

BIOMASSE KRAFTWERK GÜSSING GmbH & Co KG

**Biomass power plant Güssing
(Limited Partnership with ltd. company
as General Partner)**



The stores of fossile energy suppliers are getting shorter; on the other hand, a greater consciousness for the problems caused by the "Greenhouse effect", have both caused a stronger interest in electricity created from biological matter.

The Treaty of Kyoto and the EC White Paper ("Energy for the future: Renewable energy") are both important milestones. Electricity from organic matter is neutral in CO₂ and substitutes dependency on energy imports with local creativity. For Güssing in Southern Burgenland, effective energy economy has not just been a slogan, but reality since years.

Güssing is a "European Centre for Renewable Energy". One of the largest biological matter-fired long distance heating system and a RME station for the production of bio-diesel were also erected and are underlining the importance of this kind of energy for Güssing.

New type of power station

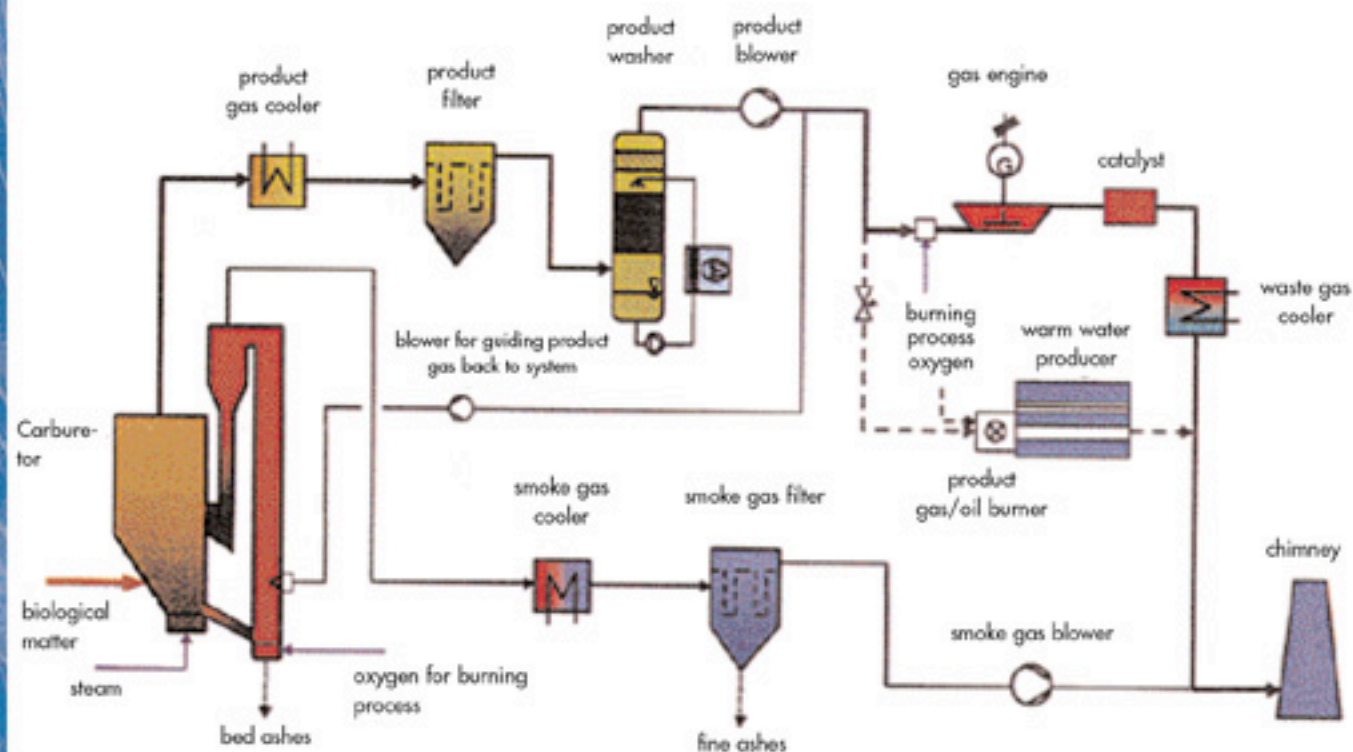
To make the production of electricity from organic matter also possible in small, decentralized power-stations, a new type of station was first realized in Güssing. Here a system of gassification is used which is of advantage as power-energy-link compared to burning systems.

In the bio-matter power station of Güssing, from 1760 kg of wood per hour 2000 kW electricity and 4500 kW long distance heating energy are created.

To realize this project from the idea to the working product, the partners Austrian Energy as the builder, scientists of the TU Vienna, the EVN and the long distance heating company of Güssing linked to the RENET network and developed this new, economic and technically mature system of power-energy link basing on gassification of organic matter.

Research & development

Babcock Borsig Power
Austrian Energy
Technical University Vienna
long distance heating
Güssing
Repotec
Jenbacher Energy
Begas
EVN



The process

Gasification - steam gasification

The heart of the system, a VORTEXT steam gasificator, consists of 2 connected VORTEX systems. In the gasification chamber biological matter is gassed, adding steam. At 8500 C Vapour instead of air as medium creates a nitrogen-free, little-tar gas with a high heating value. A part of the remaining coke is used as holding matter of heat energy over the bedding sand and transported into the burner. The created energy is needed for the keeping-up of the gassing process. Smoke gas is released extra, the warmth of it is used for the long-distance heating.

Gas cooling and cleaning

Product gas must be cooled and cleaned to ensure the function of the gas engine. The energy created thereby is again used for long-distance heating. After this, the gas is freed from dust in a fabric filter. The following washer reduces tar, ammoniac and acid gas parts. By a special system all these remains can be redirected into the process, so that neither waste nor waste water are produced.

Gas engine

The engine creates electrical energy from the chemical gas energy. But also the warmth of the engine is turned into long-distance heating energy. So there are created efficiency percentages up to now unthinkable of in such processes. The efficiency is 25 - 26% in electricity; the complete efficiency (electricity, warmth) is even over 85%.

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