



Project Lead: Mixergy Limited

Funding:

Partners: Harlequin Manufacturing Ltd

£530,080.2

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The problem: The fundamental problem the project aims to solve is installation complexity

Heat pump installations are extremely complex, for a variety of reasons. Firstly, the wide range of interacting components with a conventional heat pump installation leads to long install times, with a high risk of commissioning problems and reliability issues post install. Secondly, there are large physical space requirements associated with conventional air source heat pump solutions include an outdoor unit and cupboard space. Thirdly, heat pump installations require larger radiators and upgraded pipework to accommodate higher flow rates; and finally, there is a different range of skills associated with installing a conventional heat pump system.

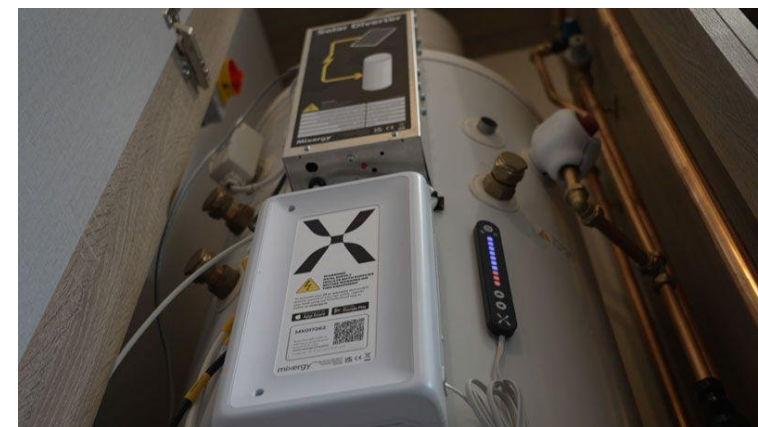
The solution

CUBEX will bring a modular heat pump solution to the UK market targeted at small homes and apartments which are difficult to decarbonise with conventional monobloc outdoor Air Source Heat Pump systems. By integrating a single thermal store (for provision of space heating and hot water) with a high performance and a R290 heat pump head unit, CUBEX will simplify installation whilst considerably reducing the overall system cost.

“ We are excited to be taking part in the Heat Pump Ready program to develop the next generation of heat pump technology. We will work with Harlequin to develop a heat pump-integrated thermal store that is more cost-effective and less hassle to install and maintain for small properties and tower blocks. This will allow wider heat pump adoption and accelerate our progress towards net zero. ”

Ren Kang

Head of R&D, Mixergy



CUBEX brings a compelling solution to smaller properties which struggle to accommodate incumbent monobloc air-source heat pump (ASHP) solutions available on the market today. Our unique selling point is that we replace a large ASHP with a single, integrated thermal store.

What are we going to do?

CUBEX will bring a modular heat pump solution to the UK market targeted at small homes and apartments which are difficult to decarbonise with conventional monobloc outdoor Air Source Heat Pump systems.

Why is this an improvement on current solutions?

CUBEX's solution will improve on current heat pumps solutions in a variety of ways. Importantly, CUBEX systems can be installed by conventional heating engineers, allowing us to target >50,000 units/annum by year three within this sector. It also has fewer interacting subsystems, so reliability and serviceability is enhanced and installation time is reduced by at least 50%. Finally, the CUBEX system eliminates the need for a buffer vessel on the central heating circuit through the use of a single thermal store which exchanges heat to both the domestic hot water system and central heating loop.

What would success look like?

The project is aiming to develop a range of 10 CUBEX systems with integrated heat pumps across 5 volumetric sizes and two power levels. This, combined with Mixergy's existing software platform, will provide customers a reliable, cost effective and efficient heat pump solution that is easy to install, and has a considerably smaller footprint than existing solutions.



How will this project help towards the target of installing 600,000 heat pumps per year by 2028?

By reducing capital cost, install time and space requirements, CUBEX will unlock the deployment of heat pumps at scale, especially for dwellings where monobloc heat pumps are hard to deploy, bringing the UK back on track towards 600,000 heat pump installs/annum and beyond.

The Optimised Solutions Development stream of the Heat Pump Ready programme supports the development of innovative tools, technologies and processes to overcome specific barriers to heat pump deployment in the UK. Wave 2 of this stream supports solutions aiming to improve the ease of heat pump deployment in homes that are 'complex to decarbonise', develop innovative solutions to enable heat pumps to be deployed in 'distress purchase' situations, improve performance of domestic heat pumps with low-GWP refrigerants and improve the domestic consumer experience of using and living with a heat pump.

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