

Biomass fired CHP plant

One of Denmark's largest biomass fired combined heat and power (CHP) plants is located in the Aarhus area and was put into operation in spring 2017. It is a vital part of the Municipality of Aarhus' Climate Strategy, which has replacing fossil fuels with sustainable energy as one of its cornerstones.

The plant delivers 20% of the district heating in the Aarhus area and is hereby a great contributor in making Aarhus self-sufficient when it comes to green heat.

TECHNOLOGY

The plant is primarily fueled with straw and in some situations a mixture of straw and wood chips. The plant is traditionally built with a known and well-tested technology with some innovative additions and the latest technologies are used to fully utilize the fuel. The leftovers (ashes) from the fuel is only 4%, which is sent back to the farmers and used as fertiliser. The emission of harmful substances from the plant is kept at an absolute minimum.

SYNERGIES

The plant is established next to Waste Centre Lisbjerg in order to harvest the possible synergies, especially through shared facilities. The Waste Centre is constituted by a waste-to-energy plant, a recycle center, centers handling hazardous, construction and garden waste as well as several smaller waste management facilities.



Source: AffaldVarme Aarhus

FACTS:

- Condensation of flue gas increases the efficiency .
- Electricity generation: 37 MW (62,000 households' annual consumption)
- Heat generation: 77 MW (38,000 households' annual consumption)
- Fuel: 230.000 tons per year if only fueled with straw
- Each bale of straw weighs 600-700 kilos.
- Storage capacity: 67 hours or 3,000 bales of straw
- 50% of the fuel can be replaced with wood chips.

PARTNERS:

Site development	Arkil
Oven, boiler & flue gas cleaning	Burmeister & Wain Energy
Lead consultancy services – CHP	COWI
Lead consultancy services – district heating	NIRAS
Architects	Friis & Moltke Architects
Turbine incl. generator	Doosan Škoda Power
Straw handling system	Qubiga
Wood chips handling system	Lachenmeier Monsun

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