



Winning

combination



The author

Martyn Bridges began his career as a heating and plumbing apprentice and has grown up with a strong knowledge of the technical side of boilers. He joined Worcester, Bosch Group in 1986 as a Technical Service Engineer and worked his way through the ranks to become Director of Marketing and Technical Support in December 2004.

Following the introduction of the domestic Renewable Heat Incentive (RHI), manufacturers have been challenged to create technologies that act as the next step towards a wholesale reliance on green energy. **Martyn Bridges** explains the next level of innovation coming onto the boiler market.

The incentive to take up efficient domestic technologies has gained momentum ever since the introduction of the Government's 2020 emissions targets. Alongside this, the RHI is in place as a solution to generate demand and literally incentivise the whole sector - installers, manufacturers and homeowners - to take up renewable technology. Undoubtedly, the industry has had lots of time to prepare for the introduction of the domestic RHI and, from a manufacturer's perspective, the transition towards a more sustainable provision of heating and hot water systems has formed a key part of product development.

With around 85% of all homes on mains gas, we perhaps aren't

ready for a fully renewable, low carbon electric heating solution as the fact remains that a high-efficiency boiler is the most reliable and effective way for us to heat the typical UK home. This has challenged the industry to offer a 'best of both' arrangement.

The accompaniment of a renewable technology alongside the latest boiler innovations ultimately gives the middle ground and the compromise needed for our variable climate and our relatively inefficient housing stock.

Combi innovation

In recent years, gas-fired boilers have been developed with heat exchangers and combustion systems that offer premium performance. In fact, efficiency levels around the 90% SEDBUK

level have become the norm. So to further enhance performance, manufacturers have begun to take things one step further in making a contribution towards efficiency credentials.

As a large proportion of a boiler's energy use is in hot water rather than space heating, there is scope to generate the hot water from gas and to supplement it with a renewable energy source such as solar thermal.

With this in mind, Worcester has invested in the design of a series of combination boilers that accept pre-heated water from a secondary source. These innovative appliances have an optional cold water inlet sensor connected to the cold water inlet pipe, and the boiler management system then controls the appliance

output dependent on the initial water inlet temperature, so as to avoid any temporary "overshoots" in hot water outlet temperature.

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Allowing pre-heated mains from a secondary source to be fed directly into a boiler will allow the boiler to subsequently use less gas as the same level of boiler output is not required to raise the incoming mains water to the required temperature.

In light of the Government's green initiatives, we are seeing

a number of renewable technologies come to market that lend themselves to a partnership with a boiler. Technologies such as air-to-water heat pumps that automatically maintain the best possible efficiency levels when operating in partnership with a boiler are likely to become increasingly influential. Such is the sophistication of some of these units that they can be programmed to select the most cost-effective option based upon localised temperature requirements and fuel tariffs.

With the RHI also rejuvenating the solar thermal market, this new generation of boilers will enable homeowners to optimise the 'free' energy provided by the sun. In the case of Worcester's CDi Compact boiler, with the optional domestic hot water combi pre-heat accessory fitted, the boiler will accept pre-heated water up to 60°C from solar as a secondary source, allowing it to be as economical as possible.

Historically, it has always been difficult to integrate solar water heating with a combi boiler because the nature of a combi is that it heats water instantly and operates without a hot water cylinder.

However, as solar panels heat water over the course of the day, and not necessarily in line with demand, there remains a need to store solar-heated water until it is required. By accepting pre-heated water up to 60°C, a boiler with such capability is only required to top up the water temperature as and when required. It is this innovation that helps to keep fossil fuel consumption to a minimum.

New-build potential

Away from Government schemes to incentivise renewables, stringent building regulations are also being written in attempts to cut carbon emissions and reach targets.

Part L of the Building Regulations has already pointed the way towards growth in the renewables sector with the introduction of a requirement for a 6% carbon improvement on the 2010 regulations. This requirement, which came into force last month, will support initiatives such as the Green Deal and RHI, and help to maintain momentum in the drive towards greener solutions for new homes.

As manufacturers are evolving alongside new regulations to create new hybrid solutions, it is important that installers play a role in communicating these to the homeowner at times of repair or during a replacement boiler installation. There really is no such thing as 'one solution fits all',



Modern 'renewables-ready' boilers offer homeowners increased flexibility for heating their houses.

and the onus is with the installer to consider the requirements of both the property and its occupants before recommending the most appropriate system.

'Renewables-ready' boilers can go a long way to cutting the homeowner's energy usage and helping the UK to reach its energy efficiency targets. It is time this potential is realised across the industry. ■

DID YOU KNOW?

Facts about the renewables market

- › Under changes to Building Regulations Part L that came into effect last month, new-builds need to achieve or better a fabric energy efficiency target in addition to a CO target.
- › Part L specifications have been strengthened to deliver 6% CO₂ savings across the new homes build mix (relative to Part L 2010).
- › High-efficiency alternative systems need to be taken into account before construction commences.
- › Under the new regulations, the guidance for insulation of circulation pipes within communal spaces is given greater prominence.