

Biomass-fired Power Plant (5.4 MW) Wilmersdorf – Germany



Description of order:

General contractor for the entire plant (EPC contract)

Client:

Otto-Ruediger Schulze Holz- und Baustoffrecycling GmbH & Co. KG
Wilmersdorf

Contract value:

19.7 million Euro

Contract period:

2003 – 2005

Technical Data:

Fuel

- Type of fuel: Biomass (wood category A1–A4)
- Heating value: 11 – 22 MJ/kg
- Design value: 14.2 MJ/kg
- Particle size: 200 x 100 x 50 mm
- Fuel flow rate: 55,000 t/a

Boiler

- Incineration heat capacity: 25.4 MW_{th}
- Steam parameters: 44 bar(a), 425 °C
- Steam flow: 27.5 t/h
- Feedwater temperature: 110 °C
- Type of incineration: Water cooled pushing grate with feeder charging
- Type of boiler: Four pass vertical boiler with natural circulation

Fuel gas cleaning plant

- Design according to the 17th BImSchV
- The plant consists of cyclone separator, reactor with lime hydrate dosing (lime hydrate and hearth furnace coke dosing in case of high concentration of pollution), fabric bag filter, induced draft fan
- NO_x reduction by urea solution spraying into the furnace chamber (SNCR)
- Flue gas flow rate: 49,700 Nm³/h
- Dust content after fabric bag filter <10 mg/Nm³
- The Emission values are below the limits according to 17th BImSchV, partly substantially below.

Steam turbine

- Extraction-condensation turbine
- Electrical power: 5.4 MW_{el}
- Steam parameters: 44.0 bar(a), 425 °C
- Rotation speed: 13,000 rpm

Cooling plant

- Air cooled condenser with ventilator
- Cooling medium: Air

Chemical water treatment plant

- Treated well water
- Demineralisation plant on the reverse osmosis basis
- capacity: 2.0 t/h
- The waste water of the Chemical water treatment plant is completely used in the Flue gas cleaning plant.