

Sanyo wins environment award for pioneering ECO CO2 heat pump based on carbon dioxide

Written by Karl

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Sanyo Air Conditioners has won a major national award for its ground-breaking heat pump technology which runs on carbon dioxide refrigerant.

The company's ECO CO2 heat pump was presented with the Award for Environmental Achievement of the Year in the ACR News magazine awards held last month in London. Receiving the award at a presentation lunch held at Stamford Bridge, Chelsea FC's football ground, Bob Cowlard, Sanyo Air Conditioning sales and marketing general manager for Europe, said: "I am delighted to accept the award on behalf of the dedicated and enthusiastic Sanyo team behind the ECO CO2.

"It is independent endorsement of the technical achievement represented by the product and its outstanding environmental performance. With the era of cheap energy over, it is clear that the UK can only achieve its carbon reduction targets if transformational technology such as the ECO CO2 becomes mainstream.

He added: "The response of customers since its launch has been tremendous, and confirms that the product is not only technically advanced and light years ahead of the market, but on track to becoming an unqualified commercial success."

The system uses carbon dioxide (CO2) as the refrigerant, which has a major environmental advantage over other vapour compression heat pumps on the market that use potent greenhouse gasses as refrigerants.

The Sanyo ECO CO2 system is unique in being able to deliver hot water at up to 65deg C without the use of an inefficient electric booster heater.

The inverter-controlled systems – from 4.5 to 45kW capacity – consists of an outdoor heat

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pump unit, containing the compressor and CO2 refrigerant circuit, which supplies hot water to a thermal store.

The thermal store can vary in size according to system capacity. The ability of the ECO CO2 to connect to third-party thermal stores gives great flexibility in application, and enables it to become part of a complete integrated solution.

Stored energy can be used for domestic hot water or washing and can be directly connected to radiators or an under floor system for space heating. The system can also control external devices such as wood burners, solar hot water systems, and biomass boilers – enabling the creation of highly flexible bivalent systems for use in high efficiency, future-proof sustainable buildings.

At the heart of the system is Sanyo's ground-breaking carbon dioxide-based compressor, the world's first two-stage rotary compressor operating on R744.

Overall, the ECO CO2 produces around 50 per cent less carbon than traditional boilers.

Crucially, it eclipses conventional HFC refrigerant-based heat pumps in terms of both performance and environmental benefits.

Carbon dioxide is a natural refrigerant, with a global warming potential of 1 compared with several thousand for HFC-based refrigerants used in standard heat pump systems.