



## BIOMASSA ITALIA

Crotone, Italy

### WOOD-CHIP FIRED BOILER PLANT

In the spring of 1998 Biomassa Italia made a contract with the Italian company Carlo Gavazzi about the building of a complete, wood-chip fired boiler plant in Crotone in southern Italy. The contract was made on the basis of a CIP electricity contract.

The plant generates steam for a turbine, from which the power is delivered to the public grid.

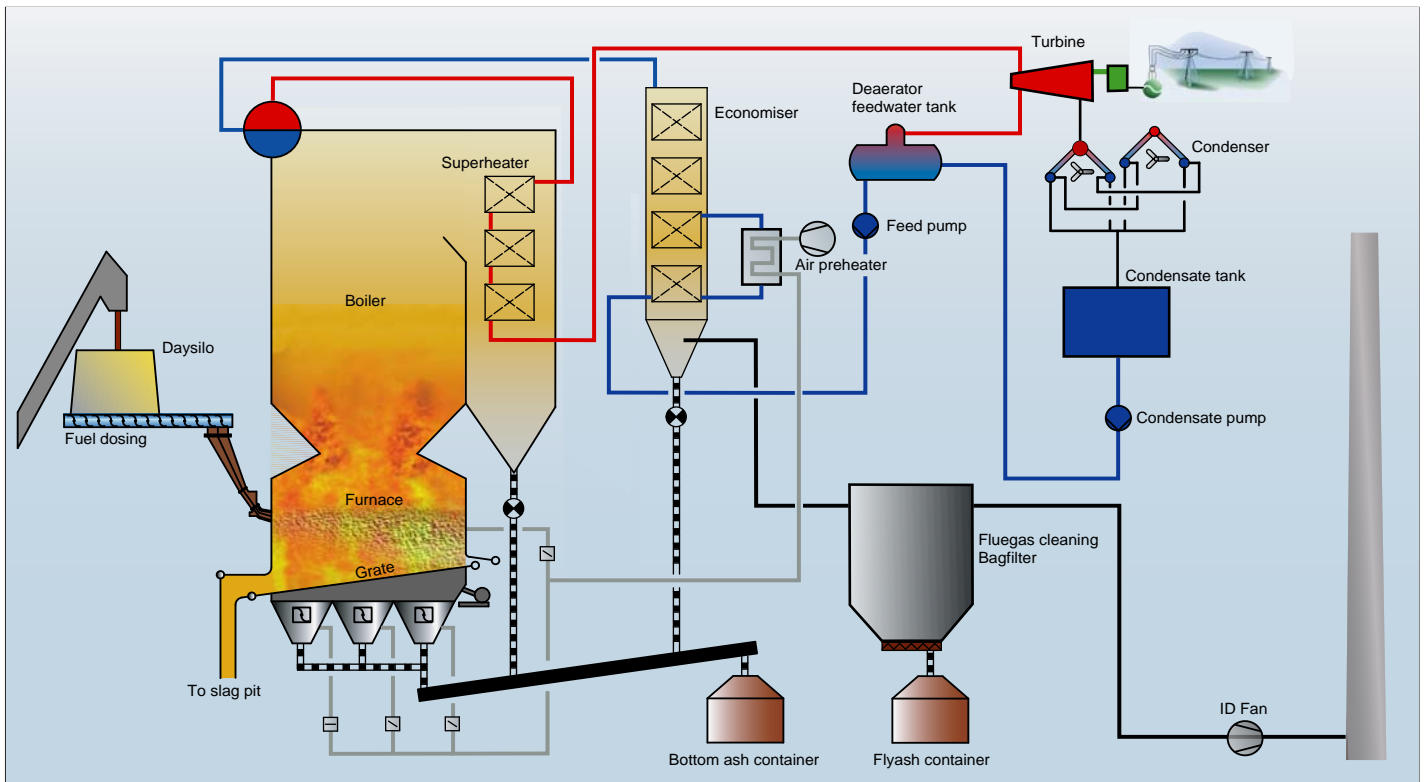
The fuel is delivered to the plant from the local area in the rough and is subsequently processed into wood chips.

As sub-suppliers to Carlo Gavazzi, Babcock & Wilcox Vølund A/S (BWV) have delivered the boiler with economiser and complete combustion equipment, including fuel feeding. The Italian company MTH has delivered the whole fuel processing and handling system.

The turbine plant was delivered by Franco Tosi and ATS has delivered the flue gas cleaning.

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Wood-chip fired boiler plant



The plant is equipped with a bi-sectional water-cooled vibrating grate for combustion of wood chips.

The boiler, which has natural circulation, consists of a furnace and two passes. The superheater sections are placed in the second pass. Furthermore, there is a free-standing economiser. The boiler and economiser are provided with steam-driven sootblowers for cleaning purposes.

The fuel feeding is performed by three pneumatic throwers, which receive the fuel from a common silo. At the bottom of the silo there are 6 screw feeders, which adjust the fuel input on the basis of a signal from the DCS System.

The design fuel has a moisture content of 35% and the plant burns approx. 18 t/h wood chips

The bottom ash from the grate is first taken into a submerged slag conveyor and subsequently to the slag containers. The fly ash from the boiler rear pass and from the economiser is taken to a separate ash collector.

## Plant data

Nominal capacity fuel	18,3 t/h at 35% moisture
Max. cont. capacity fuel	19,7 t/h
Steam pressure and temperature	53 bar, 450 °C
Steam output at MCR	55 t/h
Feed water temperature	120 °C
Boiler efficiency	85 %
Electricity output	12 MW

## Guaranteed emission limits (hourly mean values)\*)

CO	50 mg/Nm <sup>3</sup>
NO <sub>x</sub> (as NO <sub>2</sub> )	200 mg/Nm <sup>3</sup>
TOC	10 mg/Nm <sup>3</sup>

\*) Reference: 11% O<sub>2</sub> and dry gas.



**B&W** babcock & wilcox vølund

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