

HERNING KRAFTVARMEVÆRK

COFIRING GAS AND WOOD CHIPS

Plant description

In 2002 the Danish utility company DONG Energy converted the 89 MWe natural gas-fired Hering Kraftvarmeværk (CHP plant) into cofiring natural gas and wood chips.

The conversion consisted of establishing new wood sampling system, new receiving pit for unloading truck (truck max 120 m³), new chipping plant including disc chipper for whole logs (log diameter max 550 mm), new belt conveyors, metal separator, disc screen, crusher and new 14,000 m³ indoor storage. From storage the wood chips is feed through 2 travelling screw reclaimers and belt conveyors to 75 m³ boiler silos (2). From each silo 3 lines feed wood chips through pneumatic spreaders to the new water-cooled vibration grate.

The injected wood chips is primarily burnt in suspension. Larger particles fall down on the grate where final combustion takes place. The furnace is designed with a characteristic "gas throat". The boiler is also equipped with new ducts, fan, slag conveyor and ash conveyors. The boiler performance data is only marginally affected. Corrosion effect and fouling level will be investigated the next two years.

The technology is well proven and by far the cheapest and fastest way to introduce wood chips into power production.

The plant was commissioned in October 2002 and is now in commercial operation.



Main plant data

Year of commissioning	1982 (coal-fired)
Electricity capacity	89 MW
District heating	174 MJ/s
Fuel	Natural gas/woodchips
Water content in wood chip	20-60% max
Wood chip consumption	47 t/h (42% water)
Annual wood chip consumption	200,000 t
Annual gas consumption	42 million Nm ³
Boiler thermal 60-85% load	130 MJ/s wood chips and 51–117 MJ/s gas
Boiler thermal 100% load	280 MJ/s gas only
Steam flow	118 kg/s
Superheated steam	115 bar/525 °C
Annual ash/slag consumption	1400 t

Services provided by DONG Energy

DONG Energy has been responsible for the project. All engineering services (electrical, mechanical and civil) were provided by DONG Energy. DONG Energy was responsible for overall plant performance and the complete functioning of the plant including project management with full responsibility for technique and economy, design of all mechanical, electrical and civil installations, environmental approvals, contact to authorities, supervision of erection and commissioning of the plant.

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