

ADVECO NEWSLETTER

September 2023

Welcome to Adveco's September newsletter,

Whilst July and August may have seemed a washout to most of us, it continued to be a prime opportunity for solar thermal systems to maximise opportunities for generating free energy for more than 800 sites across the UK which have Adveco designed and supplied systems deployed on their buildings to heat water applications. The UK continues to lend itself to the technology, and this month we look at how it can be applied to reduce carbon in gas-fired systems, as well as mitigating the costs of moving to electric water heating. We offer a wealth of new resources online, a new free handbook, CPD sessions and onsite training for installers to ensure you have what you need to get the most out of solar thermal.

With the government's efforts to deliver on climate action garnering withering criticism, we also take a look at how impactful policy has been on the commercial built environment. With almost 80% of existing buildings still expected to be in use in 2050 there are also huge implications from new legislation which it is hoped will mandate necessary change. In particular, we look to the forthcoming Future Buildings Standards and the recently introduced EPC ratings on commercial rentals.

We are also extremely pleased to once again be shortlisted for a pair of Heating & Ventilation Review (HVR) Awards, as well as being named an Energy Project of the Year Finalist in the Energy Awards. This year our work developing Live Metering and our next generation, low-carbon FUSION packaged electric water heater range have both been recognised for their innovation and sustainability...

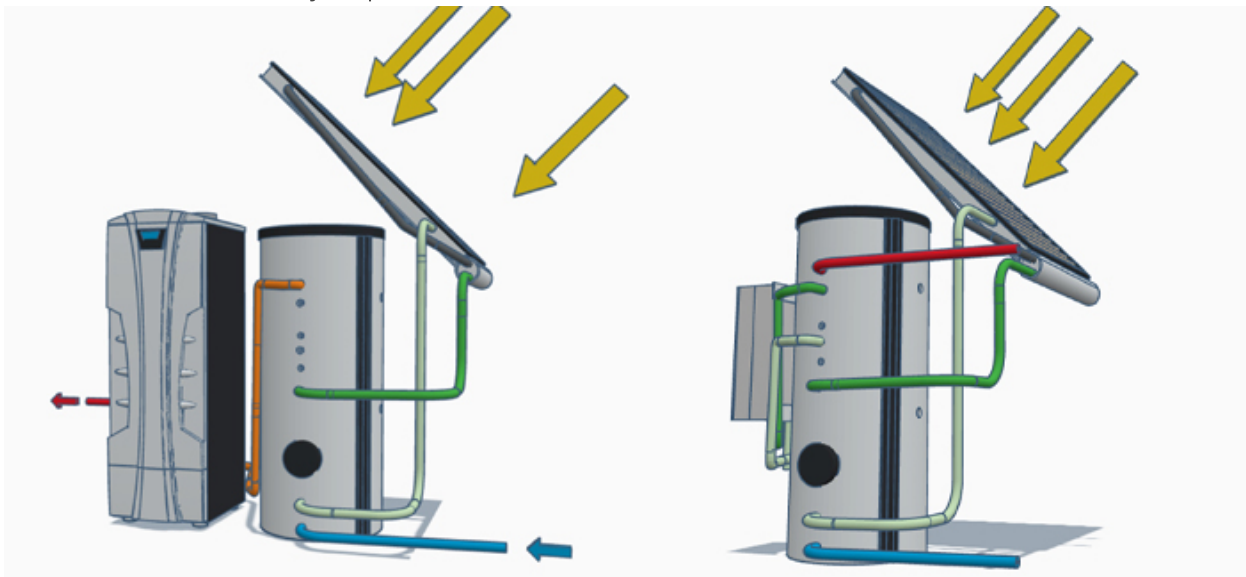
Solar Thermal - Proven Net Zero Technology



Capable of offsetting typically around 30% of the energy demands for water heating, solar thermal systems are ideal for organisation that rely on large amounts of domestic hot water (DHW).

Modular, high-performance flat plate collectors are by far the most efficient way to heat water with solar energy, offering a smaller footprint compared to equivalent solar photovoltaics (PV) for DHW. A typical 4 kW PV system requires approximately 16 panels covering 25m² of roof to match just three flat plate collectors covering just 6.6m² roof area. This makes solar thermal a prime choice when roof or façade space is limited. A south-facing and unobstructed roof with an inclination of 30° from the horizontal is optimal, though by no means essential as modern solar collectors can be installed in a variety of permutations. Adveco collectors feature a copper meander absorber through which passes the solar fluid (glycol) transferring solar energy as heat to the system's water via an indirect cylinder. Collectors with an integrated drain back module, which prevents damaging overheating of the solar fluid, offer a low-maintenance, more cost-effective (as there is no requirement for large solar storage) and more efficient (as there is no call to dump unused heat) approach to incorporating solar energy into a sustainability strategy.

For existing buildings with gas-fired water heating solar thermal is employed as a system pre-heat, reducing demands for gas to actively cutting carbon emissions from the buildings. Commercial new build and refurbishment however are either mandated or opting to shift to direct electric. Though perceived to be cleaner, they are finding the move comes with new financial challenges as electricity remains substantially more expensive to operate than gas - currently by a factor of 3.8. Undisputed carbon and cost savings means we are seeing a definite upswing in interest for new solar thermal systems which can deliver return on investment within a 10 year period.

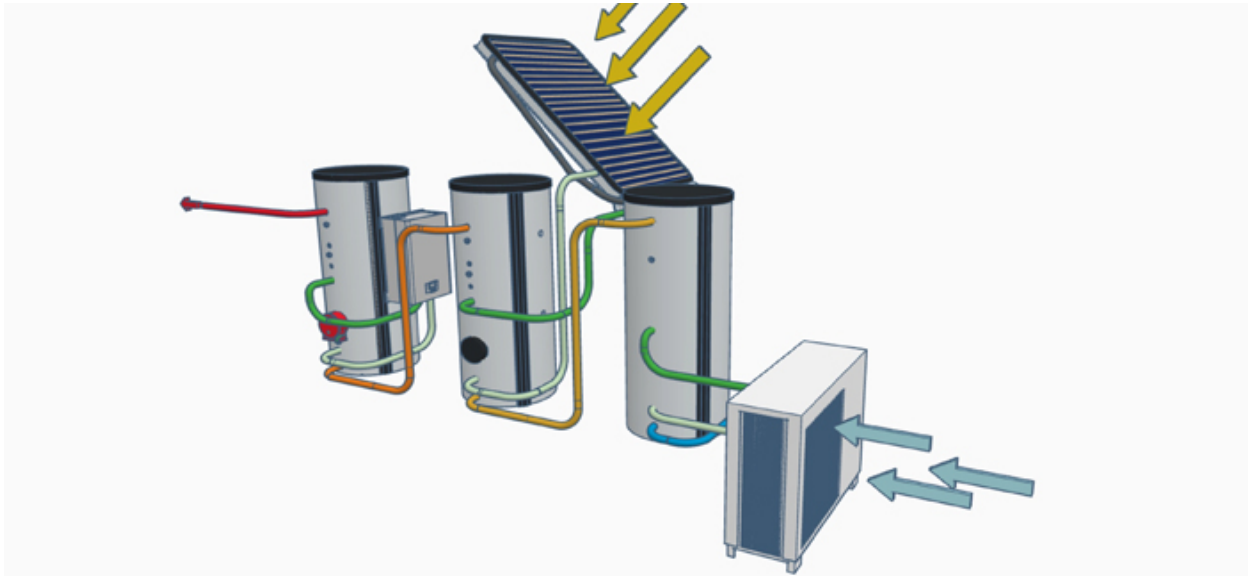


For new build properties with electrical connection, the gas-heater is replaced with an electric boiler and cylinder to supply the afterheat which raises system temperatures to a necessary 60°C. This hybrid approach maximises the solar thermal input which Adveco has simplified by integrating a packaged FUSION E electric water heating system. The all-electric solar thermal approach further reduces carbon associated with grid electric systems and aids in lowering operating costs.

This hybrid approach can be further extended with the inclusion of air source heat pumps to provide the initial pre-heat for the system. Operating at lower temperatures with the cold feed maximises the efficiency of the heat pump, reducing electrical operating costs and raising working flows temperatures from 10°C to 40°C. This is not hot enough for commercial applications, so the pre-heated water is then passed to the mid solar thermal system. Essentially free to operate, the solar thermal system boosts the working flow temperatures from 40°C to at least 50°C. Although not operating at maximum potential, there is enough advantage gained from the solar thermal to warrant the additional system complexity and capital investment. During summer months it is possible for the solar thermal system to deliver the necessary 60°C working flow for safe provision of commercial hot water. But to ensure safe, consistent, and necessary

high operational temperatures, the water is passed to the FUSION electric water heater. Here final consistent water temperatures of up to 65°C are assured year round.

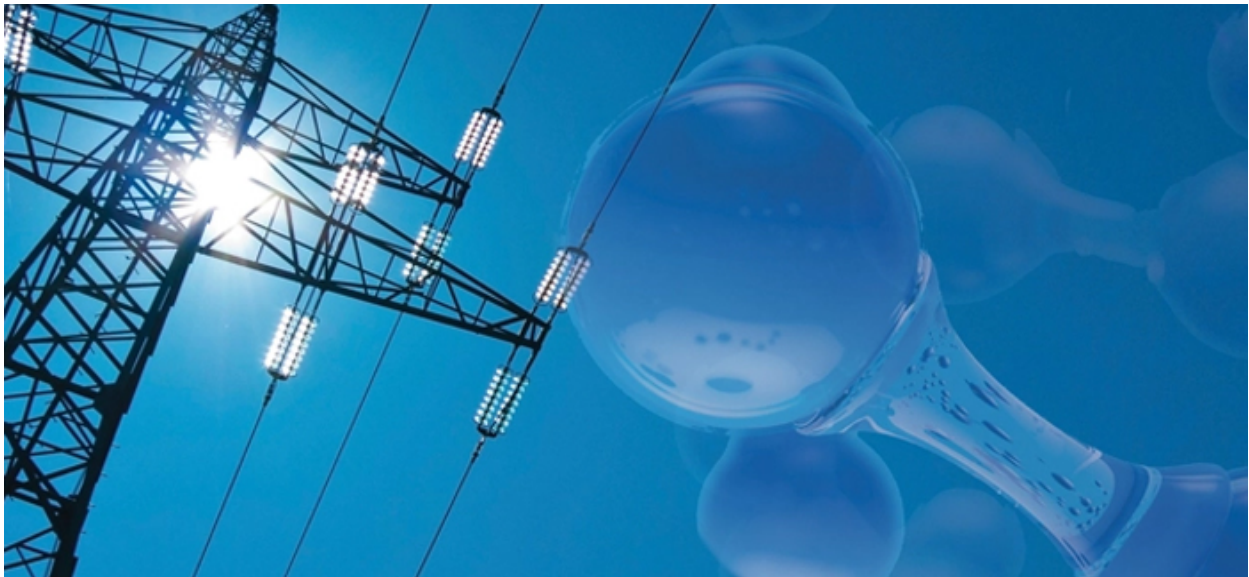
To date, Adveco has designed and supports more than 800 live solar thermal systems across the UK and such hybrid approaches are unavoidable if commercial projects seek a sensible, practical, and cost-effective path to low-carbon hot water.



[DISCOVER MORE ABOUT SOLAR THERMAL](#)

[GET THE SOLAR THERMAL HANBOOK](#)

Sustainability For Future Buildings



Are the Future Building Standards set to supply the necessary impetus for the commercial sector to deliver climate action in the UK before the 2050 net zero deadline?

The government's efforts to deliver climate action have been described as "worryingly slow," and its showcase green heat pump scheme "significantly off track" by the "markedly" less confident UK Climate Change Committee (CCC). Its latest conclusions, the UK would struggle to reach its targets for cutting carbon emissions whilst losing its leadership position on climate issues.

For those operating in the commercial and public sectors, the complexity of the challenge has been long apparent, as has been the government's skewed focus on domestic carbon reduction, despite the tremendous amount of existing commercial properties which contribute considerably to the UK's total carbon emissions. National Grid modelling incorporates heat pump installations as a part of all future low-carbon scenarios, but within eight years its models also look to the introduction of hydrogen. Still, to be formally decided upon by the government, all we can say for certain is that hydrogen may be part of the future, and most likely for commercial properties with large demands for heating and/or hot water. What we do know is electrification of heat is part of our future and it is available now. Whilst there are macro challenges for an all-electric network, from production and transmission of enough electricity to meet increasing demands, to speed and cost of delivering new grid connections, our concerns as an industry must focus on the buildings before us.

As a hot water specialist, we recognise that **low-carbon heat sources** need do one thing – preheat the water, reducing energy consumption of the water heater to lower carbon emissions and better manage operational costs.

In recent years though it has become clear that carbon savings and cost savings for water heating are no longer aligned. As an example, if we take a building with an average occupancy rate of 23.5 with the provision of basins, and shower/wet rooms, typically seen in student accommodations, care homes or boutique hotels, the yearly running costs resulting from a change from gas to direct electric would increase from £1019 to £3019 (based on electricity on average currently costing as much as 3.8 times that of gas). As a result, clients will push back when faced with increased running costs. Even with an ASHP operating at optimum efficiency (for 35% recorded reduction in energy) costs would still more than double to £2862.

Are modelled 70%+ reductions in carbon therefore enough of a reason to convince most organisations to actively invest in change? For some certainly, but many will struggle with this new reality. This means the deciding factor for investment in low-carbon systems needs to come from building regulations.

[READ MORE ON FUTURE BUILDINGS STANDARDS](#)

Commercial Building Rental & Sustainability



What are EPCs, and why should they matter? If you own/rent or lease a commercial property then this legislation could have a far-reaching impact on both your buildings and how and where your business operates.

To ensure the timely conversion of building stock the UK has introduced increasingly stringent environmental, social and governance (ESG) regulations. The Energy Act (2018) is one such tool which has been designed to prompt landlords to ensure properties are energy efficient. When legislation relating to Energy Performance Certificates (EPCs) was introduced as part of the Energy Act, there was much consternation from domestic landlords facing additional costs to bring buildings up to standard.

Since then, there have been a series of complaints cited against EPCs, not least because of the focus on the building fabric and the installed technologies, rather than how the current occupants use the buildings. Reduced Data Standard Assessment Procedure (rdSAP) software model used for EPCs, for example, ignores key factors such as the versatility of heat pumps and thermal storage in its calculations, despite these being core technologies deployed as we electrify heat. Another cited problem relates to the data which forms the foundations of the EPCs which, currently, use carbon emissions and Primary Energy Factors dating to 2012, which are no longer reflective of the UK's energy mix which has more renewables and little to no coal.

Despite the complaints, the legislation has continued to move forward. Since 1st April 2023, the ensuing legislation – the Minimum Energy Efficiency Standard (MEES) – prohibits landlords from leasing commercial buildings with an EPC rating of 'F' or lower. This also extends to existing tenancy agreements. The impetus for the legislation stems from the fact that rented buildings account for 61% of the total non-domestic stock in England and Wales, and are responsible for 37.5% of the total emissions from non-domestic buildings, according to recent figures from the Department of Business, Energy & Industrial Strategy (BEIS). As a result, the new legislation means buildings currently rated F or G are at risk of becoming non-performing assets for building owners and landlords. According to the most recent government estimates, around 11.4% of commercial buildings in Great Britain currently fail to meet the new standard.

And this is just the first move in the government's overall net zero proposal for all non-domestic buildings, with requirements that the properties attain a C rating by 2027 and then a B by 2030.

The intent is to drive forward the government's goals for net zero by 2050. Improving the energy efficiency of a building is, according to the government, "one of the most cost-effective ways in which businesses can reduce their energy use and lower the associated bills in the buildings they occupy." The government estimates non-domestic property owners, landlords and tenants are losing around £1 billion in cost savings achievable through investment in energy efficiency, whilst capital expenditure (CAPEX) is tied up in depreciating assets such as equipment and systems. And it believes that by driving up business sustainability concerns, leaseholders inhabiting F- and G-rated properties will start searching for modernised and more sustainable buildings which help future-proof operations and the comfort of their workforces. Under EPCs properties become un-lettable, and landlords with lower-rated properties face penalties ranging from £5,000 to £150,000 based on the duration of the breach and a percentage of the rateable value of the building, the threat of non-performing assets is felt to provide new incentives for energy efficiency upgrades which should be a top investment priority.

But is an urgent implementation of energy efficiency improvements the response coming from landlords and property owners?

The answer, at least from the domestic sector appears to be a resounding no, with recent research conducted by Green Building Renewables, suggesting 63 per cent plan to sell properties rather than invest in energy-efficient measures like insulation, heat pumps and solar. This figure climbs to 75 per cent of London landlords. The predominant cause for concern was one of how to raise the necessary capital for property improvements needed to meet EPCs' 'C' rating. These costs increase exponentially for commercial properties where the size and age of the building, and system demands can add further complexity to refurbishments.

HOW TO ADDRESS NEW EPC RATINGS

Heating & Ventilation Review 2023 Awards



Adveco is proud to announce it has once again been named finalist in the 2023 [HVR Awards](#) and, for the first time, the company has also been named finalist in the Energy Awards.

Named finalist in the *HVAC Initiative of The Year* and *Commercial Heating Product of the Year* categories, Adveco once again demonstrates its dedication to driving the innovation and sustainability of water heating applications for commercial buildings.

Challenged with supporting gas replacement programmes Adveco developed a process to live meter hot water demands of existing systems to enable accurate replacements to be designed. The process of Live Metering has proven to be an extremely cost-effective method for generating proof of concept for the greenlighting of decarbonisation work as part of immediate net zero strategies, earning it recognition as a finalist in the *HVAC Initiative of The Year* category of the HVR Awards and *Energy Project of the Year - Public Sector* in the Energy Awards.

Adveco FUSION packaged water heating system has been completely redesigned from the ground up to provide four new models with pre-sized variants which deliver low-carbon all-electric systems for commercial projects. Supplying a range of lower-carbon options for commercial projects requiring domestic hot water for sink and basin-led demands, the system enables organisations seeking to invest in new or replacement systems to deliver on sustainability targets today. This product innovation earned Adveco, in the *Commercial Heating Product of the Year* category, its second finalist selection.

“The vision for, and execution to market of both our Live Metering service and the completely new generation of FUSION electric water heating systems highlight what we, as a company, do best. Listen to our customers and develop the tools and systems to best meet their fast-changing needs for sustainable hot water,” said David O’Sullivan, managing director, Adveco.

“Being named finalist once again in the HVR awards and now in the Energy Awards demonstrates the advantages of Adveco’s independent approach to innovation, delivering fast-to-market, low-carbon, cost-effective responses as we all work to achieve net zero. It’s a great accolade for the entire team to be recognised for their dedication and effort in meeting new sustainability challenges.”

The 2023 HVR Awards (Heating & Ventilation Review) celebrate the products, brands, businesses, and people that have led the way with their innovation and unrivalled levels of excellence, inducting them into the prestigious HVR Awards ‘Hall of Flame’.

The Energy Awards celebrate the outstanding innovation and achievements in the energy industry. From stand-out suppliers to technical and digital innovators, exemplar building projects to the very best collaborations, the awards highlight the most pioneering and innovative companies, suppliers and teams within the sector.

The winners of the 2023 Energy Awards will be named on October 4th while the HVR Awards will be announced on October 5th, and we commend all the finalists.



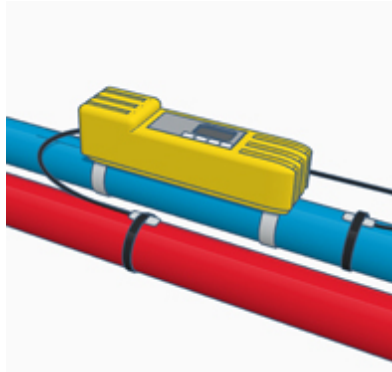
Sustainable Electric Hot Water



Air Source Heat Pumps

The FPi32 & L70 ranges of commercial Air Source Heat Pumps (ASHP) for the provision of preheat in domestic hot water applications. Adveco ASHPs can be supplied as a part of a bespoke hybrid, or all-electric system, as well as an element of a prefabricated plant room system.

[FIND OUT MORE](#)



Live Metering

Data gathering, sizing and bespoke system recommendation for commercial properties intending to replace legacy gas systems. Live Metering supplies business-critical information to create more sustainable applications that are optimised to meet all hot water storage and delivery demands.

[FIND OUT MORE](#)



ARDENT Electric Boiler

ARDENT is designed to serve as an indirect water heater or heating system. Wall-hung and floor standing variants for those seeking to avoid a reliance on gas energy supplies. In hard water areas the ARDENT electric boiler can be used to dramatically reduce the costly build up of damaging limescale.

[FIND OUT MORE](#)

Adveco 2023 Product Guide

Now updated to include the new Adveco FUSION system and Live Metering service, our guide provides a full summary of Adveco's current product portfolio. Don't forget these are just the start of our offering, acting as the buildings blocks for your bespoke hot water systems...

[2023 PRODUCT GUIDE](#)



2023 PRODUCT GUIDE

Low carbon, electric and gas domestic hot water systems for bespoke commercial building projects



Discover Adveco's expanding range of low carbon and renewable products

[Solar Thermal Systems](#)

[FPi R32 monobloc Air Source Heat Pump](#)

[L70 Air Source Heat Pumps for larger projects](#)

[FUSION packaged electric water heaters](#)

[Hot Water Cylinders, Indirect Water Heaters, Calorifiers & Buffers](#)

[Commercial Gas-Fired Water Heaters](#)

[Standalone Heat Recovery from Chillers](#)

[Offsite Constructed Packaged Plant Rooms](#)

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