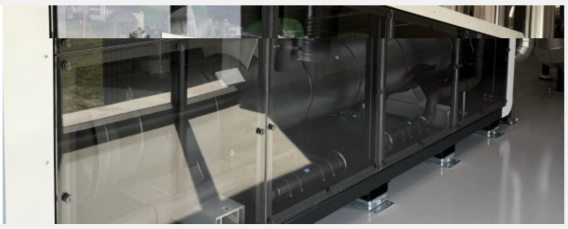
Lucy Dixon
16.08.2024



Sygehus Sønderjylland, a hospital located in Denmark, has partnered with Danfoss and district heating utility company Sønderborg Varme to reduce its carbon emissions.

Since the start of the energy crisis in 2022, companies across Europe have been looking for ways to reduce their reliance on fossil fuels and find more efficient ways of heating and cooling their buildings. Hospitals are no exception. However, unlike corporate entities, hotels, or restaurants, hospitals can't simply increase the price of their products to offset energy price increases. They must find a way to improve their buildings' energy efficiency and identify sustainable energy sources.

For Sygehus Sønderjylland, the drive to decarbonsze was about more than just financial savings. The hospital aimed to achieve carbon neutrality, and its management recognised the potential of combining heat recovery with district heating to reach that goal. Therefore, the hospital partnered with Danfoss and the local heating utility to explore ways to reduce both their energy bill and carbon emissions simultaneously.

The solution: unlock the potential of excess heat

The hospital installed two new energy-efficient heat pumps and an updated hydronic heating and cooling system to replace its gas- and oil-based heating system and accompanying boilers. The heat pumps, powered by Danfoss Energy Machines, provide the hospital with cooling through an integrated critical equipment and comfort cooling system. Each pump is equipped with four Danfoss oil-free Turbocor compressors, which provide exceptional efficiency, particularly for cooling applications, and are an ideal fit for cases with high cooling demand, such as hospitals. The expectations are that the hospital's annual energy consumption will be reduced by around 12,500 MWh. This equals the total heat consumption of around 740 average Danish households.

The hospital uses the heat recovered from the cooling system to meet its process and comfort heat loads. When the system generates more heat than the hospital needs, the heating utility – Sønderborg Varme – transfers the excess heat to the indoor climate for patients, staff, and the surroundings.

The results: from energy consumer to energy provider

According to **Martin Brander, Senior Business Development Manager, Sector Coupling Solutions, Danfoss**, this case is an excellent example of how communities can create sustainable energy systems:

> By capturing heat from the hospital's cooling system and channeling it into the local district heating network, the hospital transforms into an energy provider. It illustrates how we can design energy systems that meet both heating and cooling needs in a sustainable way.

The experiences gained from this project will also benefit other hospitals within the region, as Jesper Møller Iversen, Head of Finance and Planning at Sygehus Sønderjylland, points out:

> With great pleasure, we wave goodbye to fossil fuels at the hospital in Sønderborg and welcome the green transition. As a large organization, we are pleased to be able to make our contribution to this important transition. We expect to gain a lot of

Sønderjylland, points out:

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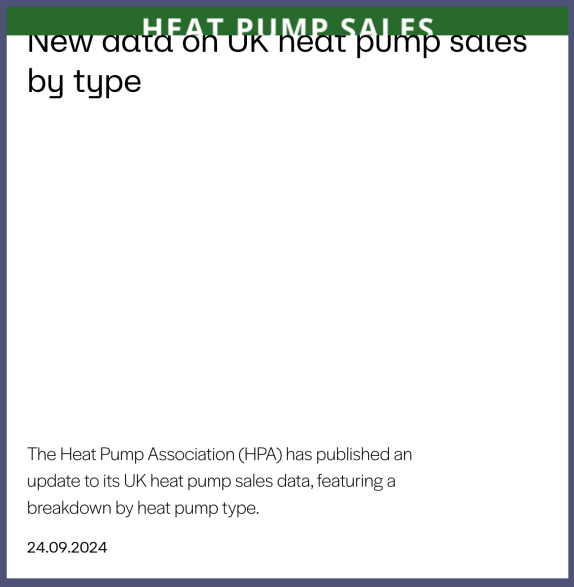

New data on UK heat pump sales by type

The Heat Pump Association (HPA) has published an update to its UK heat pump sales data, featuring a breakdown by heat pump type.

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