

Increased heat pump efficiency - A winning solution

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Kidderminster based, Greengineering Limited, has won a competition to find innovative solutions for reducing CO2 emissions in social housing properties with a concept which can reduce the energy used by heat pumps by as much as 10%.

(Photo from L to R: Glen Barrowman, BECCI Project Manager, Peni Brudenell-Pryke & Kenny Gallagher, Directors of Greengineering Ltd)



The newly formed engineering R&D business, was one of the winning finalists in the **BECCI "Hard To Treat Challenge"**, run recently by the University of

Wolverhampton, with their innovation which is capable of improving the efficiency of various types of heat pump system, including air, ground and water.

The UK Government and others are promoting the use of heat pumps as a method of achieving 2020 energy and carbon reduction targets. However, to be successful this requires heat pump technology to be developed further and for the number of installations to increase rapidly. Some organisations are improving compressor performance with others using more environmentally friendly refrigerant gasses. Greengineering systems focus on alternative methods of improving the efficiency of heat pumps and will, initially, "bolt on" to existing technology.

Shortened pay-back on heat pump solutions

The original design was for a commercial application, but was scaled down for the BECCI competition. The design is a low-cost solution, facilitating a short pay-back period. For example, the energy consumed by a ground source heat pump installed in a new 3 bed semi-detached house is split approximately 50/50 for space heating and domestic hot water. Greengineering estimate that their system could reduce the energy consumed in this example installation by at least 10%.

By further reducing running costs of heat pumps, this system also tackles the fuel poverty issue faced by many housing associations, thus increasing the appeal of heat pumps.

The current widespread interest in district heating is another area into which Greengineering is keen to introduce their versatile solutions. The Greengineering systems are scalable from large commercial operations to individual domestic properties, including high rise buildings; individual flats or entire blocks.

Small but dynamic

This family business has a dedicated, dynamic team; with the experience to provide a professional and structured approach. Their combined hands-on experience includes various engineering disciplines including software, mechanical, hydraulic, electrical & electronic, hovercraft, solar-thermal and computer. Greengineering were also invited to submit a project for the **2014 Energy Globe Awards**.

Greengineering have prototypes to be incorporated into new installations or retrofitted to existing heat pumps. The more ambitious designs have increased efficiency but will require collaboration with heat pump manufacturers and installers.

Interested parties should contact [Greengineering](#).