set includes three Pliers Wrenches in 150, 250 and 300mm sizes, covering a broad range of gripping widths for installation, maintenance and finishing tasks.

By offering both pre-selected sets and empty rolls, KNIPEX gives plumbers the freedom to choose how they carry some of their most trusted tools. Whether opting for a ready-made combination or assembling a personalised selection, the result is the same: popular tools, the right sizes and a practical way to keep them organised for everyday work.

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