ENGINEERING
TOMORROW

Danfoss News

Highlights from Danfoss District Energy products and solutions

Talk Green. **Walk** Green.

Join us on the journey to efficiency

Danfoss Nordborg factory site: towards zero emission factories

Factories are the beating heart of the industry, a sector that accounts for 39% of all global energy-related carbon emissions. The challenge for factories all over the world is to meet growing demands for production while curbing emissions.

Danfoss is Denmark's largest industrial company. Danfoss' solutions are unique, but their Nordborg factory in Denmark is not. With 250,000 m² of production, administration and testing facilities, the Danfoss Nordborg factory site mirrors factory sites around the world.

We continue our journey towards becoming carbon neutral[1] in our global operations by 2030. As a first step, we became carbon neutral at our headquarters campus in 2022, and Danfoss' own solutions have been instrumental in achieving significant energy savings.

The Nordborg factory shows how factory sites can become part of the local energy grid, providing lower energy prices for the local community and at the same time reducing consumption of natural gas significantly.

1. in scope 1 and 2, that are emissions from purchased energy and from sources owned or controlled by Danfoss.

The significant reductions in emissions at the factory site in Nordborg has been made possible by focusing on three key initiatives.

Firstly, energy is only used in the amounts needed. A number of technical projects and improvements have been made to deliver the significant savings in energy consumption.

Secondly, energy savings have helped lower temperatures in the factory site's heating network significantly from 145° C to 67° C. In addition to fewer transmission losses, lower temperatures in the heating grid make it possible to recover and reuse a significant amount of excess heat from manufacturing processes, such as ventilation, cooling and compressed air.

Thirdly, the remaining heat demand is sourced by reusing excess heat, green district heating and natural gas, the demand for which has been reduced significantly. The remaining emissions from natural gas will be covered by biogas certificates from a local biogas plant until it is phased out. Electricity demand is mostly covered by solar panels and through corporate power purchase agreements with suppliers of carbon neutral energy.

However, the journey is not yet complete.
There are plans for the Danfoss factory to further reduce carbon emissions, which will make certificates redundant.
An on-campus data center will produce excess heat of an estimated 1MW that will be recycled through the local heating grid, but also supplied to the entire region. When the Danfoss factory produces more heat than needed, the heat will be sold to the city-wide district energy system to the benefit of local citizens and companies.

In 2022, we reached carbon neutrality in scope 1 and 2 at our largest production facility, the Nordborg campus in Denmark. The 250,000 m² campus achieved neutrality through reduction of energy consumption, reuse of excess heat from processes and data centers, and sourcing of green electricity. Unavoidable emissions from leakage of refrigerants and company cars have been offset. Since 2007, the energy consumption for heating has been reduced by 78%, and the demand for electricity has been reduced by 50%.

"Carbon neutral factories benefit the climate and the bottomline. The solutions are there to make it happen"

Kim Fausing,
CEO of Danfoss

Danfoss Titan

Combines best-in-class substations with digital twin technology

Add a new and data-driven dimension to the district energy network with:

- **Reliable and continuous cloud commissioning**
- **Best in class settings – ensuring longer station lifetime**
- **Optimum ΔT unlocking data driven energy efficiency**
- **100% Danfoss component-based station ensures highest quality and reliability**

This means you can go from assumption to knowledge. From reactive to proactive. From noise to harmony. For always reliable commissioning, time savings, and no complaints or callbacks.

Want to know more scan the QR code:

Reduce heating bill and CO_2 footprint

Heat Recovery Unit

Want to know more scan the QR code:

The Heat Recovery Unit is designed to recover the excess heat from CO_2 refrigeration installations. Recovered heat can be used for in-store heating purposes or sold to a district heating utility network. The Heat Recovery Unit comes prefabricated for optimized performance and easy installation. It can be configured in many ways to suit the size and needs of each individual supermarket.

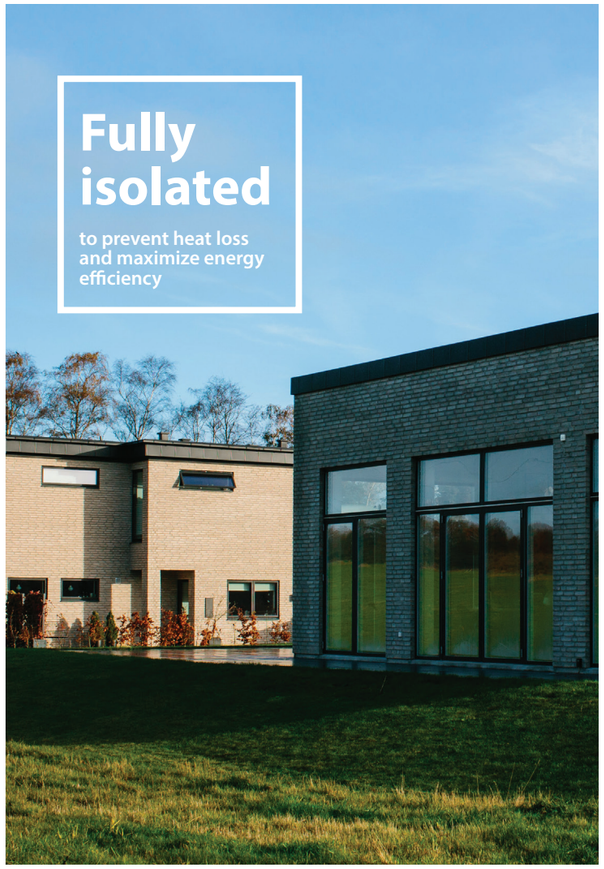
Standard unit layout allows to prepare connection piping inside the building before station is delivered. Piping prepared with automatic welding machines ensure highest possible welding quality.

The right villa station

For small size buildings for heating and domestic hot water installations.

Stations in the VXe series are fully insulated units for space heating and domestic hot water (DHW). They are especially suitable for many kinds of heating systems, such as radiators or floor heating. All core components in the stations – including the heat exchanger, electronic controllers and valves – are engineered and manufactured by Danfoss exclusively for these villa stations and designed to ensure the lowest return temperature.

Want to know more scan the QR code:



True energy optimization.

From people to production.

Lean on us ™

Buildings account for a staggering 40 percent of the world's energy consumption

And as cities grow, we're on a mission to bring that number down by helping you create smarter, cost-effective, and more energy-efficient buildings.

Danfoss Leanheat® Suite optimizes your energy production, distribution, and consumption through an end-to-end software and services solution.

Want to know more scan the QR code:

Leanheat® Building: The solution powered by AI and IoT ensures lower power peak loads and primary-side return temperature.

Leanheat® Monitor: A web-based solution which enables remote monitoring, control and optimization of your district energy system.

Leanheat® Network: The thermo-hydraulic modeling tool designed for the planning, design, and operation of district energy networks.

Leanheat® Production: Software that utilizes forecasting, planning, and optimization techniques to improve the production of district energy.

So, do you need help finding the right solution?
Lean on us.

Danfoss

Danfoss Turbocor® TGH

The Danfoss Turbocor® TGH high-lift compressor is the world's first oil-free, variable-speed centrifugal compressor with expanded operating range for high-lift applications such as heat pumps, heat recovery and air-cooled chillers in hot ambient climates. TGH has a 288 kW nominal capacity rating and up to 6.2 pressure ratio.

Want to know more scan the QR code:

Virtus

Shaped for the future

iSET iNET

Danfoss' digital empowered heavy-duty pressure and flow controllers.

Optimal hydronic balance and perfect temperature control are the key to maximize efficiency of heating and cooling networks. This also means that you are saving energy, money and improving end-users' comfort.

To help you achieve your goals, Danfoss developed a new range of **heavy-duty differential pressure and flow controllers** named **Virtus**. They are designed for the most demanding district heating and cooling applications. The broad range of controllers offers perfect control and stability, are designed for big flow capacities and are compact sized for easy installation.

Want to know more scan the QR code:

What makes Virtus stand out are the **digital actuators iSET** and **iNet**. iSET enables substation efficiency optimization by stabilizing the ΔT in the connected buildings. And iNET offers intelligent network balancing, ensuring reduced pumping costs and enables peak load management by remotely controlling ΔP at single branch levels.

20%

of energy saving potential using hydronic balancing controls

ECL Comfort 310

Comfort controllers

Ensure comfort and convenience for heating, cooling, ventilation and domestic hot water systems with our ECL Comfort controllers. The controller is for high requirements and equipped with several communication interfaces and extension options. It's the perfect fit for every district energy application by using Application Keys and provides all the functionalities required to optimize energy efficiency. The favorite controller among the experts!

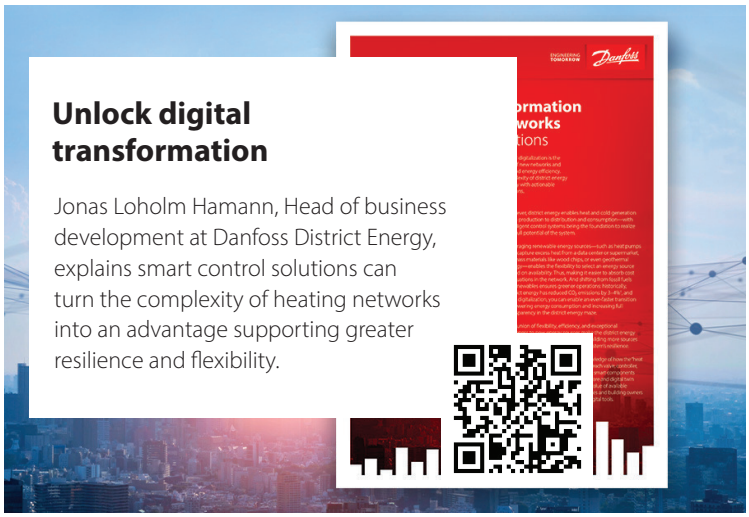
Want to know more scan the QR code:

ENGINEERING TOMORROW

Let's unlock the grid

What does it take to unlock the grid's full potential? As the complexity of today's district energy networks increases, so does the potential they hold for ensuring cost-effectiveness, energy efficiency, and ultimate resilience. With the industry's only full product portfolio combined with our hardware domain knowledge, Danfoss' end-to-end solutions deliver actionable insights and optimization - from production to distribution, and consumption.

Learn more about Danfoss District Energy solutions



Unlock digital transformation

Jonas Loholm Hamann, Head of business development at Danfoss District Energy, explains smart control solutions can turn the complexity of heating networks into an advantage supporting greater resilience and flexibility.

Accelerating the global transition to net zero

District energy offers a fast track to decarbonizing heating and cooling in the building sector. Find out how this article by Oddgeir Gudmundsson, Director at Danfoss Climate Solutions.

Designing a resilient district energy infrastructure

District energy has the potential to help cities harness local, renewable energy sources to meet demands for resilience, reliability, and energy efficiency.

Building sustainability: the road to net zero

In this episode, Jonas Hamman, Head of Business Development at Danfoss, join Chris Lavery to discuss how heat networks can deliver an innovative, reliable and green heating solutions for buildings.