

Case Study



Güssing Biomass Power Plant



Client	Capacity	Location	Operational
Güssing Power Plant	1964kWe & 2490kWt	Güssing, Austria	2002

Manufacturer	Packager	Type	Primary fuel
GE Jenbacher	GE Jenbacher	1 x 1964kWe JMS 620 GS-S.L	Wood Gas

SITE DESCRIPTION:

A brand-new type of plant was constructed in Güssing to enable wood-fired energy production in small-scale, local power plants. The new plant uses a fluidised bed gasification reactor, which produces a low-tar product gas with a high calorific value. The average composition of the gas is 40% H₂, 24% CO, 23% CO₂, 10% CH₄, 3% N₂ and the calorific value (Hu) is 3.0 kWh/Nm³. The gas is cooled and the dust it contains is removed by means of a fabric filter. A scrubber then reduces the concentrations of tar, ammonia and acid components.

The GE Jenbacher gas engine converts the chemical energy in the product gas into electrical energy, while waste heat produced by the engine is used for district heating. This allows for efficiency levels that were previously impossible with biomass energy generation. The electrical efficiency of the plant as a whole is between 25% and 28% and overall efficiency (electrical and thermal) even reaches values of over 85%.

The power plant not only uses wood to generate energy - an ecologically sustainable fuel - but also meets the standards for emissions and operates without producing effluent. Using biomass means that it is possible to prevent thousands of tonnes of environmentally harmful carbon dioxide being released each year - and that is just in Güssing.



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