



Welcome to Adveco's February newsletter,

Valentine's may still be a couple of weeks away, but we already want to start spreading our love for sustainable water heating! This month we take a look and how the provision of DHW services can be a formative element of a circular economy as the UK sets about creating a net zero future. We are pleased to report on recent work at The Range's 'excellent' new distribution centre that has embraced Adveco FUSION to supply hot water to support thousands of workers. For those planning to retrofit existing building hot water systems we also take a look at the GL cylinders, designed to make the process much easier...

Sustainable Retail - The Range Embraces FUSION Water Heating



In January 2024, market leading mechanical and electrical contractor WM Building Services Limited (WMBS) secured the contract for the new build of a retail goods and produce distribution centre for The Range. One of the UK's most recognised and fastest growing leisure and garden centre retailers, The Range has more than 200 stores and has recently acquired both the Wilko and Homebase brands, intending to rebrand as many as 70 of the latter's properties as new The Range Stores.

A key function of this planned expansion, the new distribution centre for The Range & Wilco would be located in Stowmarket, Suffolk. With 356,600 square metres of warehousing space and the ability to manage 200 plus trucks, the site would be considerably larger than its typical stores. This new building was also to align with the retailer's aims of increasing sustainability and reducing lifetime carbon emissions from its' properties.

Envisioned as a two-phase project, the build of the distribution centre would commence with a clearly outlined base build then a full package fit out of services within the limits of the building. External attachments to the site building, such as packaged plant rooms, would not be a viable

option for this project. Part of the building specification required provision of domestic hot water (DHW) for canteen and kitchen facilities, within the distribution centre building, to support the expected 1650 employed across the vast site.

Recognising a need for specialist assistance, WMBS contacted commercial hot water experts Adveco to advise on how to meet criteria in the specification. Upon evaluation and recognising first, that the building specification would not incorporate any gas connections typically employed in larger commercial structures and secondly, the need to maximise internal space for distribution functions, Adveco proposed a low-carbon, electric only response based upon its FUSION T packaged electric water heating system. This approach would help contribute towards the building securing its BREEAM certification.

Adveco's FUSION is an award-winning range of low-carbon, all-electric water heating applications for commercial projects with a wide choice of pre-sized packaged variants. The system comprises an ARDENT electric boiler mounted to a specially configured high-pressure ATSI Stainless Steel cylinder. This provides a compact, highly efficient, low-carbon electric water heater that can be then combined with Adveco's FPi32 Air Source Heat Pump (ASHP) and dedicated controls and metering, for further carbon reduction and operational cost savings. This FUSION T variant is capable of cutting emissions by up to 56% compared to equivalent gas-fired alternatives.

For new buildings, such as The Stowmarket Distribution Centre, which must now meet regulatory changes preventing new gas connections, FUSION electric water heaters provided a clear response that was cost-effective, more sustainable and could meet the large-scale daily demands for hot water.

Adveco supplied 12 kW ASHP variants of FUSION packaged with 500L twin-coil cylinders and ARDENT Premium 24kW Electric Boilers, with all necessary controls. The ASHPs feed into the lower coil of the ATST cylinder, supplying low-carbon system preheat. The electric boiler, plumbed into the upper coil supplies necessary top up heat to achieve safe working temperatures for the commercial application, as well as meeting peak demands as and when required. The purpose designed controls smartly manage the balance between the two heat sources, to maximise efficiency and reduce consumption of electricity, reducing associated carbon emissions and controlling operational costs. There is also a highly significant level of redundancy introduced by having a balanced secondary heat source. This reduces strain on all system elements, cutting wear and extending the operation life of the system and reducing maintenance demands.

WMBS were extremely "impressed and satisfied" with the FUSION application, swift progression of the service and ultimate outcome, which contributed to the building securing an 'Excellent' BREEAM certification. The hot water system is now "running well and efficiently on site" with notably lower carbon emissions, which will continue to decrease over the life of the building, as the electricity grid undergoes further decarbonisation.

FUSION ELECTRIC WATER HEATING

Water Heating In A Circular Economy



The circular economy offers a promising approach to decarbonising the UK's HVAC sector as it continues to play a pivotal role in the nation's energy consumption and carbon emissions. Focusing on resource efficiency, waste reduction, and sustainable practices is essential if we are to achieve the nation's net zero target by 2050.

The circular economy is an economic model that aims to keep products and materials in use for as long as possible, at their highest value. This contrasts with the traditional linear economy, where resources are extracted, used, and then discarded. In a circular economy, waste is minimised through strategies like reuse, repair, refurbishment, and recycling. This approach not only reduces environmental impact but also creates economic opportunities and enhances resource security.

For buildings, the circular economy principles can be integrated into the design, construction, and operation phases. This involves selecting materials with low embodied carbon, designing buildings for adaptability and futureproofing, and implementing energy-efficient technologies. Additionally, buildings can be designed for deconstruction, allowing materials to be recovered and reused at the end of their lifecycle.

In the context of heating products for commercial buildings, the circular economy can be applied in several ways. One approach is to extend the lifespan of existing heating systems through regular maintenance, upgrades, and efficient operation. This reduces the need for new installations and minimises the associated carbon emissions. Additionally, manufacturers can design products with modular components that can be easily repaired or replaced, reducing the need for entire system replacements.

Addressing energy supply is also critical, the circular economy can contribute to the decarbonisation of the heating sector by promoting the use of renewable energy sources and energy-efficient technologies. This includes the development of district heating systems that utilise waste heat from other processes, as well as the integration of renewable energy sources like solar and wind power.

The circular economy and DHW in commercial buildings

There are a number of ways in which the circular economy can be applied to the provision of domestic hot water (DHW) within a commercial-grade building. Most notably being how energy efficiency is addressed.

This can range from the specification of high-efficiency products, especially [boilers and water heaters](#) that actively reduce the amount of energy needed to heat water, leading to lower carbon

emissions and reduced operational costs, through to entire system designs. These will utilise renewable energy sources like solar or heat pumps to heat water further reducing reliance on fossil fuels and lowering carbon emissions. Smart controls also play an important part in these DHW applications allowing for more precise temperature regulation, improved efficiency and scheduling, enabling better optimisation of energy usage based on occupancy patterns.

The installation of a system also has an impact, where proper insulation of pipes and tanks prevents heat loss, improving energy efficiency and reducing the need for excess heating.

As well as an application designer, Adveco is also a manufacturer/supplier, so much effort is expended on addressing material efficiency. Investing in high-quality, durable equipment, such as cylinders constructed with [stainless steel](#), reduces the need for frequent replacements, minimising waste and extending the lifespan of materials. Designing systems with [modular components](#) allows for easier repair and replacement of individual parts, reducing the need for entire system replacements. Developing strategies for the recycling and reuse of components at the end of their lifecycle will also help divert materials from landfill and recover potentially valuable resources.

Adveco has also designed and developed systems which enable heat recovery and continues to explore best practices for capturing and utilising waste heat from other processes, such as cooling systems or other processes that can potentially supply preheat to water, reducing the energy required for heating. Much of our recent work has focussed on how to best apply [heat pumps](#) to extract heat from the air and transfer it to the water heating system, providing efficient, consistent pre-heating year-round to meet a building's low-carbon hot water demands.

Water conservation is also a function of a circular economy, from product to system to building. This sees the reuse of wastewater for non-potable purposes like toilet flushing or landscape irrigation can significantly reduce water demand, as can installing low-flow faucets and showerheads to reduce water consumption without compromising performance.

At the system level for DHW, leak detection and repair is particularly important, and Adveco strives to ensure applications receive regular maintenance checks and prompt repairs. One way to make a real difference is to smartly identify any leaks from a water heater and mitigate both damage and wastage. It's an area we are currently working hard to further develop.

Delivering DHW within the circular economy depends on a collaborative approach, from design, through manufacture and supply to end use. Collaborating with suppliers, manufacturers, and other stakeholders can facilitate the development and implementation of circular economy responses. Looking forward we expect hot water infrastructure between buildings to become shared, and even foresee neighbouring businesses or even communities reducing capital costs and energy consumption through shared use and services which deploy district heating systems which connect multiple buildings to a centralised heating source for potentially more efficient energy distribution and utilisation.

By adopting these strategies, businesses and organisations in the UK can significantly reduce their environmental impact, conserve resources, and lower operational costs associated with commercial hot water provision.

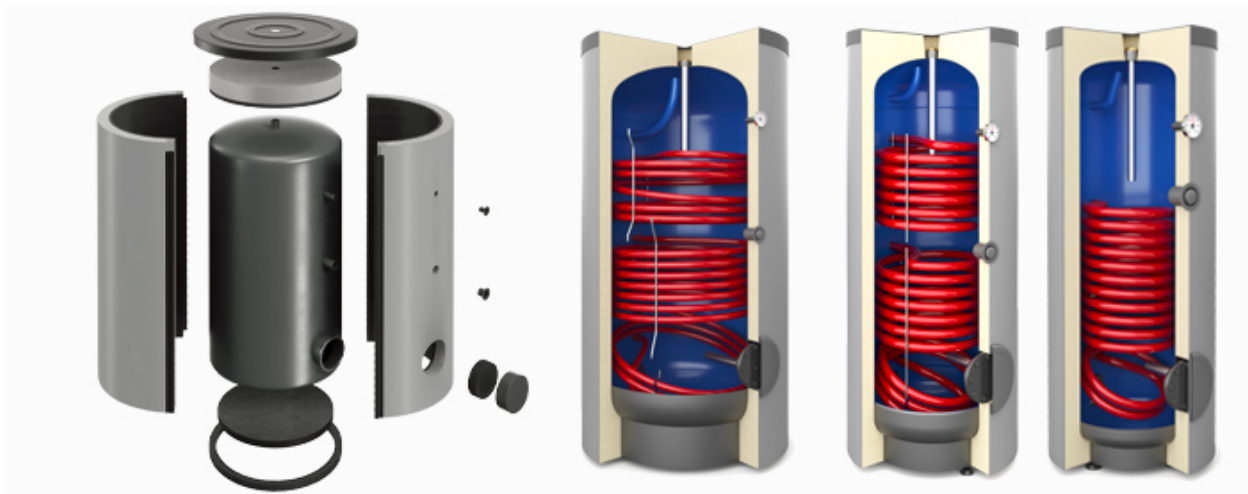
The circular economy offers a sustainable and economically viable approach to meeting the growing demand for hot water while minimising waste and promoting resource efficiency. The UK government has recognized the importance of the circular economy in achieving its decarbonisation

goals. In 2025, building legislation is expected to incorporate circular economy principles, incentivising the use of sustainable materials and practices in the construction and refurbishment of buildings. This legislation will likely include provisions for extended product lifespans, modular design, and the use of recycled or reclaimed materials.

By embracing the circular economy, the wider UK HVAC sector can significantly reduce its carbon footprint and contribute to a more sustainable future. This still requires collaboration between industry stakeholders, policymakers, plus commercial and public sector organisations to drive necessary innovation, promote sustainable practices, and create a circular economy that benefits both the environment and the economy.

NET ZERO & WATER HEATING

Retrofitting Hot water Systems With GL Cylinders



GL off-the-shelf cylinders provide a range of a 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.

Designed to work with water conditions typically encountered across the UK, GL range of vessels are suitable for use in systems with maximum working pressure up to 10 bar and temperatures up to 85°C. GL cylinders 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.

The Single-coil GLC and twin-coil GLT models from 200 to 1000 litres, 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 added to the GL range 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, This will help ensure a system operates efficiently and is sufficiently protected from corrosive effects of mains water to provide increased longevity.

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.

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

If you are working on a retrofit project and require a cylinder please talk to Adveco about your needs...

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ADVECO
HOT WATER SPECIALISTS

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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



ADV16-30W ASHPs

The ADV-W air-to-water heat pump range includes 16, 22 & 30kW (3 phase) and 10, 12, & 16kW (single phase) models that bring quality and efficiency to commercial domestic hot water systems. The ASHP can provide hot water output up to 60°C throughout the year for 55°C working flow.

FIND OUT MORE



ARDENT Electric Boiler

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

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Adveco 2025 Product Guide

Get the handy guide to Adveco's current product range for 2025

2025 PRODUCT GUIDE

ADVECO
HOT WATER SPECIALISTS

2025 **PRODUCT GUIDE**
Low carbon, electric and gas domestic hot water systems for commercial building projects

2050

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- [FPi R32 monobloc Air Source Heat Pump](#)
- [L70 Air Source Heat Pumps for larger projects](#)
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