



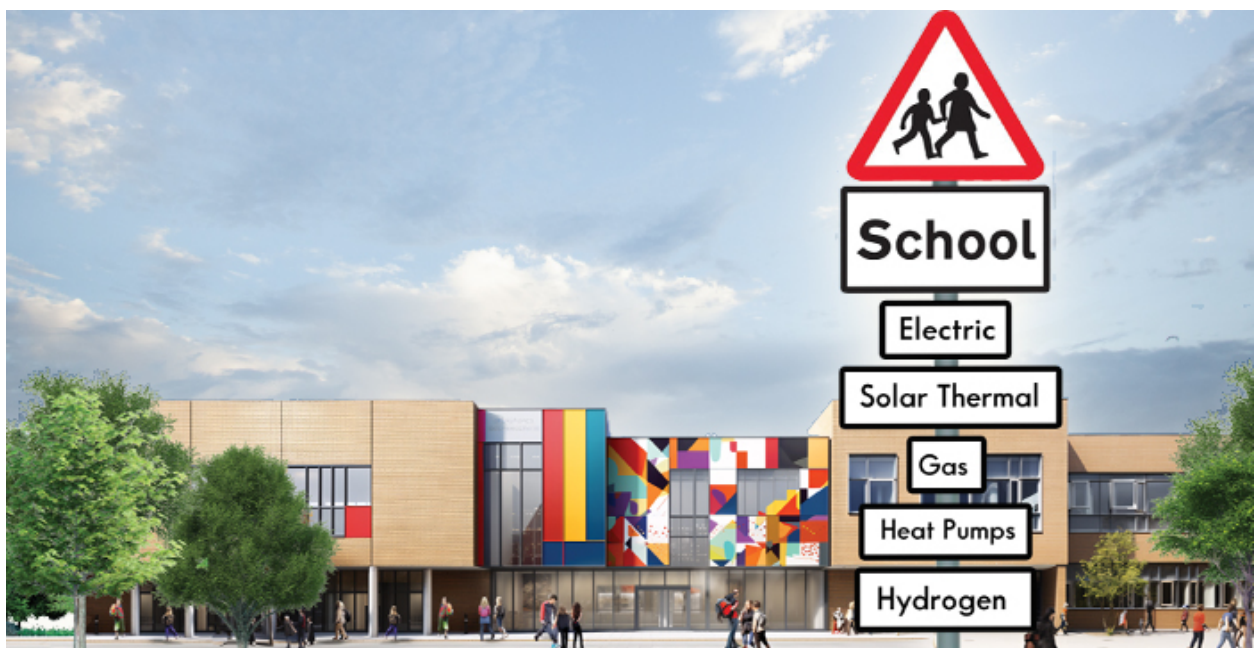
Welcome to Adveco's February newsletter,

Where do you start with sustainability? If this was an ideal world, we would know exactly what to do and all be producing absolutely zero emissions from all of our activities. But this is the real world, which means efforts will be hindered by myriad issues, not least technology and cost. We start this month looking at the particular challenges facing the public sector organisations as they are charged with leading the country toward a net zero future.

We also highlight and provide a response for the overwhelming lack of trained installers capable of delivering sustainable HVAC as part of a wider net zero strategy. While much focus has been placed on the need for experienced heat pump installers, we shine a light on the lack of solar thermal expertise needed to roll out this proven low-carbon alternative to gas and grid-electricity.

There is also an exclusive first look at our new premium range of chilled water tanks, the Adveco Cold Water System (CWS) arrives this month to support projects challenged with keeping commercial buildings cool as global temperatures continue to rise...

Sustainability In The Public Sector



Most public sector organisations will find complete sustainability extremely difficult or next to impossible to achieve, so at present, most will be aiming for net zero emissions.

With the government setting targets for other businesses to follow, ensuring it raises its standards is essential. Government aim is to reach the net zero emissions target by 2050, however, there has been

growing pressure on the public sector, reflected in the aims of the Public Sector Decarbonisation Scheme, to reduce emissions from public sector buildings by 75% by 2037 (compared to a 2017 baseline) as set out in the 2021 Net Zero and Heat and Buildings strategies.

The latest tranche of grant money offered by the scheme will be up to £230 million, available through 2024/2025, with a budget for 2025/2026 expected to be at a similar level to fund heat decarbonisation and energy efficiency measures. Formal planned projects will have aimed for this grant funding, for which Phase 3c closed to new applications last November.

For organisations which missed this application deadline, or suddenly find themselves facing unplanned requirements to heat buildings, some options can still be instigated sensibly and cost-effectively to support operational planning as well as making new inroads into greater sustainability across premises.

The most common initiator for this sort of activity stems from failure in existing infrastructure, something commonly seen in legacy heating systems, especially where annual servicing or maintenance has lapsed through a need to make cost savings. Rather than a disaster, this can be treated as an opportunity to make small, but meaningful steps towards more sustainable operations. From the perspective as a supplier of hot water systems, the most common issue we see is boiler failures, especially at this time of the year when aging, inefficient systems are overworked and fail under excess strain. Many of these systems, which will be gas-fired can be well over 15 years of age and therefore retained beyond the recommended operational lifespan.

The immediate option is to seek a like-for-like replacement, and although gas has become a dirty word in connotation with net zero, the reality is that modern condensing gas water heaters and boilers provide greater efficiency, demanding less fuel and thereby actively reducing carbon emissions and cutting operational costs. Most appliances will also be future-proof, offering out-of-the-box capability to accept a 20% blend hydrogen/natural gas mix. This allows gas-connected sites to be prepared to accept possible future green gas supplies via the grid. The other alternative is to consider reducing gas demands with renewables, such as solar thermal, or completely transitioning to an all-electric alternative.

The latest innovative technology and processes can be seen in hybrid hot water systems that embrace heat pumps, solar thermal and electric boilers, allowing suppliers to support the sector in addressing the needs to achieve net zero, the circular economy and operational assurance. Better still, these alternatives rely on dependable, well-understood technology that can prove extremely cost-effective, both in terms of capital and operational expenditure.

To ensure any project is successful, especially if transitioning from gas to electric, we would always recommend investing in a short data-collecting exercise. Low-cost and low-impact, Adveco's Energy Saving Award-winning Live Metering service only takes a month but provides valuable data on existing system demands enabling accurate modelling of a replacement system. This almost guarantees savings, often considerable, and maximises any capital investment.



With system data in hand, what are the options?

For the safe delivery of hot water, whether basin-led system or larger shower and bathing demands, flow temperatures in commercial systems are required to reach more than 60°C. Reaching these temperatures is problematic for the current generation of heat pumps, necessitating a hybrid approach. The heat pump operates most efficiently at lower temperatures, so is perfect for supplying year-round preheat to the system and offsetting the energy demands and carbon emissions of top-up heating supplied typically by an electric or gas boiler. Further energy offsetting can be gained through the integration of solar thermal, used to achieve the required higher operating temperatures. In the right location, solar thermal alone can offset up to 30% of your annual energy demands for hot water production, potentially providing all water heating during the summer months when the solar fraction is at its highest. It also lends itself to gas-fired systems as a means of offsetting fossil fuel consumption.

Adveco has a deep heritage working with the public sector, developing often bespoke hot water systems for a range of buildings and usage. Recently it has been developing a pre-sized, compact and fast-to-install system called [FUSION](#) which combines an electric boiler, a specially designed cylinder and the options of a monobloc air source heat pump and/or electric backup immersion, all with prebuilt pipework. Resilient, able to work with all water conditions and able to effectively eliminate limescale issues typically seen in hard water areas, FUSION offers a long-lasting alternative for refurbishment as well as new build projects. Compared to equivalent gas-fired systems, FUSION also delivers a reduction of up to 71% in carbon emissions, capabilities which recently earned Adveco an Innovation Award, as well as a Commercial Heating Product of the Year accolade.



It's just one example of how a relatively small, low-impact investment can start to make a real change to the way a public sector organisation operates - whether a school, healthcare, or public safety provider - delivering instant improvements to a building's comfort and services while advancing sustainability at the same time. To learn more about finding your path to net zero visit Adveco or contact us for advice and support for your water heating needs.

NET ZERO AND HOT WATER

Commercial Solar Thermal For Installers



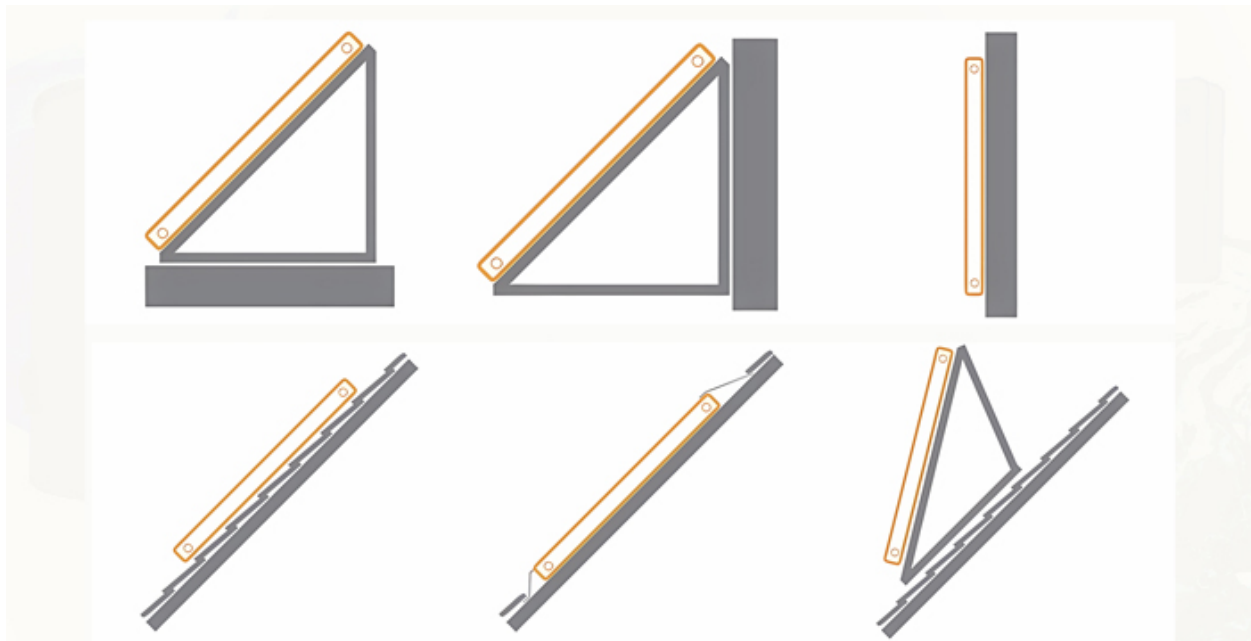
For commercial buildings sustainability undeniably comes at a cost, and water heating remains a major source of energy demand, accounting for up to 30% of daily power consumption for some organisations. It is also often a business-critical need, so addressing the demand should be an early function of any sustainability strategy. Commercial hot water systems are inherently complex, increasingly so as the industry moves from gas-fired systems to electric, but there remains one proven, relatively simple renewable technology that has clear advantages.

Capable of offsetting at least 30% of the annual energy demands for water heating, solar thermal systems are ideal for organisations which rely on large amounts of domestic hot water (DHW). For existing buildings with gas-fired water heating solar thermal is employed as a system pre-heat, reducing demands for gas to actively cut carbon emissions from the buildings. For new builds or major refurbishments, however, we are seeing the shift to direct electric, where solar thermal acts as either a pre-heat for an electric boiler system or is deployed as a mid-heat to take full advantage of an air source heat pump's capability to optimise the generation of pre-heat from the cold feed.

Demand for these systems is on the increase, but as with other renewables, there remains a need for skilled installers to meet this new demand. Modular, high-performance flat plate collectors, combined with drain back vessels are by far the most efficient way to heat water with solar energy. The drain-back provides overheat protection of the solar fluid (glycol) used in transferring heat energy from the collector to the system's hot water cylinder. For those familiar with commercial plumbing, there is a clear opportunity to upskill and add the technology to their range of services.

Planning is key for solar thermal installations. Because drain-back technology relies on gravity, all vessels in an array must be level with a maximum pitch of 0-1 cm over the total length of the drain-back assembly. This avoids the river effect in the pipework. Also, the solar collectors must be sited a minimum of 50 cm above the top coil connection to the system cylinder. This means solar thermal systems will need to be situated on the roof or façade of a building and will be problematic for buildings designed with rooftop plant rooms.

There are a variety of options available when installing collectors with drain-back. They can be built on or into the roof, mounted on the building's façade, or erected on an A-frame on flat or pitched roofs, or on a wall. The ideal facing direction to maximise insolation is south with a 36° pitch. Collector mounting, pitch and direction are set by the building, and an East/West split will demand two coils since the drain-back vessels will not be level. Built-on/built-in arrangements will support a single or double array of collectors, a flat roof gives the option of many more.



The other major consideration when installing collectors is the wind loading affected by altitude, height, topography, and layout of adjacent structures. Collectors which are built on or in the roof will be bolted into position, but for A-frame installations extra care needs to be taken since wind loading will be significantly higher for a vertical install versus a horizontal collector installation (30° angled frame). Wind loadings, which include a 50% safety factor, are defined by horizontal forces in kN and maximum pull-off. The manufacturer's calculation will indicate extra ballast weight required, usually in the form of a concrete

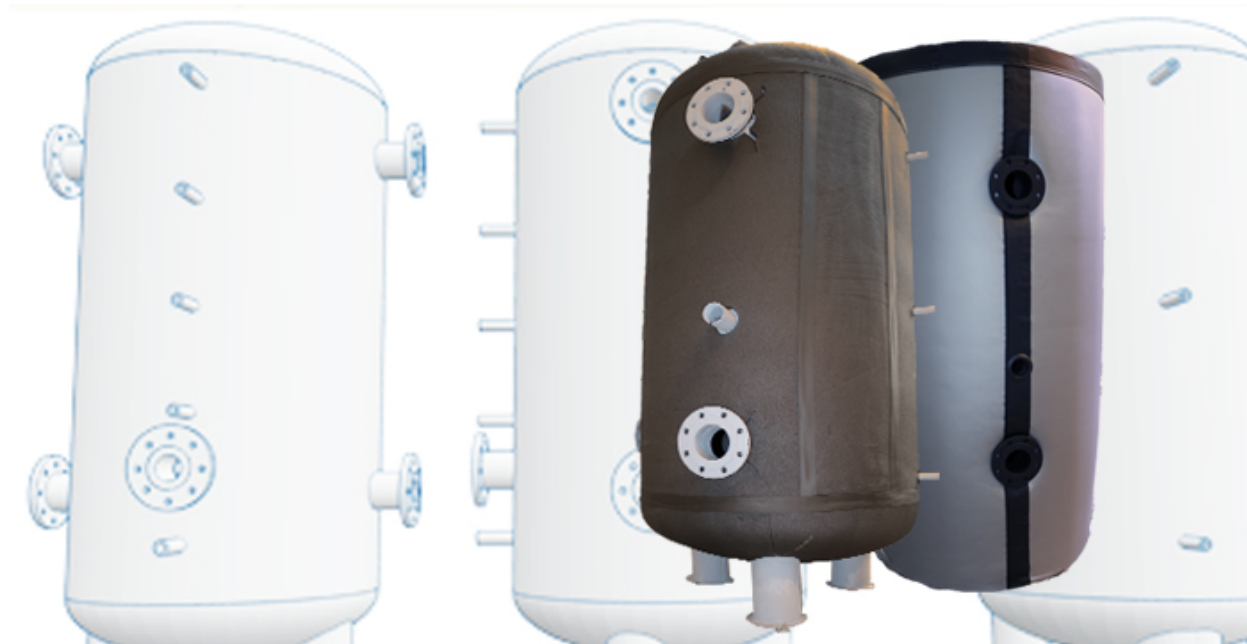
block. In locations where high winds are expected, it is also advised to provide mechanical fixing in the form of guy wires, or a Unistrut run-through and connected to the A-frame and fixed to a weathered-in post installed into the roof.

The collector is essentially 'the boiler' so flow and return are set in relation to the collector. The collector incorporates a copper meander, flowing in one side and out the other for natural balance. The flow from the collectors enters the top of the drain back vessel and passes from the bottom of the vessel to the coil top connection. Ideally, the flow and return will be at opposite ends of the collector array, however, up to six collectors can be arranged with same-side connections. Solar thermal piping and joining employ 22mm or 28mm plumbing in either copper or Solarflex, with copper preferred for all horizontal runs. Solar systems are however too hot for soft solder, so joints should use compression (brass olive), solar press fit, silver solder or braze.

For installers considering adding solar thermal to their portfolio, while you do not need to be a specialist, it really helps to understand the limitations before you begin. In our experience it is easy for errors to creep in, so Advenco offers free CPD sessions on solar design that can be adjusted to focus on the installation process. For a small fee, our engineers will come to site and walk through the first installation with your team. It's a sensible investment that guarantees a smooth commissioning process on a first install.

[LEARN MORE ABOUT TRAINING FOR SOLAR THERMAL INSTALLATION](#)

First Look: Advenco CWS Premium Chilled Water Tank



This month Advenco will launch its range of premium chilled water tanks capable of supporting projects with larger cooling demands typically incorporating chillers or fan coils. The next generation of cylinder, and natural successor to the Advenco CWT range, the new CWS chilled water tank offer variants from 300 to 5,000 litres all at 6 bar, with an option for 10 bar available on request.

CWS all come complete with dual layer insulation, the inner lining providing an anti-condensing underlay. This versatile design also provides large bore flanges and buffer plates, cleanout access and multiple sensor ports as standard, offering a range of connectivity options for a wealth of projects.

The Adveco Cold Water System tanks are available to order from this February. Talk to the sales team about your next project's needs.

TALK TO SALES ABOUT CWS TANKS

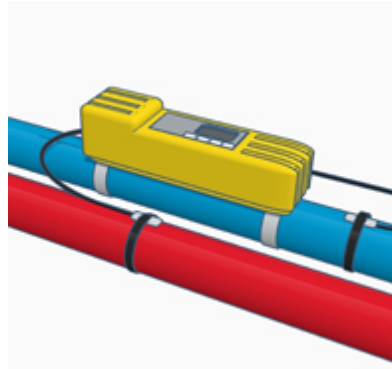
Sustainable Hot Water



FUSION

Adveco's FUSION packaged electric water heaters offer a range of low-carbon, all-electric applications for commercial projects with a wide choice of pre-sized variants combining ARDENT electric boiler, cylinder, ASHP, controls and immersions.

[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 2024 Product Guide

Get our handy reference guide to 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...

2024 PRODUCT GUIDE



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

[Live Metering](#)

[Solar Thermal Systems](#)

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

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

[FUSION packaged electric water heaters](#)

[Electric Boilers](#)

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

[Commercial Gas-Fired Water Heaters](#)

[Standalone Heat Recovery from Chillers](#)

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