

REFERENCE SHEET

Biomass Thermal Power Plant | A&U Wielsbeke





Biomass fired power plant with bubbling fluidized bed technology

The CHP plant in Wielsbeke is another reference for DIEFFENBACHER Energy's technical expertise. Owing to its low emissions and high fuel flexibility, a BFB firing system was implemented for this project. The plant, with a maximum firing capacity of 90 MW, utilizes waste wood A1–A4 according to the German Altholzverordnung. Beside wood chips, the plant can be fired with up to 50 % wood dust which is separately injected into the combustion chamber.

This way, the plant owner has a high flexibility to react on fuel market prices and fuel availability. Beside 20 MW of electric output of the condensing steam turbine (with air cooled condenser), the CHP supplies 30 t/h of MP steam (via turbine bleed steam and secondary generator) and up to 10 MW heat to a thermal oil system for nearby consumers.

Despite the very low NOx emission limit of 77 mg/Nm³ (at 11% O2 dry) in Belgium, the plant is equipped with a SNCR system only. This is only possible by using the low NOx BFB combustion technology. Additionally, a conditioned dry flue gas cleaning system with ash recirculation is foreseen. All ashes from the boiler and the flue gas cleaning system are collected and stored separately to optimize the disposal costs.

Scope of Supply

- Fuel dosing system for wood chips and dust
- Steam boiler with integrated bubbling fluidized bed firing system
- Steam turbine, air cooled condenser, balance of plant
- Flue gas treatment with additive dosing system
- Operation and control system
- Boiler house and machine house including facade and roof
- Final two superheater bundles made from austenitic, corrosion resistant steel

Technical Data	
Firing capacity	90 MW
Electrrical Output	20 MW
Thermal output to external consumer	32 MW
Steam flow (MCR)	100 t/h
Steam pressure	75 bar (a)
Steam temperature	460°C
Fuel	Waste wood AI-AIV, wooddust
Country	Belgium

