

Input materials

Various animal and plant by-products with different heat values may be used for the thermochemical conversion (gasification):

- 1 Dry chicken manure..... ca. 12 MJ/kg
- 2 Digestate from biogas plants..... ca. 14 MJ/kg
- 3 Sugar cane ca. 15 MJ/kg
- 4 Straw ca. 17 MJ/kg
- 5 Wood ca. 18 MJ/kg
- 6 Rapeseed cake ca. 21 MJ/kg



Environmentally friendly, climate neutral and reliable:
electricity and heat from chicken manure.

The new biomass thermochemical converter (gasifier unit) from Big Dutchman generates energy through innovative thermochemical conversion (gasification) of biomass from e.g. chicken manure, digestate from biogas plants or sugar cane. *The clou:* apart from nitrogen, all constituents relevant for fertilisation are preserved in the resulting ashes. This way – independent of wind and sun – a real dual purpose is served and the conflict between »food or fuel« effectively eliminated.



150 kW thermochemical converter (gasifier unit) after final installation and inspection. Conveyor belt (pellet feed charge), control unit, thermochemical converter (gasifier), gas cooling and cleaning (from left to right).



Big Dutchman

Big Dutchman International GmbH
Tel. +49-4447-801-0 · Fax +49-4447-801-237
big@bigdutchman.de
www.bigdutchman.de

State 03/10



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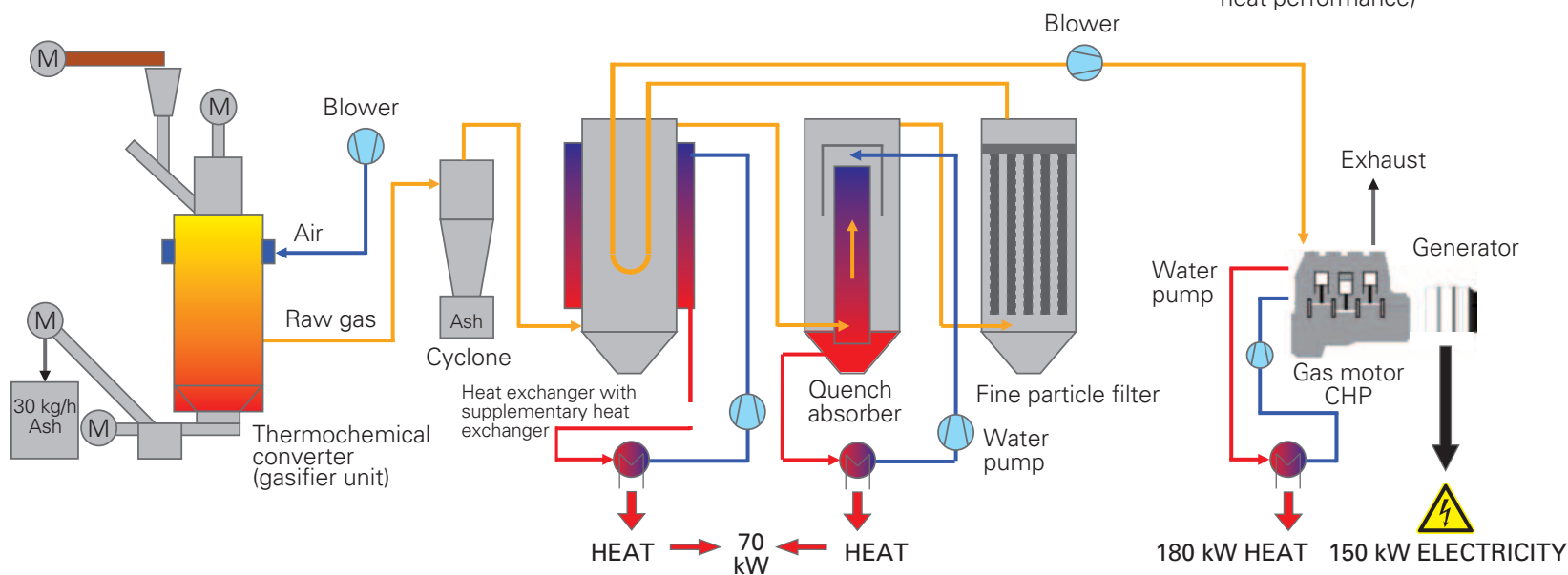


**Did you know
that birds also produce
electricity?**

Chicken manure-to-energy – how does it work?



Pellet supply:
150 kg pellets
per hour
(approx. 570 kW
chemically
bound output
in pellets)



1 A layer produces manure approximately twice per hour. In one day this sums up to 165 grammes. The water content of the manure is 77 per cent.

2 In a poultry house with 80,000 layers the total amount of chicken manure is about 13,000 kilogrammes per day.

3 To dehumidify the moist manure, it is spread on a conveyor belt and dried with warm air. This reduces the final weight to 3,400 kilogrammes.

4 For an easier transport the chicken manure is pelletised. This reduces the volume by two thirds.

5 The finished pellets all have the same size and consistency. This allows a damage-free transportation of the pellets in bags or on conveyor belts.

6 In the thermochemical converter (gasifier unit) energy is produced from the pellets through thermochemical conversion (gasification). The resulting gas is then converted to electricity and heat in the combined heat and power plant (CHP). The amount of energy produced allows to supply thermal energy for 25 households for more than one year (maximum 10 kW heat output) and to provide 200 households one year long with electricity (at an annual average use of 0,75kW per household).

BIOMASS-THERMOCHEMICAL CONVERTER (GASIFICATION PLANT)

GAS-CHP