

With warmth

from Heleneholm

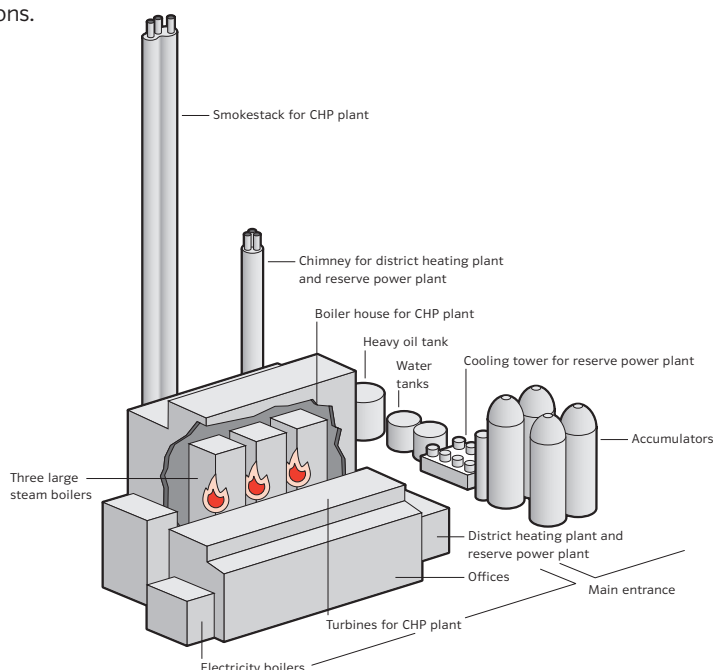
The Heleneholm plant, which is Malmö's largest heating facility, is of key importance to the development of district heating in the area. A combined heat and power (CHP) production plant, Heleneholm has the capacity to meet 40 percent of Malmö's district heating requirements and 20 percent of the area's electricity requirements.

The facility's investment in natural gas rather than oil as its main fuel has led to a sharp reduction in emissions of nitrogen, carbon dioxide and sulfur to air. Today, oil is used only as a supplement. The installation of flue-gas condensing units is another measure that has improved the plant's operating efficiency – whereby higher levels of heat and electricity are generated by the process – and simultaneously decreased emissions of nitrogen dioxide.

Heleneholm CHP plant, Malmö

The Heleneholm facility consists of the following units:

- the main facility comprises a combined heat and power (CHP) plant, with steam boilers, turbines and condensing units for heat and power production.
- a district heating plant is used as a supplementary facility.
- accumulator tanks in which district heating water is stored to equalize production variations.



Did you know that...

- ... the Heleneholm smokestack, which is 130 meters tall, is one of Malmö's highest structures?
- ... during a normal year, the Heleneholm facility can supply about 50,000 normal-sized detached houses and 130,000 apartments (82m²) with heat and simultaneously meet the electric power demands of 14,000 electrically heated detached houses?
- ... the interior of the largest smokestack at the Heleneholm facility contains a concealed art treasure from 1991 in the form of graffiti produced by the artists "Pike" and "Dwayne"?
- ... the façade decoration on the main building symbolizes a Colombian native campfire, with stylized flames in different hues?

District heating

In densely populated urban areas, district heating is essential for providing a sustainable and competitive heating service that also has the least possible impact on the environment. Before the introduction of district heating, property owners used individual boilers to heat their premises. District heating has enabled several hundred chimneys to be replaced by one or just a few. And, to a large extent, it has also enabled coal and oil to be replaced by waste heat, biofuels and gas. In two decades, district heating has led to carbon dioxide emissions from heating being reduced by around 11 million tons, which is equal to 20 percent of the current emissions from the whole of Swedish society.

Development of district heating in Malmö

Malmö is one of more than 570 communities in Sweden that have invested in the expansion of district heating. Construction of Malmö's district heating system started in 1951. Today, approximately 90 percent of all properties in Malmö use district heating. As much as 60 percent of Malmö's district heating system is based on renewable energy in the form of waste, biofuels, discharge heat, waste heat and solar energy. The remaining 40 percent is based on natural gas and oil, with the latter accounting for less than 1 percent.

A total of eight base-load stations deliver heat to the district-heating network. There are also several peak-load and reserve facilities. The district-heating network consists of slightly more than 1,000 kilometers of outgoing and incoming pipelines.

Facts about Heleneholm

Type of facility

CHP (combined heat and power) plant.

Year of construction

1960, Heleneholm district heating plant, 1966, CHP plant.

Location

Eriksfältsgatan 24, Malmö, southern Sweden

Customers

Private householders and companies connected to the Malmö district-heating network.

Technology

Steam boiler and supplementary units for oil, diesel, etc. Flue-gas condensing units installed in 2000 have increased efficiency by 10 percent and reduced emissions of nitrogen dioxide by 55 percent.

Fuels

Natural gas supplemented by heating oil.

Primary unit

CHP plant: Four steam boilers (3x150 MW, 1x70 MW), two condensing units (120+230 MW of heat), two turbines (40+90 MW of electricity). In operation throughout whole heating season.

Other units

District heating plant: Six gas/oil boilers. In operation mainly during spring and autumn.

Reserve power plant:

Five diesel units.

Accumulators: Four 2,500 m³ accumulator tanks.

Capacity - heat

CHP plant: 300 MW; maximum capacity of 400 MW can be achieved by reducing electricity production.

District heating plant: 6x25 MW

Capacity - electricity:

Main plant can produce 130 MW of electricity.

Storage capacity

600 MWh of heat/10,000 m³ of hot water.

Reserve power

8.5 MW of electricity

Environment

District heating production at Heleneholm contributes to more efficient energy utilization through the use of flue-gas condensing and the high utilization rate of the energy content in the fuels during CHP production.