

CASE STORY



THE CUSTOMER

Høje-Taastup Fjernvarme and VEKS, one of Denmark's largest district heating companies.

THE CHALLENGE

Store cheaply-produced district heat generated at four connected Combined Heat and Power (CHP) plants and three waste-to-energy plants for distribution when production is expensive.

THE SOLUTION

Transform a former agricultural area in Høje-Taastrup, on the outskirts of Copenhagen, into a thermal energy storage facility.

THE HEAT EXCHANGERS

Three high-capacity SWEP B649 brazed plate heat exchangers, connected between the power plant and the district heating network in Høje-Taastrup.

THE RESULTS

Heat for 170,000 households in the Copenhagen metropolitan area, delivered through 26 local district heating networks.

Innovative Danish district heating project features SWEP technology

A thermal energy storage facility

A former agricultural area in Høje-Taastrup, on the outskirts of Copenhagen, has been transformed into a thermal energy storage facility to support the metropolitan area's district heating network. 'Heat-pit storage,' as it is known locally, stores heat from four connected Combined Heat and Power (CHP) plants and three waste-to-energy plants. Heat is stored when it is cheap to produce, so that it can be distributed later, when it is expensive. This enables the CHP plants to optimize their production according to fluctuating electricity prices and also makes it possible for waste-to-energy plants to produce more heat during the summer months. Heat-pit storage also reduces peak loads at local boilers, which are typically powered by fossil-fuels.

The thermal energy storage facility is a joint venture between the consumer-owned local district heating operator Høje-Taastrup Fjernvarme and VEKS, one of Denmark's largest district heating companies, which oversees renewable energy projects across Europe. The facility is comprised of a deep pit, fitted with a plastic liner that can withstand temperatures of up to 95 degrees Celsius, and an insulating lid. It has a volume of 70,000m³, and a charging and discharging capacity of 30MW.



APPLICATION DATA	
BPHE type	V120T
Heat load	35 KW
Primary media temp. (in/out)	-80°C
Secondary media temp. (in/out)	-61°C/-65°C
V120Tx120 dimensions	25x243x284.8mm
V120Tx120 weight	60 kg

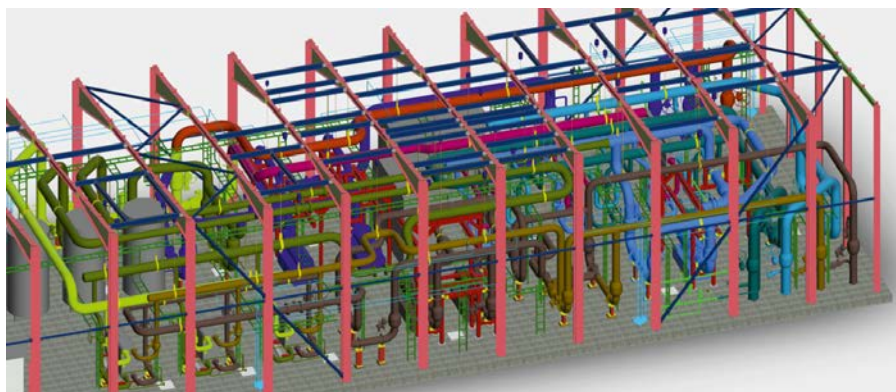
More about Høje Taastrup Fjernvarme

Høje Taastrup Fjernvarme a.m.b.a is part of Greater Copenhagen's integrated district heating system. Høje Taastrup District Heating's supply area includes Høje-Taastrup Municipality and, since 2023, Greve Municipality.

More about the Copenhagen metropolitan district heating system

The system comprises:

- Four CHP plants with a total output of 2050 MW
- Three waste-to-energy plants, with total output 44MW
- Two steel-tank heat accumulators, which providing a total of 66MW
- Two transmission companies that deliver heat to 26 local district heating companies in the Copenhagen metropolitan area
- 170,000 households served

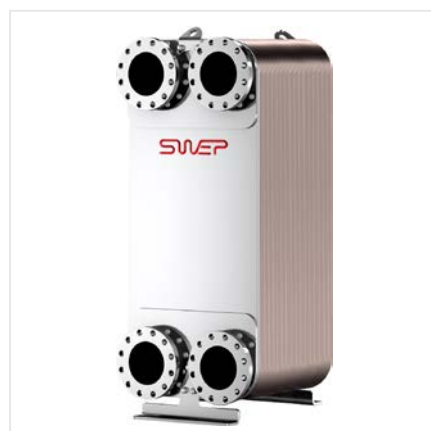


The role of SWEP BPHEs

VEKS and Høje Taastrup Fjernvarme commissioned Damgaard A/S to build the facility and chose SWEP to supply brazed plate heat exchanger technology for the project. Three high-capacity SWEP B649 BPHEs are connected between the power plant and the district heating network in Høje-Taastrup. Gasketed plate heat exchangers are used as intermediate units between the thermal storage tanks and the SWEP units.

Why choose SWEP?

According to Lars Andersen, of Damgaard A/S, the builder and project manager for the facility, "SWEP's B649 brazed plate heat exchangers offer unprecedented opportunities to build larger, elegant, and more cost-effective energy transfer stations with capacities well above what was previously available." Morten Stobbe, Vice President VEKS, summarizes the initiative: "I hope that there are others who will consider the project as a good example of a broad-based cooperation improving the total energy system and contributing to the fact that we will be able to reach the finishing line in terms of green transmission."



SWEP 649.