AET Biomass Boiler

The AET Biomass Boiler concept is based on 30 years’ experience of steam generation and biomass combustion.

This experience has been amassed from a large number of plants, which have the following advantages:

- Very high availability
- Steam data and steam quality suitable for turbine operation
- High boiler efficiency
- Fulfilment of strict emission requirements
- Flexibility
- Continuous operation at full load
- Low maintenance costs
- Long operating time (> 8000 hours) between shutdowns for manual cleaning of heating surfaces – this also applies for demolition wood.

These Characteristics Are Based on The Following Features:

- Gas-tight and fully-welded water tube boiler
- Very limited refractory in furnace
- Tall furnace with long residence time
- For waste wood, empty radiation pass for cooling the flue gas before superheater
- Vertical flue gas pass to ease collection of ash
- Unheated downcomers
- Good, natural circulation even under extreme operating conditions
- Effective steam separation in the drum.

The boiler pressure parts are designed in accordance with accepted European norms and standards. This applies to the selection of materials, calculations of wall thicknesses, production, and certification of welders as well as quality assurance of the finished product.

The furnace is tall and slim in order to obtain a long residence time and good turbulence resulting in good mixing of unburned gases and combustion air. This ensures efficient combustion with low emissions.

A tall furnace also ensures good circulation of water and steam in the panel walls.

Minimal refractory is used in the furnace to prevent ash deposits and slag formation.

From the furnace, the flue gas flows into the upper part of the radiation pass and continues towards the superheater passes, passing a bottom hopper and allowing coarse ash particles to be separated from the flue gas. The collected particles, containing unburnt material, are re-injected into the furnace.

The superheaters are arranged to allow flue gas and ash particles enough time to be cooled below the ash melting point before inlet to the superheaters and to allow ash particles to fall freely down through the heating surface.

The economiser is placed as a separate unit and is provided with heating surfaces consisting of plain or finned tubes.
The Biolacq Energies project, in Lacq, is a biomass-fired CHP plant of 54 MW, that utilises forestry wood, and clean, uncontaminated residues from wood processing.

Read more about Biolacq

Tilbury Green Power is a 125 MW waste wood-fired plant, which commenced operations in 2017.

Read more about Tilbury Green Power

JG Pears – Newark is a 42 MW MBM-fired cogeneration plant, which commenced operations in 2018.

Read more about JG Pears - Newark

Akuo Energy - CBN is a 63 MW wood-fired cogeneration plant, which commenced operations in early 2019.

Read more about Akuo Energy - CBN

The 49 MW Zignago Biomass power plant in Italy, owned and managed by Zignago Power s.r.l., belonging to the Marzotto family empire, has since its installation in 2013 been running with a very high availability (98.8%). The plant utilises wood residues and agricultural waste such as straw, miscanthus and maize.

>Read more

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