

HEAT PUMPS TODAY

ESSENTIAL INFORMATION FOR INSTALLERS



**NATIONAL
ACR & HEAT PUMP
AWARDS
2024
21st MARCH**

The shortlist is out!

Go to page 10 to discover the contenders for the awards

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Welcome to the February/March issue of Heat Pumps Today.

Whilst Juliet enjoyed a well-deserved break in the sun, I seized the opportunity to sprinkle my editing magic on the publication – all in a day's work, alongside my usual role of creating and sharing uniquely engaging content for our website and social media pages.



The team looks forward to the flagship National ACR & Heat Pump Awards, being held on March 21st 2024 at the Midland Hotel, Manchester. The shortlist has been announced on page 10. Good luck on the night to all those listed and be sure to book your places, as this event always sells out!

On page 16, I was delighted to speak to the passionate Emma-Louise Bennett, an inspiring and successful female figure within the industry. She shared her thoughts on the heat pump sector.

In the second article of the series, I spoke to a panel expert at the REHAU Retrofit 23 event, Simon Eddleston, Construction Director at Switch2 Energy. Simon discusses retrofitting homes, particularly district and communal heating technologies, and the benefits to end-users as a result of their retrofit work. Read more on page 26.

If you have anything you'd like to contribute to forthcoming issues, feel free to get in touch by emailing: Julietl@warnersgroup.co.uk

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Daikin acquires UK service company Robert Heath Heating

Daikin UK has acquired Robert Heath Heating Ltd, a heating service company. In a deal signed today, the acquisition will serve to strengthen Daikin's residential heating service network in the UK. The move aligns with Daikin's strategy to play a leading role in the UK's transition towards low-carbon heating and consolidates its position in the renewable heating market.

Air source heat pumps are expected to play a crucial role in helping the UK Government reach its decarbonisation goals. As the installation of heat pumps increases, Daikin has plans to expand its service and maintenance capabilities accordingly. By acquiring Robert Heath Heating, Daikin UK will be able to enhance its maintenance services for residential customers across the UK.

Robert Heath Heating is a gas servicing business and has around 450 people currently work for them. The acquisition will significantly increase Daikin's ability to service and maintain its range of heat pumps, providing an additional resource of qualified heating service engineers. This will ensure that it can meet the servicing and maintenance requirements of its domestic heating customers now and in the future.

The move builds on Daikin's Sustainable Home Centre network, launched four years ago to lead the UK's sustainable home heating movement. The centres provide opportunities for homeowners to explore heat pump technology, and offer a hub where installers can access free local training and resources to help them diversify into renewable heating solutions. The Sustainable Home Centres will now be able to draw on the significant resources of Robert Heath Heating's engineers to deliver servicing and maintenance services.

Robert Heath Heating's engineers will complement Daikin's existing network of service partners, ensuring Daikin meets the increasing demand for qualified heating service engineers across the UK.

www.daikin.com



Energy centre

Baxi to showcase heat network solutions at Futurebuild

Baxi is set to unveil its district heating and thermal solutions portfolio that will help support the anticipated growth of UK heat networks at Futurebuild 2024.

The exhibition, which takes place from 5-7 March at ExCeL London, is one of the built environment sector's biggest events. The exhibition aims to highlight the advancements in technologies and applications that can drive improved sustainability and heat decarbonisation.

With no one-size-fits-all solution to decarbonising homes and buildings, heat networks have been identified as an essential part of the UK's pathway towards its 2050 net zero commitment. On Stand K19, in Futurebuild's Heat Network Zone, Baxi will showcase its thermal substations that can be provided along with pre-engineered low carbon packaged energy centres by its specialist prefabrication business, Baxi Packaged Solutions. Visitors to the stand will have the opportunity to discuss the full breadth of Baxi heating and hot water solutions that can be tailored to meet customer requirements to support the transition to low carbon heat.

Stephen Hart, Baxi's Sales Director – Integrated Thermal Solutions, will also take part in Futurebuild's panel discussion on Innovations in the District Energy Sector for 2024 on Wednesday 6th March.

Stephen said: "Futurebuild is a huge event within the building services calendar. It's a fantastic chance for industry experts to discuss the latest innovations and advances as well as explore ways of partnering with companies like Baxi to accelerate the growth of heat networks. We look forward to lively discussions on the best ways of driving the energy transition and making heat decarbonisation a reality.

See you on Stand K19!"

To register to attend, visit: www.futurebuild.co.uk

Sunderland Council reduces carbon emissions with new Hamworthy heat pump system installation



Tyneham heat pump system

When Sunderland Council needed a heating system that would help to reduce carbon emissions at its offices in Stansfield Business Centre, a new Tyneham heat pump system, set up in a hybrid installation from Hamworthy Heating – a trusted British manufacturer and supplier of commercial heating and hot water products – provided an efficient and sustainable solution.

As the existing gas boilers at Stansfield Business Centre were operating at elevated temperatures and the heating system was designed to operate with high-grade heat at peak loads, Sunderland Council decided that a hybrid system (with an air source heat pump being the lead source of heating with a gas boiler providing a top up) was required, when its existing system reached end of life.

To accurately meet the heating demands of the building, the new Hamworthy Heating system at Sunderland Business Centre consists of a 32kW Tyneham air source monobloc heat pump which is connected to a 500L buffer cylinder. Tyneham heat pumps feature a co-efficiency of performance (COP) rating of up to 4.85, to provide efficient, low carbon heating.

Serving as the primary heat source within the new hybrid set up, the Tyneham heat pump efficiently increases the heat up to 55° to a buffer tank. As and when additional temperature is required, the system, which also includes a Stratton mk3 condensing wall-hung boiler as a secondary heat source, will switch over to the boiler to meet the required load. In addition to providing year-round reliability (as the boiler supports the heat pump), this also ensures that the building is supplied with the most energy-efficient system, at any given time. The Stratton mk3 features a 5:1 turndown ratio, excellent low-class 6 NOx emission across all models, and up to 97% gross seasonal efficiency.

Controlled by a BMS system, which can be accessed on site or remotely, Sunderland Council is now able to manage the system and monitor set points, as and when required conveniently and simply.

“Sunderland Council is committed to playing its part in tackling the global climate change emergency and is taking steps to reduce its carbon emissions from operational activities so as to be carbon neutral by 2030. As part of this commitment, Sunderland Council saw this heat pump system, set up in a hybrid installation as an excellent opportunity to both help reduce carbon emissions and save on energy”, explains Alan Cowgill, Mechanical Building Services Engineer, Sunderland Council.

Installed by one of Hamworthy’s approved installers, Compac Services N.E Ltd, Stansfield Business Centre now benefits from a reliable and energy-efficient system that is helping Sunderland Council to continue to further reduce its carbon impact.

www.hamworthy-heating.com

Vaillant announces new partnership with OVO offering lower heat pump running costs to thousands of UK homeowners

Vaillant and OVO have launched a new, first of its kind partnership to reduce heat pump running costs to just 15p per kWh to homes across the UK.

Homeowners with a Vaillant aroTHERM or aroTHERM plus heat pump and an internet gateway such as the myVAILLANT connect, will now be able to access OVO’s new deal, Heat Pump Plus. This new type of use add-on will make heat pumps cheaper to run on average by £495 per year. With the UK Government target set to install 600,000 heat pumps per year by 2028, the new add-on is designed to support existing heat pump homes with their ongoing running costs and aims to encourage more households to transition from a gas boiler to a heat pump.

How it works: Homeowners will have two separate rates – one for their heat pump, and one for the rest of their household energy usage – benefitting those households for making the switch to low carbon heating technology.

From Vaillant’s own research into the installer appetite for upskilling to install heat pumps¹, it found that over 70% of installers considered heat pumps to be too expensive for consumers. Combined with further research, more than half of the UK (52%) would want to replace their gas boiler if they could afford to do so, and three quarters (75%) say they would make the switch with a roughly 50% reduction in running costs. Today’s announcement tackles this cost barrier when it comes to running costs. And, when combined with the £7,500 Boiler Upgrade Scheme grant from the Government to help towards installation, thousands more households would be able to benefit from a cleaner and more efficient heating system.

Overall, the interest in low carbon technology is growing. 1 in 4 (26%) people in the UK want to install a heat pump more now than they did one year ago, with almost a third (32%) stating it’s because operating costs are going down, while almost half the country (45%) think Government support makes it more appealing.

By partnering, both Vaillant and OVO are committing to move the dial on the electrification and decarbonisation of heat across the UK.

To read more about the partnership visit:

<http://tinyurl.com/cbuy2w42>

www.vaillant.co.uk



Source:

1. www.professional.vaillant.co.uk/for-installers/business-support/industry-drivers-and-legislation/installer-survey





About Blygold

Blygold is an innovative and forward-thinking company offering unique and sustainable high-quality protection against corrosion. With over 40 years of experience, we have the know-how and state-of-the-art products and techniques to solve any corrosion problem.

What Are Heat Pumps?

Heat pumps are systems that move heat from one place to another by using a compressor and circulating a structure of liquid or gas refrigerant. Through this, the heat is extracted from outside sources and then pumped indoors. Pumping the heat tends to use a lot less electrical energy than typical methods of turning electricity into heat. Plus, during the summer months, the cycle can be reversed and the unit will act as an air conditioner instead, making it multi-functional.

The use of this particular energy source has been a lot slower in the UK than the rest of Europe. This is due to the fact that the government only recently introduced new schemes to make switching to green energy both easier and a lot more affordable. These moves have helped to increase the popularity of all renewable energy technology among the British public, and so it is starting to take off.

Heat pumps are actually the most efficient alternative to fuel, oil, and electrical systems when it comes to the process of heating and cooling. They supply a larger capacity of heating and cooling than the amount of electrical energy that is used to run it. In fact, the efficiency rate is able to go up to as high as 300%.

Advantages of Heat Pumps

- Heat pumps are much safer than systems that are based on combustion.
- They are cheaper to run than oil and gas boilers.
- The system reduces your carbon emissions & it has an efficient conversation rate of energy to heat.

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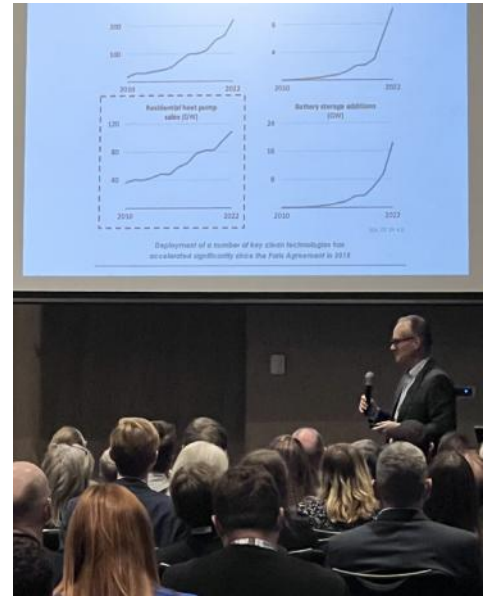
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Ground Source Heat Pump Association (GSHPA)

Energising the future: The Ground Source in Focus Day 2024 unveiled



Poised to redefine the renewable energy landscape, the Ground Source Heat Pump Association (GSHPA) proudly announces the Ground Source in Focus Day 2024.

Scheduled for 18 April, at the esteemed Motorcycle Museum in Birmingham, this event is a clarion call to industry professionals, enthusiasts, and the public to explore the vast potential of ground source energy solutions. Diverging from the traditional Member's Day format, the Ground Source in Focus Day is an expansive platform designed to foster an inclusive environment for sharing knowledge, discussing innovations, and uncovering the intricacies of ground source energy through the lens of Why? Where? How? and When?

Pioneers of ground source innovation

Before diving into the event details, it's essential to understand the driving force behind this initiative: GSHPA. The GSHPA serves as the beacon of excellence and advocacy for the ground source heat pump sector within the UK. With a steadfast commitment to promoting the sustainable and efficient use of ground source heat pumps, the association works tirelessly to influence policy, ensure quality standards,

and increase public awareness about the benefits of ground source heating and cooling systems. Through education, research, and collaboration, the GSHPA aims to accelerate the adoption of ground source technology, contributing to the UK's renewable energy goals and the global fight against climate change.

A day of discovery and networking

Embark on a journey of discovery at the Ground Source in Focus Day, starting with an engaging breakfast and networking session. This event is meticulously crafted to facilitate a collaborative atmosphere where attendees can connect, share insights, and explore the future of the industry, including critical discussions on retrofit solutions and advancements in drilling and installation standards. Supported by the Microgeneration Certification Scheme (MCS)¹, the event underscores a collective commitment to driving the ground source sector forward.

Exclusive opportunities and engaging sessions

This is more than just a conference; it's a marketplace of ideas, featuring exclusive

exhibitor stands and outdoor areas for trailers, aimed at showcasing cutting-edge solutions and fostering partnerships. The day's agenda is packed with informative sessions addressing all aspects of ground source energy, from regulatory updates and technical advancements to practical applications and case studies. Our 'Ground Table' workshops introduce a novel approach to learning and discussion, enabling attendees to delve into specific topics in an interactive, fluid format.

Deep dive into ground source energy

As we look forward to the day, let's delve into the significance of ground source heat pump technology. This renewable energy solution harnesses the stable temperatures of the earth to provide heating and cooling for buildings, offering a sustainable alternative to traditional fossil fuels. The efficiency and environmental benefits of ground source systems are undeniable, promising significant reductions in carbon emissions and energy costs. However, the adoption of this technology faces challenges, including upfront costs, public awareness, and the need for skilled installers. ▶



Laura Bishop, Chair of the GSHPA

"The Ground Source in Focus Day is not just an event; it's a nexus for transformation within the renewable energy sector," **Laura Bishop**, Chair of the GSHPA, explains.

"Our mission is clear: to confront the challenges of ground source heat pump technology head-on. We are uniting the industry's most brilliant minds to ignite conversations, forge best practices, and reveal groundbreaking innovations. This day is designed as a crucible for open dialogue and cooperation, a place where we can collectively lift the veil on ground source technology. We're here to showcase its significant advantages and chart a course towards its broad-scale adoption. It's a pivotal step towards a future where sustainable energy is not just a choice, but a natural decision."

An open invitation to shape the future

We extend an open invitation to all stakeholders in the renewable energy sector, from seasoned experts to curious newcomers, to join us at the Ground Source in Focus Day 2024.

This event represents a pivotal moment in our collective journey towards a more sustainable and resilient energy future. By participating, you'll gain invaluable insights into the ground source industry, network with peers, and contribute to shaping the future of renewable energy.

Don't miss this opportunity to be part of a landmark event dedicated to advancing ground source heat pump technology. Secure your ticket today, and let's work together to drive innovation, sustainability, and growth in the renewable energy sector.

Together, we can harness the power of the earth to energise our future. 🌍

EVENT HIGHLIGHTS AND SPECIAL OFFERS

Date: 18 April 2024

Venue: The Motorcycle Museum, Birmingham.

Start time: 9.30 am

Innovative Sessions include:

- A Dive into the "Future of the Industry" panel discussion. Explore the latest trends, including retrofitting, followed by an interactive Q&A session.
- Update yourself with PDC & Standards, including insights into drilling audits. Engage with our panel of experts in a lively Q&A.
- Focus on Education & Training. Discover the nuances of the MCS Apprenticeship through an informative Q&A session.
- Delve into Commercial Water to Water Heat Pumps. Learn about innovative uses, such as mine workings, in another engaging Q&A.
- Participate in Informal 'Ground Table' Workshops. These specialist zones offer a platform to ask questions and discuss various topics of interest. Volunteers and experts will facilitate these discussions. Topics include Ground Source System Design, Drilling & Groundworks, Education Opportunities, Electrification of Heat, and more!

Additional highlights:

- **Expert Panelists:** Gain insights from a diverse group of industry leaders and innovators.
- **Interactive Workshops:** Engage in discussions on a range of topics, from thermal transfer fluids to heat pump installations.
- **Networking Opportunities:** Connect with professionals and enthusiasts in the sustainable energy sector.

Registration: Open on Eventbrite, with special discounts for GSHPA members ACR & Heat Pumps Today Readers (HPT2024) and MCS registered installers.

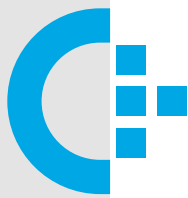


For more information and to register your interest, please visit: <http://tinyurl.com/mrxnyu6>, click on the QR code or contact the GSHPA directly info@gshpa.org.uk

www.gshp.org.uk



Source: 1. www.mcscertified.com



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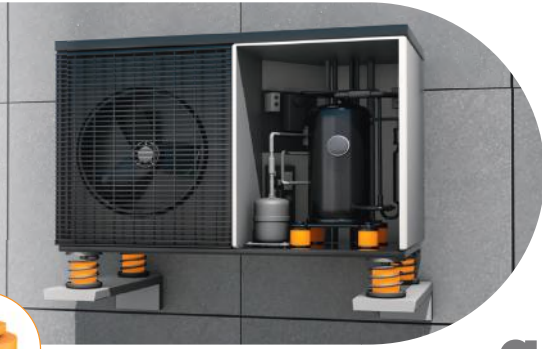
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FINALISTS 2024

The much-anticipated National Air Conditioning, Refrigeration & Heat Pump Awards 2024 will be held at The Midland, Manchester on March 21st, giving the industry a welcome opportunity to recognise outstanding people, projects and products.

CONGRATULATIONS TO:

ACR CONTRACTOR OF THE YEAR

- The RACA Group
- SURE Solutions
- Cross Group Ltd

AIR CONDITIONING PRODUCT

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- Hitachi Cooling and Heating
Hitachi Air365 Max VRF
- Carrier
Carrier IdroFan® 36XH Hybrid Hydronic Terminal
- Toshiba Air Conditioning
DAISEIKAI 10 by Toshiba Air Conditioning

REFRIGERATION PRODUCT

- BITZER UK
AMChill Ultra-low Charge Ammonia Chiller
- Testo Ltd

AIR CONDITIONING PROJECT

- CIAT
Seagreen offshore wind farm project
- Personal Refrigeration Ltd
Rice Cook Ventilation & Cooling Project
- Organic Heat Exchangers Ltd
Cool Net Zero Project
- Personal Refrigeration Ltd
Air Handlers Northern. London Vet Specialists Project.
- Panasonic Heating and Cooling
Riverdale Healthcare

REFRIGERATION PROJECT

- BITZER UK / Chillflow Solutions Ltd
Bespoke R-449A Refrigeration System for 65m Ice Breaker
- BITZER UK and G&O Refrigeration Ltd
Lee Valley Ice Centre
- Personal Refrigeration Ltd
Harlech Foodservice Ltd
Freezer Upgrade & Replacement Project
- Panasonic Heating and Cooling
Keep it Cool and Hawco Ltd
- WAVE Refrigeration
Bidfood Glasgow Depot
- Sure Solutions
Little Moons
NEW MOON PROJECT
- Beijer Ref UK & Miramar Engineering
JJ Food Services installed by Miramar Engineering supported by FridgeHUB
- Cross Refrigeration (NI) Ltd
IPL Sittinbourne

TRAINING PROVIDER

- Ideal Heating
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- Meridian RACHP Training
Meridian RACHP Training
- Grant Engineering (UK) Ltd
Grant UK Training Academy
- Heat Geek
- South Hampshire College Group
Eastleigh College Heat Pump Training Provision
- McFarlane Telfer Ltd
MCFT

WHOLESALE/DISTRIBUTOR

- Smith Brothers Stores Ltd
- Cool Designs Ltd
- Nuenta

HEAT PUMP INSTALLER

- R A Brown Heating Services Ltd
- Castle Climate Control Ltd
- RPS Group (Rothwell Plumbing Services)
- Oxon Energy Ltd

HEAT PUMP PRODUCT DOMESTIC

- Ebac Ltd
- Ecoforest
ecoGEO+ PRO
- Ideal Heating
Logic Air
- Panasonic Heating and Cooling
Panasonic Aquarea R290 L Series Air-to-water Heat Pump
- Mitsubishi Electric
Mitsubishi Electric Ecodan R290
- Clivet Group UK
Edge EVO 2.0
- Nuenta Ltd
ecoAIR+ EVI 4-20kW
- Nuenta Ltd
ecoGEO PRO 1-6kW
- Warmflow
Warmflow Zeno air source heat pump
- Viessmann
Viessmann Vitocal 150 / 151-A
Air Source Heat Pump
- Strom Limited
Strom Vertex HP

THANK YOU TO



THE NATIONAL ACR & HEAT PUMPS AWARDS



HEAT PUMP PRODUCT COMMERCIAL

- **Solid Energy**
Solid Energy
Modular HC Heat Pumps
- **Carrier**
Carrier AquaForce® 61CA air-source heat pump
- **Clivet Group UK**
ELFOEnergy Storm EVO
- **Solid Energy**
DH Sub Station Heat Pump 200kW
5MW
- **Swegon**
BlueBoxOMICRON Zero

GROUND SOURCE PROJECT

- **Ecoforest**
Daly Renewables single house installation
- **R A Brown Heating Services Ltd**
Ground Source Heat Pump in The Old Rectory
- **Calibrate Energy Engineering**
2-phase 3 Megawatt Modified Capacity GSHP
in Scotland

DOMESTIC AIR SOURCE PROJECT

- **R A Brown Heating Services Ltd**
New Build Family Home in Norfolk
- **Panasonic Heating and Cooling**
Panasonic Delivers sustainable Warmth to EPC
A-rated Home, Wakeman heating & renewable
and Dovecote homes
- **Ability Energy UK**
ASHP Development in Scottish Borders
- **Viessmann**
EPC Improvements & Viessmann

- **Viessmann**
Blakemore Plumbing & Heating and Viessmann
- **Viessmann**
Heat Different and Viessmann
- **Batchelor Air Conditioning & Refrigeration Ltd**
Batchelor makes a splash with multi zone
pool project

NON - DOMESTIC AIR SOURCE PROJECT

- **Carrier**
Glasgow Bank Estate
- **The Bruce Boucher Consultancy**
Weleda World Leader in Natural Cosmetics
and cures
- **RPS Group**
Decarbonisation of Wallesy Hub
- **ICG HEAT PUMPS**
Kirkby Leisure Centre
- **Mitsubishi Electric**
Decarbonising hot water in The Gym Group's
Leyland site
- **Calibrate Energy Engineering**
Water Research Centre Phase 1 Energy
Transformation Project

ANCILLARY PRODUCT OF THE YEAR

- **Discrete Heat**
ThermaSkirt
- **Discrete Heat**
ThermAssured
- **Grant Engineering (UK) Ltd**
Grant EvoLink Hybrid System Hub
- **Grant Engineering (UK) Ltd**
Grant Aeron Smart Controller

- **SAMON**
GLACIÄR MIDI Refrigerant Gas Detector
- **WAVE Refrigeration**
Theoretical Performance Calculator

BEST IAQ INNOVATION

- **Martin Industries Ltd**
AirX Pro
- **CIAT**
CIAT EPURE® Filter

RACHP WOMAN OF THE YEAR

- Publishers vote

PHIL CREANEY'S ACR CHAMPION

- Publishers vote

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Heat Pump Association proposes a Domestic Heat Pump Tariff Discount

The Heat Pump Association (HPA) has published its latest research on options for overcoming the distortive impact of Environmental and Social Obligations on the domestic heating market.



This report and extensive background analysis sets out the implications of a range of options to tackle one of the key challenges in the acceleration of heat pumps for domestic heating, running costs.

As the UK Government ambitiously pursues decarbonisation through increased heat pump adoption, the HPA's report sheds light on a critical factor impacting the market, the high electricity prices in Great Britain, relative to gas, which is distorting the domestic heating market. Great Britain (GB) has one of the highest electricity to gas price ratios (3.97) in all of Europe, nearly double that of the EHPA recommended ratio of 2. A significant contributor to high electricity prices is the disproportionate application in Great Britain of Environmental and

Social Obligations – often referred to by Government as “policy costs” and known commonly as “levies”. Domestic electricity consumers, bear around 85% of these levies, which means a typical heat pump consumer pays £170 more than an equivalent gas boiler consumer in levy costs per annum.

Government commitments

The Government has committed to outlining a clear approach to gas vs. electricity price ‘rebalancing’ by the end of 2023/4 and agreed with the Skidmore Review recommendation that significant progress affecting relative prices should be made by the end of 2024. In response to this challenge, the HPA calls on the Government to introduce a temporary

Domestic Heat Pump Tariff Discount to counteract the distortion in the domestic heating market caused by levies on electricity bills, which acts contrary to their wider decarbonisation goals.

The discount will reduce the price of electricity used for domestic heating or hot water produced by hydronic heat pumps to an amount equivalent to exempting that proportion of electricity from levies. Starting at 5p/kWh in 2024/25- 2025-26 and rising to 6p/kWh in real terms in 2026/27, the discount is estimated to require a maximum of £533m of discounted costs over three years. The HPA propose that this should be introduced quickly as an interim measure to bridge the gap between today's situation, and the time when wider electricity market reform is completed.

Commenting on the release, HPA CEO, Charlotte Lee said: "Our research provides a roadmap to address the current distortion in the domestic heating market, which is undoubtedly hindering heat pump deployment. Reducing the price and electricity relative to gas is the sector's number one policy ask. Action must be taken to change the energy price signals so that the lowest carbon heat is the lowest cost heat, which in turn will accelerate the deployment of heat pumps, and support the government's decarbonisation goals."

Additionally, Craig Dolan, HPA Chair noted: "The proposed Domestic Heat Pump Tariff Discount strategically bridges the gap between the current situation and the more complex, wider electricity market reform arrangements which whilst necessary will take considerable time. The introduction of a Heat Pump Tariff Discount will make heat pumps a more compelling financial proposition to consumers, and will drive a significant shift towards a greener

and more efficient heating landscape."


Jozefien Vanbecelaere, head of EU affairs at the European Heat Pump Association said: "Every consumer wants bang for their buck, and to get it on a heat pump the price of electricity should be no more than twice the price of gas. Reducing taxes and levies on the electricity bill and supporting consumers in the switch to electrification is long overdue. Governments across Europe need to act today so households and businesses can move to clean and sustainable heating at a wallet-friendly cost."

James Dyson, Senior Researcher at E3G said: "Reducing heat pump running costs is crucial to make clean heat affordable, desirable, and accessible for all UK households. A targeted exemption on levies for clean heating does just this, making heat pumps as affordable to run as a gas boiler. It also has a relatively low-price tag for the government, meaning this approach represents great value to accelerate the transition to net zero."

To read the report in full visit:

www.heatpumps.org.uk/resources/industry-reports

It establishes a framework to tackle the unequal cost of running heat pumps in Great Britain. The discount will reduce the price of electricity used for domestic heating or hot water produced by hydronic heat pumps to an amount equivalent to exempting that proportion of electricity from levies. Starting at 5p/kWh in 2024/25-2025-26 and rising to 6p/kWh in real terms in 2026/27.

The Domestic Heat Pump Tariff Discount advocates for the elimination of levies where heat pump technology is installed. This move would render heat pumps more cost-effective to operate than gas boilers. 



Info
www.heatpumps.org.uk

HPA
HEAT PUMP ASSOCIATION



www.acrjournal.uk/heat-pumps

Time to unlock the potential in heat networks

Collaborative industry-wide training will help to extend the deployment and improve the quality of heat networks across the UK, according to the Building Engineering Services Association (BESA).

The Association has received government funding to develop heat network engineering courses in partnership with the Manufacturers of Equipment for Heat Networks Association (MEHNA) and the Thermal Insulation Contractor's Association (TICA).

The courses, which are now being delivered through BESA's Training Academy¹, are being made available at a key moment for the heat network industry. The Energy Act 2023 and the proposed Future Homes and Buildings Standards are expected to lead to a major expansion in the use of this technology.

New homes and commercial buildings will be able to comply with the Standards, which are due to come into force next year, if they are connected to heat networks that use low carbon technologies or reclaimed waste heat.

Just 2% of the country's heat is currently distributed by networks, also known as district heating or district energy systems, but the government aims to grow that to 18% by 2050 in line with its net zero commitments. BESA also believes that networks could reduce heating costs – in some cases by more than 30% – by recycling waste heat from factories, power stations and even the London Underground as well as CHP and biomass schemes.

Performance

However, some of the 14,000 systems already installed in the UK have suffered from technical issues and disappointing performance prompting the Department for Energy Security and Net Zero (DESNZ) to look for ways to raise design and installation standards.

This includes providing funding for the new training courses which allows BESA to offer 800 fully funded places on the introductory course, which is aimed at built environment professionals interested in growing their low carbon skills, and

a further 100 on the installer course designed to upskill existing building services engineers.

The course content is aligned with the CIBSE code of practice (CP1) for heat networks and the sector's developing technical standards. The programme includes a one-hour introductory foundation course and an installation and maintenance course comprising nine modules. The latter concludes with a practical session delivered by manufacturers Worcester Bosch and Baxi at one of four training centres in Dartford, Wakefield, Warrington and Worcester.



Helen Yeulet, Director of Training and Skills at BESA

There are also plans for a quality assurance framework to improve reliability and guarantee levels of performance – all of which will increase demand for a larger workforce of well-trained heat network engineers.

“This is a great opportunity for anyone considering diversifying into heat networks,” said BESA's director of training and skills **Helen Yeulet**. “This technology will play an increasingly important role in

the transition to net zero, so it is vital that the country has enough trained installers who can help networks meet their full energy and cost-saving potential.”

Members of the three trade bodies who developed the course have already had early access to the training, but it is now being made available to the wider industry. And, ultimately, the organisations intend for the installer course to kickstart the development of a formal heat network qualification that will underpin future statutory regulation of the industry.

BESA has also recently updated and expanded its test regime for the Heat Interface Units (HIUs) which are used to distribute heat from networks to individual homes and commercial buildings.

Designed with consumer protection in mind and to ensure the market meets the needs of those developing and designing heat networks, the regime now offers improved information to specifiers to help deliver a better experience for end users.

The test regime is a voluntary process that gives manufacturers an independent method for testing, assessing, and comparing the performance of products. It has already been successful in improving HIU performance across the sector by allowing specifiers to make more informed decisions about which HIUs to select.

HIUs extract heat from district heating networks to feed individual buildings and dwellings and the way they perform is central to the overall efficiency of the system. The BESA Standard originally emerged from an efficiency research project supported by the UK government to try and improve the performance of a technology seen as central to the decarbonisation of the country's heating.

It has subsequently been developed and updated by the BESA HIU Steering Group, which is made up of representatives from all sides of the testing process. It engages with stakeholders right across

the sector from developers, specifiers, and purchasers, through to manufacturers, installers/suppliers and ultimately, the customer.

Expanded

This third edition of the HIU standard² now takes a modular approach that allows for the testing of additional types of HIU including space heating only models. It also introduces a DHW load test and an updated method for calculating annual volume weighted return temperature (VWART).

It covers seven different types of HIU and has pass/fail thresholds leading to registration of a successful test. The new modular nature of the tests is designed to minimise the amount of re-testing but maximises the information provided to specifiers.

Testing to the standard allows the performance of different HIUs to be evaluated in typical UK operating conditions and provides evidence of compliance with other performance and reliability metrics, such as domestic hot water response times.

“The original test standard has already had a significant positive impact on industry, but the new version represents a major step forward as it raises professional standards and takes account of the shift to low carbon technologies,” said BESA HIU Steering Group chair **Gareth Jones**.

“The introduction of the new test standard is particularly timely given the impending introduction of a Heat Network Technical Assurance Scheme as part of upcoming heat network regulations. The shift to including hard pass thresholds fits well with these new requirements and will provide greater assurance to the market.

“Another great thing about the Standard is that it demonstrates the positive impact that consumer-led initiatives can have on market development,” added Jones, who is also managing director of Fairheat.



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More than 50,000 HIUs are installed each year in the UK, and they are playing a growing part in the country's overall decarbonisation strategy. This makes setting performance standards increasingly important.

“Ultimately, it will be consumers who benefit from the improved performance of heat networks as manufacturers use the test outputs to carry out more research and refine their products, and specifiers are helped to make increasingly better-informed choices,” said Jones.

Source

1. www.thebesa.com/besa-academy
2. www.thebesa.com/hiu/test-registers
3. www.thebesa.com/heat-networks-foundation-course
4. www.thebesa.com/heat-networks-installation-maintenance-course

For more information or to register your interest for either the Heat Network Foundation Course³ or the Heat Network Installation and Maintenance Course⁴ visit the website and enter the code: BESAHN23 to secure a fully funded training place.

More information about BESA HIU Standard can be downloaded at: www.thebesa.com/hiu/downloads

Info
www.thebesa.com

WOMEN IN THE HEAT PUMP INDUSTRY

In an exclusive interview with Emma-Louise Bennett, Active Transition Support Lead at Viessmann Climate Solutions UK, she shares with us an insight into her fascinating journey so far in the heat pump industry.

When engaging in conversation with Emma, her passion and enthusiasm for her role at Viessmann, the heat pump industry, and her family are very evident. She explained that her experiences in both personal and professional aspects of her life have played a significant role in moulding her into the individual she is today.

Personal life

A mother of two with a love for yoga and horse riding which is only topped by being outside with her husband and children wearing wellies.

Professional life

The early days

Emma explained that her first experience of work was at the tender age of 16 as a waitress which in her opinion was a baptism of fire where she learned how to multi-task and prioritise her workload in a pressurised environment. Her first full-time job after finishing university was as a Runner for the Disney Channel at their studios in West London.

After some time as a mum and the birth of her second child Charlie, she was determined to get back into a professional environment and had a small social media marketing business.

Emma said: "I ran the business from home whilst my children were young as my husband worked full time as a self-employed joiner and carpenter.

"I then saw that Viessmann was recruiting for a part-time temporary position in their marketing department as a Lead Generation Executive.

"I decided to apply for the role and to my delight I was successful. I believe I secured



Emma-Louise Bennett, Active Transition Support Lead at Viessmann Climate Solutions UK

the interview and then the role as I had previous experience from a two-year stint in Ibiza where one of my responsibilities was lead generation for a website that was booking VIP tables!"

Role at Viessmann

Emma commented that thanks to the entrepreneurial environment and being lucky enough to have incredible mentors at Viessmann she developed both as an employee and individual and now manages the Viessmann Access MCS umbrella scheme. This includes making Boiler Upgrade Scheme (BUS) applications, managing umbrella scheme installations, and sending out MCS Handover Packs amongst many other MCS related activities!

Viessmann decided to offer the scheme to give their installers an opportunity to move into heat pumps without the commitment of becoming MCS accredited, which can be a barrier to sole traders due to the amount of admin required. MCS as an organisation has been incredibly supportive of the scheme and Viessmann works closely with them to ensure the service provided is compliant with the standards set out.



Emma-Louise with her two sons (L-R) Frankie and Charlie

She said: “I officially sit within the Pre-Sales department which is the specifications hub of Viessmann UK. From air source heat pumps to mechanical ventilation heat recovery and commercial projects, we supply engineers with the design and accompanying schematics. “My other responsibilities include supporting our sales team with onboarding new heat pump installers and suppliers into the business - my favourite part of the job is connecting with new installers who are as passionate about renewables as I am! I arrange their training, assist with project specifications, lead generation etc.

“This means that I am proudly involved in every level of Viessmann’s heat pump customer journey and transition into renewable energy”.

Tackling industry challenges:

Strategies for success

We asked Emma what she sees as the challenges facing the industry and she explained that what we are up against, is a lack of factual knowledge and regular misinformation in the news cycle about heat pumps, the labour force obtaining the required skillsets, the cost of installation and finally the UK housing stock.

Emma said: “I believe that heat pumps are still an unknown territory, this is despite Viessmann having manufactured them for the last 40 years and that the technology has been around for a much longer.

“It’s a learning journey for our installers, house builders and



(R-L) Toni Oakley-Tulk (Viessmann Academy trainer) and Emma-Louise attending the HIP Learner of the Year plumbing skills competition representing Viessmann as headline sponsor

homeowners alike and I am passionate about upskilling. This passion is why I completed the Heat Geek system design course¹ to further enhance my knowledge which I can then use and pass on to others. I would encourage anyone looking to venture into the heat pump industry to do the same. Even if you find yourself using an umbrella scheme to size your installations, you still need a basic understanding of pipe and radiator sizing. The Viessmann Academy² also provides heat pump courses that include an introduction to the technology for installers moving on from gas boilers”.

Source

1. www.courses.heatgeek.com

2. www.viessmann.co.uk/en/professionals/installers/viessmann-academy.html

Providing guidance

We concluded by asking Emma what advice she would offer other women who are considering coming into the heat pump industry.

Emma said: “Welcome to the UK’s most exciting industry during the most transformative period of its time. This means more opportunities and roles are available than ever before irrespective of an individual’s gender. Emma concluded by saying: “These roles can also be well paid, varied, offer a fantastic career and gratifying. I have thrived at Viessmann and it is the most fulfilling job I have ever had”.

Up to three-quarters of homes in study 'fitted with wrong size'

Around 70% of homes with heat pumps tested in a study were found to have had the wrong size installed, new research suggests. It means that the householders faced higher energy costs - or a colder home - as a result.



veritherm



The Department of Energy Security and Net Zero under the Heat Pump Ready Programme funded a joint study by three energy monitoring experts: Build Test Solutions, Veritherm and Elmhurst Energy. Their findings will fuel the argument of those who point to the success that other European nations have had with heat pump installation.

"The UK Government has set a target of 600,000 heat pumps installed by 2028 but without a more accurate approach to measurement, people will never trust the new green technology and that figure won't be achieved," says Richard Jack, technical director at Build Test Solutions.

"Heat pumps are really important for decarbonising heat and achieving net

zero but it is crucial that we maximise efficiencies. Before any heat pump is installed, specific heat loss measurement is needed to ensure the correct size for the property's requirements.

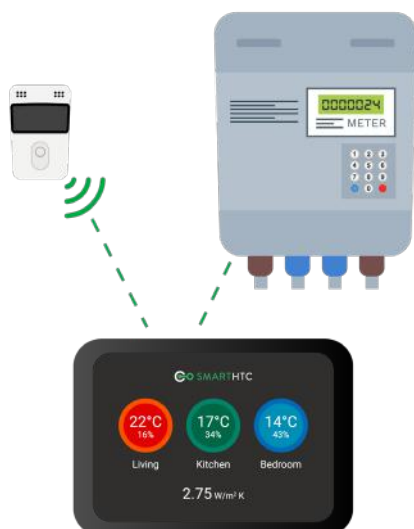
"The performance gap between the assumed and actual heat loss calculations will have significant implications for residents if we don't make changes, with the risk of higher costs and colder homes."

The measured and BS EN12831 calculated heat loss was compared for 56 homes, (measuring heat loss through BTS's SmartHTC system or a Veritherm overnight test) this included several types of dwelling, weighted towards detached and more recently built homes. The calculated heat loss only matched the measurement

to within its uncertainty margin for 30% of homes, this means as mentioned that for 70% of homes, a heat pump would be incorrectly sized using a BS EN12831 heat loss calculation which takes into account various factors such as the building's thermal characteristics, outdoor climate conditions, and internal heat gains.

Oversized heat pumps cost more to run

Measurement provides accurate heat loss assessments, bespoke to individual houses. Traditional heat loss calculations based on visual surveys are prone to inaccuracy resulting in incorrectly estimating the actual heat loss. This is because critical factors like airtightness and the presence





and continuity of insulation are hard if not impossible to identify.

The research found that the difference in heat loss between that calculated and the measured heat loss was a substantial 35 percent. There was a significant bias towards overestimating the heat loss; 59 percent of houses. An oversized heat pump incurs higher capital costs, of around 10 percent on average, alongside higher maintenance costs and lower running efficiency. With an undersized heat pump, the risk is that the home will not be warm enough during the coldest periods, driving the occupant to turn to more expensive heating methods, such as a fan or oil heater.

Resident feedback

The residents generally found the experience of having their home measured fairly easy. All respondents replied that they would recommend a performance measurement to a friend.

The majority indicated that they would pay between £250 and £500 for the measurement and reporting service. In roughly equal measures interestingly the results showed that their motivations for making energy efficiency improvements were related to cost and carbon, with these scoring higher than to improve comfort or add value to the property. Overwhelmingly, the results were viewed as very or extremely useful and more than 50% of people receiving the measurements went on to get a heat pump installed in the following 6 months, and more than 60% getting other energy efficiency improvements to the fabric of the house.

Making measurement mainstream Measuring the thermal performance of a home should form the first step in any consumer heat pump journey.

The field trial has demonstrated direct measurement of heat loss in buildings causes minimal disruption, helps installers to better manage risk in ensuring the right size heat pump is specified and is something that residents value given the potential capital cost and longer term operational performance savings on offer. The measurements also served to engage the resident, leading to a very high uptake rate of heat pump installation and fabric improvements.

MCS standards should be updated to recognise the role of measured heat loss as part of the heat pump design process for sizing and specifying the correct heat pump solution for a home.

The traditional desktop-based heat loss calculation method only delivered the correct sizing in 30% of cases with an average absolute difference between the predicted and measured heat loss of 34%. This presents significant cost, performance and industry reputation risks in relation to oversizing or undersizing.

Heat loss calculation software should allow for the input of heat loss measurements to calibrate their calculations and provide more accurate outputs.

Heat loss measurements provide a more accurate method to size the overall heat demand of a building, but there are clearly

many more steps in the heat pump design process that this does not address. There are several existing software packages which do a great job of more detailed design tasks like specifying the required emitters, pipework or hot water provision. This software should include a user input for heat loss measurements to calibrate their outputs, which would in turn feed down to detailed heat pump design work.

Measurement based heat loss assessments are a valuable additional service that installers should consider integrating into their service delivery model.

Build Test Solutions, Veritherm and Elmhurst Energy's study has clearly shown that residents see great value in heat loss measurements; helping to build trust and confidence and ensure the system they commit to is 'right first time'. A very simple analysis has shown that capital cost savings alone would cover the cost of the measurement in the majority of cases. Heat loss measurements could be conducted either by heat pump installers or dedicated businesses offering measurement services. It's important to recognise these assessments as valuable services for which people are willing to pay.

To read the report in full and find further resources from Build Test Solutions, Veritherm and Elmhurst Energy visit: www.measuredheatloss.com



Info
www.buildtestsolutions.com
www.veritherm.co.uk
www.elmhurstenergy.co.uk

The role of plumbing and heating in successful retrofit and renovation

By RWC's Richard Bateman, Product Marketing Manager for Plumbing and Heating

As the UK progresses on the road to net-zero, RWC's Richard Bateman explores the importance of retrofit and renovation – and why heating and plumbing installers have a leading role to play.

There are more than 30 million homes in the UK and, together, they are responsible for around a fifth of all the country's emissions, with the majority – around three quarters – generated by home heating. This makes the decarbonisation of homes key to overarching ambitions of achieving net-zero by 2050.

In practice, this places installers at the heart of activity to curb emissions and improve the efficiency of homes – both through the adoption of low-carbon systems and innovative plumbing and heating technologies.

Here, we'll consider the scale of the challenge that lies ahead and the role of plumbing and heating professionals in moving the UK towards a greener future.



Richard Bateman, Product Marketing Manager for Plumbing and Heating

Why the answers lie in retrofitting and renovation

With an average of 170,000 new homes being built each year in the UK, the reality is that the majority of the homes people will live in by 2050 are already built. With millions of these properties

already falling behind in terms of energy efficiency, the focus must be on retrofit and renovation to bring them up to standard.

Millions of British homes currently do not meet the requirements for Energy Performance Certification 'C'. The impact of this rating is two-fold. Firstly, occupants of under-performing buildings may face higher energy bills alongside reduced levels of comfort. Secondly, to compensate for a property's heat loss, heating systems will likely be working harder and having a greater negative impact on the environment.

In practice, ensuring existing homes meet EPC 'C' standards is essential for the UK to achieve its net zero ambitions. To achieve this, the renovation of these properties and the retrofitting of effective plumbing and heating systems – from underfloor heating through to heat pumps – to improve efficiency and reduce heat loss, will put the UK on a more sustainable footing.

The role of installers and the solutions facilitating retrofits

To make the vision of a more sustainable future a reality, installers will play a critical role. Working directly with property owners, plumbing and heating engineers are the experts on the ground, assessing properties to identify the most suitable solutions, and installing them correctly to deliver the greatest impact.

With millions of homes across the country in need of energy efficiency upgrades, tried, tested and trusted solutions will be used heavily to unlock the best results. This approach allows homes to benefit from proven systems, minimising the disruption of adoption while delivering long-term results.

Underfloor heating (UFH) is one solution that can be installed to improve



efficiency and comfort within a property. Compatible with new and old heat sources, UFH operates effectively at much lower temperatures than traditional radiator systems to reduce energy demands while sufficiently heating a home. Its positioning beneath floors also creates a much larger surface area, enabling UFH to heat spaces quickly and more effectively, improving comfort and efficiency.

For renovation projects, low-profile UFH systems – such as JG LowFit – are a proven solution, enabling installation over existing subfloor structures. For screeded floor applications, castellated panels support easy installation, whereas for timber floors, foil and mesh panels can be used to run pipes efficiently. These options equip installers with the systems and versatility to upgrade home heating systems and unlock greater levels of efficiency.

Aside from retrofitting sustainable heating systems, installers can also use pipes and fittings that contribute to greater levels of system efficiency. Plastic solutions can strengthen plumbing and heating systems to unlock greater performance, while fewer connections reduce the potential for problems such



as leaks – which can compromise overall efficiency. Featuring innovations such as push-fit technology, these solutions can also reduce the complexity of upgrading systems, simplifying jobs for installers.

The future of home heating

While installing more sustainable technologies will move homes towards a greener future, it is important to keep in mind what the future of home heating could look like. Here, installers can depend on manufacturers to lead the way through product innovation, ensuring systems and solutions comply with changes to the country's infrastructure.

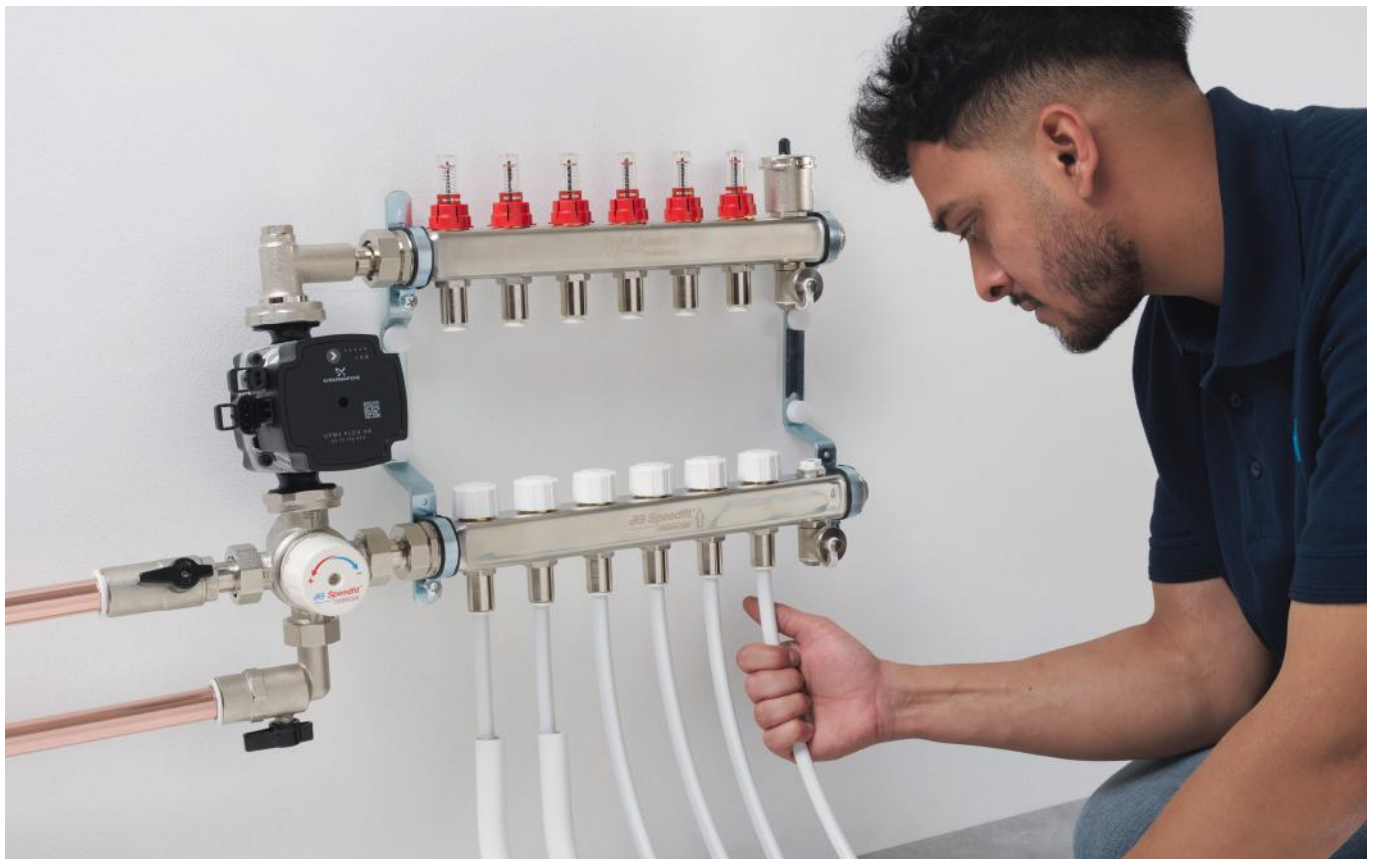
Today, more than 80% of homes are connected to the gas network. To achieve

net-zero by 2050, a shift away from gas to more sustainable energy sources will have the greatest impact overall – and the transition is already underway.

Thousands of homes have already adopted heat pumps, equipping them with a more sustainable heat source and cutting emissions at the point of use. Alongside the uptake in heat pumps, hydrogen looks set to replace natural gas in the coming years, with trials taking place in various locations across the UK. In the short-term, a natural gas-hydrogen blend is anticipated to cut emissions by reducing gas consumption by around 20%.

While these broader changes will have a direct impact on homes in the decades to come, they are just one part of the solution to a greener future. The changes being made by installers today – from installing UFH through to maximising system efficiency – are delivering tangible benefits for homeowners, including greater levels of comfort and cost efficiency.

To discover the plumbing and heating systems that are underpinning home efficiency for the future or discover how RWC are supporting installers through its family of brands visit: www.rwc.com/uk



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A move away from 'fabric first' is a step in the wrong direction



Paul Spence, Technical Manager for heatly

Paul Spence, Technical Manager for heatly, calls for caution when it comes to promoting the idea that heat pumps should be installed regardless of a property's energy efficiency credentials.

Paul said: "Following a new report from Nesta, *Insulation impact: how much do UK houses really need?*¹ which suggests the fabric first approach, i.e. making homes as energy efficient as possible, is NOT an essential part of the UK's current stage in the heat pump roll-out, I urge installers and heat pump customers to not take this as a cue to view energy efficiency upgrades as less important. Nesta's report focuses on carbon reduction, and you can't argue with the fact that ripping out fossil fuel heating and replacing it with cleaner, greener heat pumps will reduce the UK's carbon footprint.

"The reality is that for most people comfort and the cost-of-living feature far



higher on their agenda than cutting carbon. Let's be clear, I am a big fan of heat pumps both as an installer and now as a Technical Manager for heatly. I can't endorse, however, the idea that we should move improvement of the UK's woefully damp and draughty housing stock lower down the list in favour of banging in heat pumps as quickly as possible. This approach could serve to dent the reputation of heat pumps and ignores the consumers on gas who simply aren't in a position to make the switch".

Paul explained as an installer and through his Facebook Group Heat Pumps U.K.² he sees first-hand the problems that arise when heat pumps are installed in very inefficient homes. He said: "One of the main problems is over-specification, which leads to higher costs and future problems. If heat loss is high, the size of the heat pump required to keep a building warm, increases. The bigger the heat pump, the more expensive it is. If, in the future, the homeowner makes energy efficiency upgrades, the heat pump and ancillaries (pipes, circulators, pumps etc.) can end up being over-specified, leading to systems that use too much power and are difficult to control.

"In Nesta's report it states: While better insulation is always beneficial with any kind of heating system, it is not an essential prerequisite for getting a heat pump. The key factors affecting a heat pump's efficiency are system design and adequately sized radiators. While insulation plays an important role in reducing heat demand, and can in some cases make heat pumps operate more efficiently, it is not the key factor in ▶





heat pump efficiency. Instead, having a well-designed heating system, with correctly-sized heat emitters that enable a lower flow temperature, is the most important factor behind a heat pump's efficiency.

"This is all true, but if the energy efficiency of the house changes, as is most likely the case in poorly insulated properties, the original design will no longer be suitable. Crucially, without a fabric first approach, energy bills will be prohibitive. One of the arguments I've seen to counter this is raising gas prices and reducing the cost of electricity, while everyone wants the latter to happen, it should not be at the expense of gas customers. 26 million homes are currently on natural gas, many of which are not in a position to switch to a heat pump, it seems unfair that they should be penalised for something beyond their control.

"This type of policy masks poor housing and poor heat pump installation by

economics. We should be striving for a future where COP 4+ is the norm, which can't be achieved without a whole-house approach.

"While Nesta's report doesn't suggest doing away with energy efficiency upgrades, I would just be cautious of the message that could be misconstrued by some readers. Where possible, 'fabric first' should always be the way to go. If carbon reduction by means of a swift switch to heat pumps is the only goal, homeowners and landlords will need far larger subsidies than the ones currently available, and the industry must be prepared for greater numbers of dissatisfied customers".

Paul concluded by saying: "For the low-carbon sector to thrive, quality is key, happy customers in warm homes that cost less to run. I'm excited to be

working with heatly because it will make a big contribution to this goal; improving heat pump specification and installation accuracy, simplifying the associated processes for installers and making the benefits of heat pumps and supporting energy efficiency upgrades easier to understand for consumers. Heatly is the new app currently in development, set to revolutionise the heat pump sector, by simplifying and speeding-up processes like room surveying and heat loss calculations, while providing greater clarity for consumers, including the ability to see how measures such as insulation will impact their energy bills".

Info
www.heatly.com

Source:

1. www.nesta.org.uk/report/insulation-impact-how-much-do-uk-houses-really-need/
2. www.facebook.com/groups/684966259514987



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Heat Pumps in District Heating and Retrofit

In the second article in the series panel expert at REHAU Retrofit 23¹ event, **Simon Eddleston**, Construction Director at Switch2 Energy discusses retrofitting homes, in particular looking at district and communal heating technologies and the benefits to end-users as a result of their retrofit work.

The government aims to significantly increase the share of total heat derived from heat networks by 2050 as part of the transition to net zero. With this comes huge potential for investment, innovation and low-carbon technology advancement.

Under this decarbonisation strategy, the UK Government plans to expand the sector by 2050, so that heat networks supply 18% of total UK domestic heat, compared to 2% today.

If we are to reach such an ambitious target, it is clear that relying on new-build schemes alone will not be sufficient. Therefore, retrofitting heat networks into existing homes and developments has a huge part to play in achieving the adoption of these technologies at scale.



Simon Eddleston, Construction Director
at Switch2 Energy

Heat Networks

Communal and district heating networks are heating systems that provide low-carbon and renewable heat energy to multiple buildings or properties from a central energy source via a network of insulated underground pipes. Heat networks offer a sustainable, holistic approach to energy distribution, which can deliver cost-effective and reliable heating to communities, as well as commerce and industry. They will also play a key role in the decarbonisation of heating, as a central heat source can be much more easily upgraded as new, low-carbon technologies are developed, and it can be used to harness heat from renewable sources as they become available, for example waste water heat recovery.

Communal heating is the term that is usually used to describe the supply of heat to a community of homes comprising typically across multiple buildings within a campus-style development with multiple dwellings, such as a multi-storey tower block or housing complex.

District heating is the term that is used to describe larger scale distribution of heat across multiple boundaries larger in scale, delivering heat to multiple developments, across a city including homes, businesses, and public buildings.

There are four main components of a communal or district heating network:

1. Heating or cooling energy centres: These are the central sources where heat or cool air is generated, and renewable energy captured
2. Distribution network components: The pipework and infrastructure that helps distribute the heating or cooling energy from the central source to the end users.
3. Customer installations: These include thermal loads, energy storage systems, metering and control systems
4. Heat Interface Units and consumer heating: The wet heating system within buildings connected to the network. Heat Interface Units connect the network to the heat emitters e.g. radiators in the homes of consumers.

Retrofit

As I mentioned, retrofitting heat networks into existing developments is crucial if the country is to meet its targets and to keep on track with the decarbonisation of domestic heat.

Central to any of Switch2's retrofit projects are the residents impacted by the works. This isn't about hitting targets or meeting planning requirements – at the heart of every project must be an assurance that residents will be able to heat their homes, in a way that is intuitive to them, and more efficiently and affordably.

From the consultation stage, all the way through to design and build, in any project we work on there is a clear journey for residents to go on to become our customers. As part of our onboarding, it's essential for us that residents understand how the technology works, the benefits to them in terms of cost, and more practically, how their billing will work.

As an operator, we have explored several ways of retrofitting communal heating systems into existing housing stock – I will set out three examples of what this can look like in practice.

Extension of existing networks

In 2017 we were approached by one of our existing supply partners in London, to operate a community energy network on their behalf. The council expressed a desire for their existing heat network to be expanded to reach additional houses around the periphery of the network to meet their target of connecting 4,000 homes across the borough to the network by 2025. The existing network already covered a significant number of residential and commercial buildings, but the council recognised an opportunity to deliver more

low-cost heat to individual houses around the footprint of their network.

The process involved connecting non-heat network homes – mostly small residential terraces – to the existing network, replacing their conventional gas boiler and connecting the heat source to existing radiators within homes. Much like the combi-boilers they were used to, the heat network delivers instant heat. This means that the system works intuitively for residents and heats their homes without the need for them to learn how to use new tools or technologies. The removal of gas from their homes meant they no longer had to undertake annual maintenance on their gas appliances, with the new HIU coming under the responsibility of Switch2.

Additionally, with the installation of electronic Heat Interface Units within homes, heating can be externally monitored to ensure that the system is working properly and that residents are keeping warm and healthy.

Our connected ICON Heat Interface Unit allows for monitoring, adjustments and maintenance to be carried out remotely. This means that residents do not have to book maintenance works themselves and ensures optimal efficiency of the network as a whole, while reducing maintenance costs and increasing reliability.

There is enormous potential for this kind of retrofit, particularly in urban areas such as London, where non-heat network homes adjacent to existing networks can be easily connected with minimal disruption or expenditure. ➤

District heating





Multi-building

The company has also carried out retrofit works on more common housing over a smaller scale. These properties are generally high-density, 1970s-built tower blocks with shared spaces, operating on electric heating.

There are many examples of heat network retrofit works done alongside a range of other refurbishment, retrofitting or building safety improvements – cutting project costs and minimising disruption to tenants.

As a resident-focused energy company, we have been involved in many of these schemes, and are well placed to facilitate the process of tenant management and engagement.

The incorporation of metering alone can reduce consumption by typically up to 50%.

There is also significant funding available for heat network retrofitting works of this type, available through the Public Sector Decarbonisation Scheme². The scheme, which is providing over £1.4 billion of grant funding until 2025, incentivises a ‘fabric first’ approach – maximising the performance of building components used during the design phase. If undertaking efficiency or insulation upgrades in a building’s shared space, funding from the scheme could be utilised to fund a new low-carbon communal heating system within the property.

Decant and rebuild

As a company we have also been exploring retrofits where a developer or housing association has decided to regenerate a whole area; knocking down a collection of buildings under a phased regeneration plan providing the opportunity to incorporate low carbon heating as part of the rebuild plan, and onboarding residents in phases.

In one example of such a scheme in London which is already underway, there is a commitment to develop a community of 3000 homes where buildings are rebuilt in phases, with residents decanted throughout the process. This means that from the outset energy sensors and a communal heating system can be installed alongside the development of the buildings – meaning that it is ready to go as soon as works are completed.

In a project such as this, the energy centre is managed and scaled so that it remains efficient throughout, with capacity increased as the community grows and new homes are connected.

It’s important to note that Switch2 is technology agnostic and takes an environment-led approach to any retrofit works, so will use the technology that is right for each environment. While this retrofit scheme in a more high-density

environment utilises air source heat pumps for its energy centre, in a lower-density environment it can be beneficial to use ground source technology.

As a founding member of Heat Trust³, the consumer champion for heat networks, all of our networks operate within this frame of governance placing customers at the heart.

Residents must be considered before, during and throughout the retrofit process. It’s vital that, from the consultation stage onwards we work with tenants so that they can make informed choices when projects are designed and built.

In an unregulated heat network sector, transparency and a customer-focused approach are key for us as an operator, so any retrofit projects must start and end with the resident. 🏠

Info
www.switch2.co.uk

In the next issue, we will hear from **Steve Richmond**, Head of Marketing & Technical at REHAU, who will offer his technical expertise on district heating, alongside wider industry challenges and the policy landscape.

Source:

1. www.buildingcentre.co.uk/whats_on/exhibitions/retrofit2023
2. www.gov.uk/government/collections/public-sector-decarbonisation-scheme
3. www.heattrust.org



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Samsung Climate Solutions announces high temperature rating on MCS for EHS Mono HT Quiet Range

Samsung Climate Solutions are delighted to announce the full EHS Mono HT Quiet range (8kW, 12kW, 14kW) has achieved 65 degrees Celsius high temperature rating on MCS.

The 8kW (AE080BXYDEG/EU) tested at SCOP 2.82 at 65 degrees Celsius, the 12kW (AE120BXYDEG/EU) tested at SCOP 3.01 at 65 degrees Celsius, and the 14kW (AE140BXYDEG/EU) tested at SCOP 3.03 at 65 degrees Celsius.



Joseph Raftery, Heating Product Manager at Samsung Climate Solutions said: "Since MCS has changed the threshold for heat pump listing, from 2.4 SCOP to 2.8 SCOP, this has made listing at 65 degrees extremely difficult to achieve. With the support of our fantastic R&D facilities, Samsung Climate Solutions rose to this challenge. This has resulted in a heat pump, the EHS Mono HT Quiet, that can deliver total performance down to minus 25 degrees ambient conditions, as well as high temperature capabilities, and of course, it's Samsung's quietest heat pump yet and Quiet Mark certified. We are truly proud of this amazing evolution in heat pump technology and performance."

For more information on the EHS Mono HT Quiet visit: <http://tinyurl.com/5absyya5>

www.samsung-climatesolutions.com

Fernox heat pump filter wins prestigious industry award

Fernox has been awarded the 'Domestic Heating Product of the Year - Components' for its Sigma TF1 HP Filter at the H&V News Awards 2023. The award, is presented for a product that demonstrates genuine innovation or a novel application of existing technology to new markets.

On winning the award Anna Tarbuck, Director, Research & Product Technologies at Fernox said: "We are thrilled to receive this prestigious award. For 60 years, we have led the field. This win is a testament to our ongoing commitment to research and development programmes that have driven continual product innovation, such as our heat pump filter, which joins a growing line up of solutions for the renewables sector."

Fernox TF1 Sigma HP Filter

The filter is an innovative solution specifically designed to protect air and ground source heat pumps from debris and contaminants. Central to its outstanding performance is innovative flow and filtration technology to capture magnetic and non-magnetic particles, including magnetite, hematite and scale as well as bacterial slimes, even at the high flow rates of a heat pump system. This reduces the risk of blockages, corrosion and damage to the heat pump components and improves the efficiency and performance of the system while reducing fuel wastage.



www.fernox.com

District heating sub-station heat pumps

Solid Energy is pleased to announce the introduction of a new heat pump designed specifically for the UK District Energy sector.

One of the major problems facing the development of new and existing low temperature district heating schemes is that they cannot be connected to many of the large older buildings, due to these premises current heating operating temperatures of 82°C/71°C.

Solid Energy, has now overcome this problem with a new super-efficient heat pump that can use the low temperature district heating to provide these buildings with the flow temperatures that they require.

The heat pumps range in size from 200kW to 5MW and when operating at 82°C/71°C can deliver COP figures of over 6.00, determined by the district heating temperatures. Higher flow temperatures up to 115°C can be achieved when required by hospitals or for industrial process heat applications.

Manufactured within a steel cabinet that contains the compressor, heat exchangers, frequency converters and all controls. Acoustic panels reduce the noise levels to 70dB outside of the cabinet. Due to full factory assembly and testing the installation work on site is greatly reduced.

The cabinet is fitted with refrigerant leak detection equipment and an ATEX rated ventilation fan. Upon detection of a leak the heat pump is closed down the fan continues to move any residual refrigerant outside the building.

All modules within the DH Sub-Station option have single compressor, with a design life of 100,000 hours is semi-hermetically sealed, and requires very little maintenance.

The natural butane refrigerant (R600) has GWP of 0.2 and will continue to be one of the main refrigerants after the artificial refrigerants have been discontinued from use.



This new addition can be combined with our other heat pump modules to allow the capture of low temperature waste energy from factories, wastewater facilities and data centres. Using other hydrocarbon refrigerants, we can utilise source water at lower temperatures (5°C - 65°C) to produce flow temperatures up to 85°C and higher, by using twin or multiple compressor combinations to achieve the best possible COP figures for each project.

For further information contact either:

Ken Kneale, Solid Energy Business Unit Director UK by calling **07702 213511** or email kk@solidenergy.dk.

Mike Brown, National Sales Manager, Pure Renewables Commercial Ltd by calling **07842 437866** or email mike.brown@purerenewables.co.uk

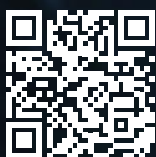
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