



Skanderborg Fjernvarme A.m.b.a. Wood Chips Project 2010

- ◆ 2 wood chips fired boilers of each 10 MW
- ◆ Flue gas condensation further 2-4 MW each boiler line
- ◆ Heat production 140,000 MWh / Year
- ◆ 50-60,000 ton wood chips
- ◆ Wood chips heating is CO₂ neutral and displaces 20,000 ton of CO₂
- ◆ The wood chips come from local forests
- ◆ Boiler building 600 m²
- ◆ Chimney 60 m high
- ◆ Wood chips storage hall 5,000 m³
- ◆ Hot water Storage tank 4,000 m³.



Project History

The project proposal for the construction of two wood chips boilers were sent to Skanderborg city council on the 7th of April 2003. After the consultation period, the city council approved the project on the 28th of January 2004.

The Danish Energy Agency accepted the project on the 22nd of January 2005.

In June 2009 a cooperation agreement between Aarhus municipality, Renosyd (wast incineration plant) and Skanderborg District Heating Plant was signed, including among other things the establishment of wood chips boilers.

The wood chips production covers 140,000 MWh/year and replaces coal-fired heat from the Studstrup Power Plant.

Wood chips heating is CO₂-neutral and reduces the annual CO₂-emissions by app. 20,000 t. The project consists of two boilers of each 10 MW.



The wood chips boilers are Danish produced and supplied by Weiss A/S. Combustion grates and ovens were produced in Sønderø Funen, and the boilers are manufactured by Danstoker in Herning.

The storage tank holds 4,000 m³ of water and is 25 m high. The tank equalizes the difference between the current heat production and the heat consumption.

The tank contains an energy amount of 240 MWh and can be charged and discharged with a capacity of

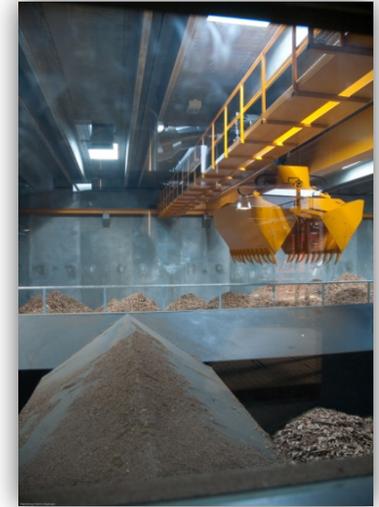


10 MW. The water table of the tank is elevation 85 and keeps the pressure in the entire district heating system.

The wood chips contain up to 55 % water. The first process in the wood chip boiler is to dry up the wood chips. The water evaporates in the flue gas.

In the condensing towers the flue gas is cooled with the district heating return water so that the moisture condenses and the energy of the water vaporization is recycled.

The condensed heat provides two to four MW per boiler depending on the moisture content of the wood chips.



The size of the wood chips store house is 900 m² and includes an unload silo of 250 m³ and a store room of 5,000 m³.

The stock capacity corresponds to one week's production at maximum load.

At max load 10–12 trucks arrive daily. The two travers cranes in the store room operate automatically and can handle up to 225 m³ wood chips per hour.

The wood chips supplies originate from forest care and thinning in the nearby area based on contracts with three suppliers for the next three years. 75 % of the annually burned 50–60,000 tons of wood chips have a transportation distance of less than 50 km.

The 60 m tall chimney is founded on the ground floor in the boiler room and further up through the roof into the sky. The chimney contains 5 flues. Two for the wood chips boilers and three for the oil boilers.

