

Optimizing District Heating Through Pit Thermal Energy Storage In Denmark



Copenhagen-area heating companies Høje-Taastrup District Heating and VEKS are tasked with providing customers cheaper and greener energy. They need to cover peak loads without fossil fuels by means of

a 'buffer storage' which also optimizes energy production. This allows the plants to be operated more economically with the ability for energy to be stored when it is cheap to produce.

To enable this, in Høje-Taastrup they have a 70,000m³ heat pit storage – a hole in the ground to store hot water. The idea is to store hot water when it is cheap to produce and to discharge it during peak times or when production is expensive. Thermal heat storage is the least costly way to store energy and enables the heating sector to be climate neutral and more efficient.

To maximize the benefits of pit thermal energy storage (PTES), water here reaches 90°C. To improve function, the inside and cover surface is lined with Agru's PP-HTR membrane – a new high temperature-resistant polypropylene with an extended lifetime at 95°C. Agru's longtime partner G quadrat installed the liner, leakage control system and specially designed insulating floating cover, ensuring a long service life and safety for operators and the environment.

This new pit storage optimizes the operation of the whole district heating network in Copenhagen, creating value for both the heat producers and consumers, who all benefit from the green transition away from gas and oil.

Company: Agru
Kunststofftechnik GmbH
Client: G quadrat GmbH for
energy companies Høje-Taastrup
District Heating and VEKS
Location: Høje-Taastrup,
Denmark
Application: Improving
greener heating supply by
lining thermal energy storage
pit with high temperature-
resistant geomembrane
Benefits: Cost savings, energy
savings, optimizing heating,
greener energy transmission



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To find out more, contact Agru by emailing Franz Luhamer at lf@agru.at.

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