



Happy New Year and welcome to Adveco's January newsletter,

We start this year looking forward as 2024 is set to continue the trend for innovation in sustainability. More so considering December's global agreement on the transition from fossil fuels signed at COP 28. The European Commission has set its accelerated goals, with notable inclusion of solar for commercial buildings and the expectation now has to be for the UK to follow suit or else lag behind as the green industrial revolution gathers pace.

At Adveco we start the year with a upgraded versions of the popular GLC & GLT carbon steel cylinders. We take a look at a recent installation for the University of Bath's student accommodation based around an L70 ASHP and ARDENT electric boiler. Plus the latest version of our product brochure is now ready to download for quick reference.

The Adveco website has also received a major technical overhaul, which should make navigation easier and page loading faster. We have also added quick links to all our product resources on the new product drop down menu, so data sheets, manuals, warranty information and brochures are all available with a single click from any page on the site.

If you are looking to extend your knowledge on the role of hot water as part of a wider sustainability strategy in 2024 do please visit our training pages and consider booking one of our popular CIBSE approved CPDs.

ON TRACK TO A SUSTAINABLE FUTURE IN THE UK?



While the UK has withdrawn from commitments EU member states are subject to, the country continues to mirror a great many regulations that extend across the EU, especially with regard to the environment. More so now in the wake of the [COP28 agreement on the transition from fossil fuels](#). So where does this leave the UK as we look forward from 2024?

Prime Minister Rishi Sunak had laid out his [“pragmatic” and “more proportionate”](#) commitment to reaching UK net zero carbon emissions by 2050. Many called out the shift backwards of timelines, but now the world will be looking to the developed nations and their response to the COP28 agreement. The EU Commission has made it clear that it could work within the language of the agreement, but that it had hoped the language of the agreement would be more direct, especially the use of ‘transition from’ versus ‘a phasing out’ of fossil fuels.

We only need look at the revised [Energy Performance of Buildings Directive \(EPBD\)](#) to see the scope of intent the EU is set to agree upon to gauge the challenge the UK must meet if it is to continue to lead the charge in delivering sustainable technology innovation and reduction of carbon.

Tackling climate change means setting out fresh commitments to decarbonise heat, the EPBD provisionally pledges to phase out the use of fossil fuels such as natural gas in heating by 2040. New amendments outline targets for reducing energy demand in buildings to help support wider EU legislation and environmental strategies that aim to scale up the use of low-carbon technologies and renewable power across the continent.

Alongside domestic commitments, the EPBD recognises the importance of addressing public sector and non-residential buildings which are seen as a major contributor of carbon to the atmosphere and, therefore key to tackling climate change. The revised EPBD therefore introduces a new zero-emission standard for non-residential new buildings. Expected to come into effect for publicly-owned buildings from the beginning of 2028 and extending to all other commercial property types by 2030, the changes would require all buildings in scope to have zero on-site emissions derived from fossil fuels, driving greater electrification.

New buildings will be required to be solar-ready, and able to fit rooftop solar thermal or photovoltaic installations as standard. This would be mirrored by new commitments for existing public and non-residential buildings to begin to install solar systems from 2027 - when it is ‘economically and technically feasible’ to do so. The building type and size though could affect when these new provisions would come into force.

On the topic of phasing out fossil fuels, the EU Commission has challenged member states to outline specific plans for cutting out the use of fossil fuels in heating and cooling solutions. This will include delivering a “complete phase-out” of boilers using fossil fuels (natural gas, LPG or oil) by 2040. “The revised directive introduces a clear legal basis for member states to set requirements for heat generators based on greenhouse gas emissions, the type of fuel used, or the minimum share of renewable energy used for heating,” stated the European Commission.

This revised, more aggressive timeline, if successfully passed, will no doubt form a benchmark for developed nations' adoption of the COP28 agreement, and one that the incumbent UK government will be held to match or exceed in the coming 16 years. With the current UK Parliament set to be automatically dissolved in December 2024, a general election will need to be called, and the expectation is that tackling climate change will be one of the political battlegrounds. We must now wait to see if the EU stance garners greater support and impacts on prospective policies of the parties fighting for political control here in the UK. There is a palpable sense of a shift in thinking, aligning science with politics. Now it comes down to how finance, infrastructure and legislation will mandate necessary change and critical timelines as we look toward the committed 2050 deadline for net zero.

Under the current Government's Net Zero strategy, despite similar carbon intensities for heating from either gas or electric, the latest regulations as outlined in the Heat & Buildings Strategy already deem gas systems alone to be too carbon polluting in commercial-scale buildings.

The Conservative government has previously pledged £6bn towards tackling climate change through the decarbonisation of heat, with an extra £1.5 billion of that money set to fund the facilitation of more installations of heat pumps, primarily for homes, but also small businesses. Under current consultation, the Future Homes and Buildings Standards, are also set to confirm the expectation for all new builds to be 'zero carbon ready' from 2025, reducing carbon emissions by at least 75% compared to 2013 standards. To decarbonise domestic hot water (DHW) applications there are currently two core technology options, air source heat pumps (ASHP) or solar thermal. Although both can provide low or zero-carbon heat, neither can fully replace an existing water heating system, since commercial DHW systems must operate in excess of 60°C. However, both technologies can be used as a source of preheat to reduce energy use. Both will work equally well with after heat provided by either gas or direct electricity.

For buildings already on gas and that rely on large amounts of DHW - a large proportion of current commercial UK properties - we agree with the EU that solar preheat is the preferable option. Depending on the site and its energy consumption habits, solar thermal will typically provide around 30% of the hot water demand.

For new build properties, the expectation is for specification to default to a mixture of heat pumps and direct electric afterheat. This does however come currently with higher operational costs compared to equivalent gas-based systems. Commercial sites with existing gas should look at continuing to use it until policy sets out a timeline for green gas, such as hydrogen, or other renewables that can effectively replace current gas grid supplies. The UK government has stated it remains committed to a 2026 decision on Hydrogen, despite the recent announcement that the two hydrogen village test site projects would not advance this coming year. It does, however, continue to [back blending hydrogen, in some cases, into the existing gas grid](#) at a maximum volume of up to 20 per cent to cut direct emissions from burning gas for purposes such as heat.

While we must all recognise the importance of excluding fossil fuels from future commercial systems and advocate all-electric systems for new builds, it is important to understand the implicit costs and difficulties of retrofit and replacement of systems throughout the thousands of legacy commercial buildings that define the UK's urban landscape. The hybrid approach is unavoidable for commercial projects and is the most sensible, practical, and cost-effective option. Whether all-electric or using blended gas after heat, commercial organisations can actively drive sustainability and retain control of operational expenditure for decades to come.

NET ZERO AND HOT WATER

ADVECO GOES TO UNIVERSITY



Scala is a new three-story accommodation development for the University of Bath. Co-located with the larger Courtyard Block and with a centralised plant room, the project delivers modern living for postgraduate students. Totalling 96 rooms, each household boasts five to ten ensuite bedrooms sharing kitchen facilities. There are also a small number of studio rooms, with their own kitchenette and bathroom.

The Scala project was at Stage 4 design with the developer/consultant with an initial domestic hot water (DHW) system based on air source heat pumps (ASHP) when LDM Building Services, a specialist in commercial heating, water, ventilation, and air conditioning, was contracted with authority to deliver design and build for the project. LDD felt the original specification appeared oversized, and on further investigation there were concerns that it might not deliver on requirements with ASHP alone, a common occurrence when working with higher temperatures required for commercial-scale DHW systems. On review, it became apparent to the LDM engineering team that there was an opportunity to deliver a system within the established budget that could also offer greater reliance through the application of a hybrid system that leveraged both ASHP and electric boilers.

Low-Carbon, Resilient Water Heating from Advenco

Aware of Advenco's expertise in design and supply of such a hybrid system LDM worked in conjunction with Advenco's design team, obtaining a new system design proposal, which was then overlaid by LDM's engineer onto the original plans and adjusted to fit what was a very small plantroom space allocated for the DHW system.

LDM made use of the architecture, which created a first floor overhang proving ground floor space suitable for the location of an Advenco L70 ASPH. The L70 is a high capacity air-to-water monobloc heat pump designed to provide high temperature hybrid domestic hot water (DHW). Rated 70kW for typical UK operation at 5°C but climbing to a maximum 90 kW from a single compact unit, the L70 is perfect for larger scale commercial applications such as student residences and can also operate as part of a cascade installation for projects demanding greater capacity.

Given the proximity to the student accommodation and consideration of noise LDM conceived and fitted a timber acoustic enclosure and ducting to direct away airflow. This improved the already relatively quiet operation of the L70 ensuring residents would not be disturbed by the daily operation, especially at night.

When an ASHP is used to generate preheat for the building's water greater storage, greater efficiency is achieved at lower temperature. This necessitates the use of larger water storage to avoid system undersizing that fails to meet daily demands. Given the limited plant room space, Advenco helped specify a compact system option consisting of a MSS1000 cylinder acting as a system buffer for the ASHP and a high-

grade a stainless steel SSB1000 storage buffer tank used to expand the dump load capacity of the water heating installation. A MB0050 Plate Heat Exchanger and pump kit, connected the preheat with the top-up heating. A GLC 750 glass lined indirect tank that supports working temperatures of up to 85°C and 10 bar system pressure was paired with a compact wall-hung ARDENT S36 electric boiler creating an indirect water heater.

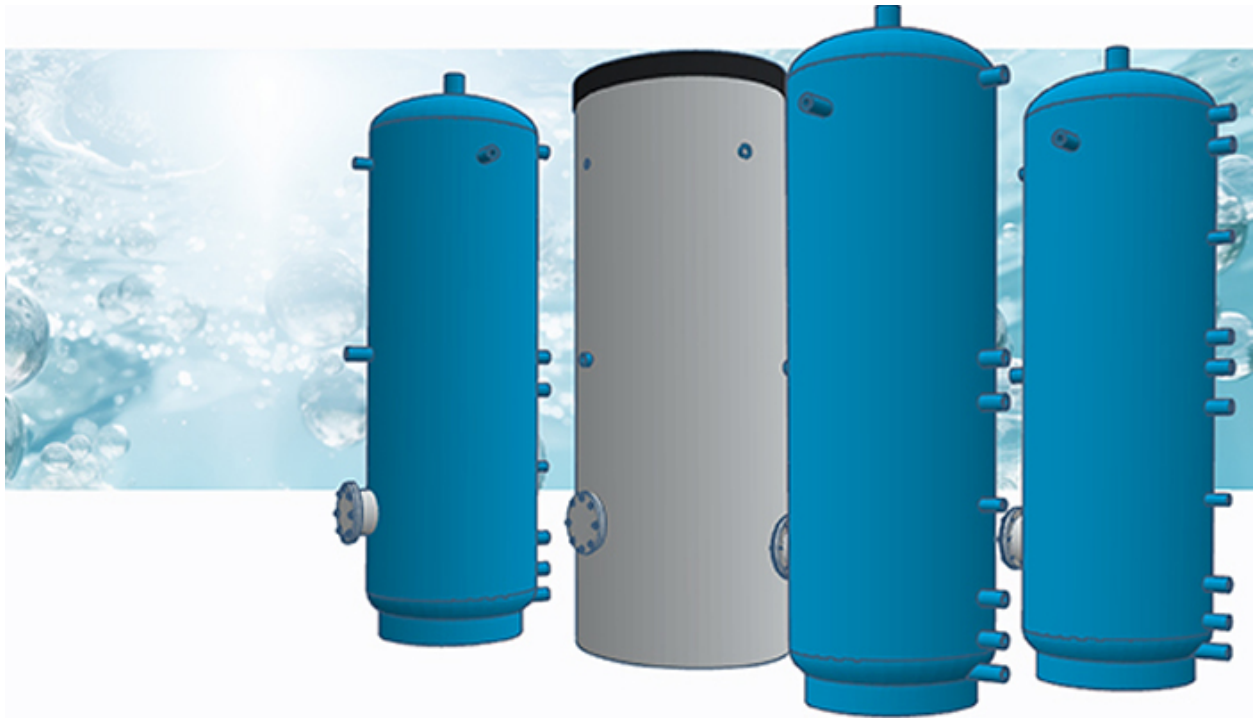


The ARDENT provides additional, sustainable electric system top-up year round ensuring consistent water temperatures that meet the safe operational demands of a commercial system, and is able to achieve temperatures as high as 80°C if faster recovery is required. Heating within the ARDENT is provided by three 12kW elements, smartly balanced to supply up to 36 kW of heating. In typical operation, balanced use of the elements extends the operational lifespan of the ARDENT, and should an element fail at any point the other two will continue to maintain operational temperatures for built-in resilience and assured hot water delivery. This versatile system lends itself perfectly to student-residential living, where demand for hot water can vary considerably over the course of a day and the week as residents exhibit a mixed work/life pattern.

The system was supplied, installed, and commissioned on schedule for handover to the University in September ready for postgraduates to move in at the beginning of the Autumn term. With students now living in the new accommodations and having had a chance to experience the system which was conceived, designed, and built by the developer, Advenco and LDM, the University of Bath is “extremely pleased with the results.”

Looking forward, the University is considering future developments across the campus over the course of the next five years with the thought of rolling out additional ASHP-based systems, based on the Scala system, that can help the University actively address decarbonisation and drive greater sustainability throughout its other campus buildings.

GLC & GLT Receive An Upgrade for 2024



This month Adveco upgrades its GLC & GLT hot water tanks for 2024. The GL range of off-the-shelf cylinders offer low-cost carbon steel shells with a high-quality inorganic enamel lining for commercial hot water projects (DHW) projects requiring direct electric heating, buffer storage, indirect heating or preheat.

Single coil GLC and twin-coil GLT models from 200 to 1000 litres, now incorporate an additional connection located on the upper side of the cylinder providing greater versatility for installation. This addition ensures there are ports available for all common ancillary items, allowing the hot water tanks to be used effectively in a wider range of applications.

“For the majority of applications, where cylinders are installed as part of an unvented hot water system, the new connection will serve as a dedicated port for a temperature and pressure relief valve, allowing other high-level connections on the front and top of the tanks to be filled with thermostats or sensors and anodic protection,” said Bill Sinclair, technical director, Adveco. “This will help ensure a system operates efficiently and is sufficiently protected from corrosive effects of mains water to provide increased longevity.”

Insulation jackets provided with the 750L and 1000L models have also been upgraded to a removable design manufactured from soft polyester fibre. This the new insulation provides equal or better thermal performance for heat retention to minimise standing losses from the tanks, while enabling removal to temporarily reduce the diameter of the hot water tanks for the purposes of manoeuvring and installing the tanks in areas with limited access.

Designed to work with water conditions typically encountered across the UK, GL vessels are suitable for use in systems with maximum working pressure up to 10 bar and temperatures up to 85°C and include as standard a magnesium sacrificial anode (pre-fitted in 300-1000L variants), and a temperature gauge (pre-fitted in tanks up to 1000L). Carrying both WRAS and Kiwa’s KUKreg4 certification of product compliance with the water supply (water fittings) regulations for England,

Scotland, and NI, GLC, GLT and GLE offer a quick, cost-effective and assured option for the replacement of vessels in ageing commercial hot water systems.

Adveco GLC

Carbon steel calorifiers with a single fixed indirect heating coil at low level are designed to serve as indirect water heaters or preheat vessels. Available in 200 to 3000 litres capacities, GLC can also accept a 180mm 3-36kW electric immersion.

Adveco GLT

GLT carbon steel calorifiers are designed to serve as indirect water heaters. The tanks, also available in 200 to 3000 litres capacities incorporate two fixed indirect heating coils, one each at low and high level, designed for use with two separate heat sources.

Adveco GLE

Designed to serve as buffer vessel or electric water heater, the Adveco GLE is available in a range of sizes from 200 to 5000L to support larger all-electric systems. Compatible with a wide choice of direct electric immersion heater options available from Adveco, the GLE supports duty immersions from 3 to 36 kW, as well as secondary supplementary immersions from 3 to 6 kW for additional heating, or as backup to ensure continuity of service from a single unit.

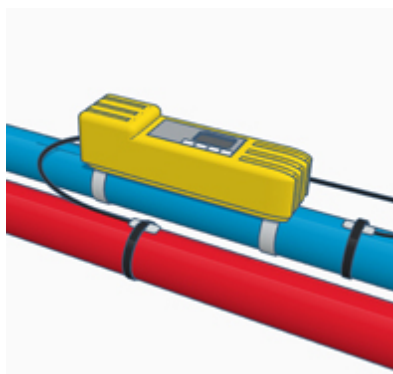
[LEARN MORE ABOUT THE GL FAMILY](#)

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.



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.



ARDENT Electric Boiler

ARDENT is designed to serve as an indirect water heater or heating system. Wall-hung and oostanding 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

FIND OUT MORE

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](#)

[Offsite Constructed Packaged Plant Rooms](#)



01252 551540



Enquiries@adveco.co

Adveco Ltd, is the hot water specialist with more than 50 years of expertise in the building service industry. Adveco Ltd 2023. Unit 7 & 8 Armstrong Mall, Southwood Business Park, Farnborough, Hampshire, GU14 0NR