

Sustainable cooling solutions:

Heat recovery in datacentres for sustainable urbanisation

CATEGORY:

Datacentres

THE CONTEXT:

Digitalisation is one of the major global megatrends which will have a direct impact on the demand for cooling, as datacentres need stable, cool temperatures to operate safely. By 2030, the number of devices connected to the Internet will have reached 125 billion globally, nearly 5 times more than in 2017. In Europe alone, datacentres are projected to use 4% of the total annual energy consumed in the EU, roughly twice as much as in 2007. On average, 40% of the energy consumed in datacentres is used for cooling. While the efficiency of datacentres has become a top priority for operators and cities alike, the heat generated by the servers and the cooling equipment is still largely wasted today, although it could make a significant contribution to smart and fossil fuel free urbanisation.

SUSTAINABLE COOLING SOLUTION:

- State of the art sustainable cooling facilities use heat pumps to provide efficient data centre cooling while recovering and upgrading the heat for redistribution via a district heating network to connected homes, industries and offices.
- Carrier Aquaforce heat pumps provide chilled water to cool digital equipment whilst delivering heating water at up to 85°C to the local district heating network. The units offer customers a long term solution using HFO, R-1234ze refrigerant with zero Ozone Depletion Potential (ODP) and a Global Warming Potential (GWP) <1
- At the Stockholm Data Parks facility, Carrier Aquaforce units serving a 10 MW data centre contribute to heat around 20,000 modern residential apartments (55 kWh/m²/year)

BENEFITS:

- Datacentres may become truly integrated into smarter cities where their contribution goes beyond simply powering the digital revolution
- When using renewable electricity, datacentres can become net climate positive, for example a 10 MW data centre could reduce annual CO₂ emissions by 8,000 tonnes
- High temperature heat pumps using excess heat from datacentres for heating purposes contribute to greatly reducing the use of fossil fuels.

TAGS:

- Energy efficiency
- Synergies with heating
- Sustainable cooling
- Heat recovery
- Heat pumps

GENERAL INFORMATION

NAME OF THE COMPANY: Carrier AB

CONTACT PERSON: Tim Ashton

HYPERLINK TO LEARN MORE ABOUT THE SUSTAINABLE COOLING SOLUTION:

[https://stockholmdataparks.com https://stockholmdataparks.com/customer-references/](https://stockholmdataparks.com/https://stockholmdataparks.com/customer-references/)

