



HEAT PUMPS AS RENEWABLE ALTERNATIVE TO TRADITIONAL GAS FIRED BOILERS.

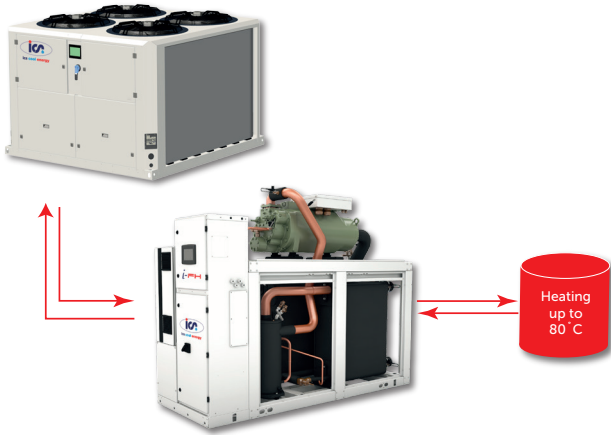


THE CHALLENGE

A public college was awarded funds as part of the UK Public Sector Decarbonisation Scheme (PSDS) to carry out heat decarbonisation and energy efficiency measures in three buildings located in their campus in central Britain.

Using an old heating system based on traditional gas fired boilers, they were looking for a more sustainable technology that could replace the old system and not only lower their carbon footprint, but also generate energy savings.

With rising energy costs and increasingly ambitious environmental goals in mind, heat pumps were chosen as the technology for the project.



THE RESULT

As a result of this project, the existing gas-fired boilers were replaced with heat pump systems and new centralized plant and distribution pipework to provide buildings with low carbon heating and hot water. The heat pumps use air and water as energy sources together with electricity. Looking at the Total Efficiency Ratio (TER) of the provided system we have improved the efficiency by 400% versus the previous boiler-based heating system.

The new system of air-source and water-source heat pumps in cascade configuration provides 600kW of Heating, generating the college annual savings of 790,000 kWh in energy consumption and 160 Tons in CO2 emissions.

THE SOLUTION

Following a detailed site and system analysis, our team proposed a cascade system combining air-to-water and water-to-water heat pumps, capable to provide 600kW of heating with up to 80°C of leaving water temperature – enough to fully replace existing gas boilers.

To further lower the environmental impact of the system, the selected units feature low global warming potential (GWP) R454B and R1234Ze refrigerants.

At ICS Cool Energy, we take pride in working hand in hand with our customers, listening closely to their needs and keeping their industries running. With the latest equipment to offer, we were able to support the college with heat pump technology to achieve their energy targets.

Dave Palmer, General Manager



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