

## Economic aspects

Maximum energy utilisation of the raw materials  
Low, stable heat price  
Charges / residual material are arbitrary  
Electricity remuneration according to the German Renewable Energy Sources Act  
Very high degree of overall efficiency



## Contact

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## Biomass gasification: stable, low cost energy

The thermal gasification is one of the exceptional possibilities for the transformation of biomass into chemical, thermal and electrical energy. The bioampere® solid particle gasification plant uses the procedure of thermal gasification and is therefore a compact plant for decentralized energy supply.

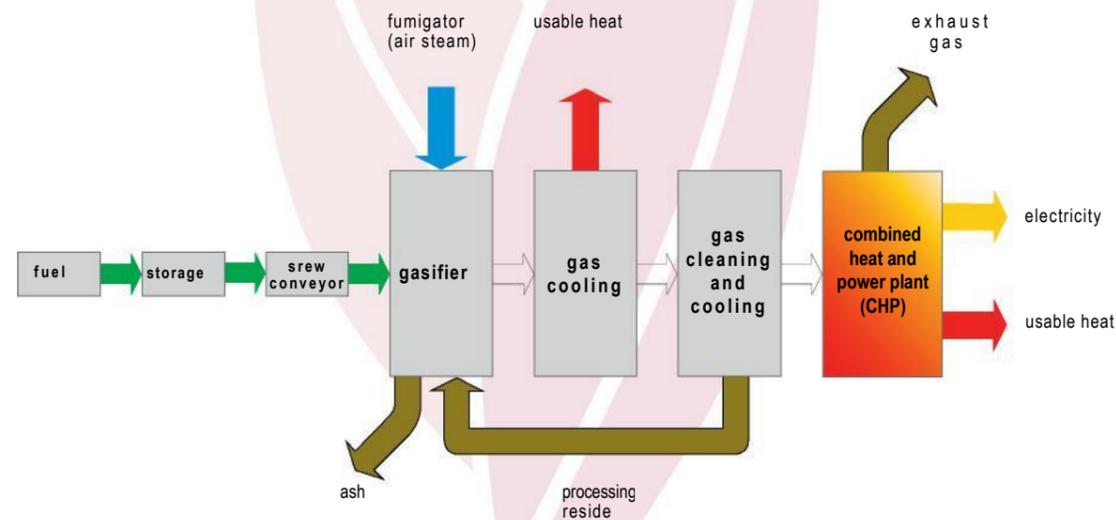
### Advantages:

Very high degree of overall efficiency  
Use of a great number of charges (biomass or waste materials)  
Charges are combinable and exchangeable  
Low-maintenance and extensively fully automated operation  
Stable process sequences  
No smell nuisance  
Small floor space required  
Residual material is usable in the agriculture



## bioampere<sup>®</sup> gasifier for solid particles

The bioampere<sup>®</sup> solid particle gasifier converts at temperatures up to 1.200 degrees centigrade solid fuels of biological origin almost completely into a useful gas. This useful gas has a specific output of 0,9 to 1,3 kWh per norm cubic metre depending on humidity and ash content. After cooling and cleaning this gas is used for electric power production in a block heat and power plant. The arising waste heat can be uncoupled for heating or cooling purposes. In this case you will have the possibility to convert the heat into cold for example with the aid of an absorption chiller.



Process of bioampere: gasifier for solid particles



CHP: interior view



chaff cutter and spiral conveyor: interior view

## Scope of application and performance characteristics

The application of bioampere<sup>®</sup> for decentralized power supply is possible at almost every site due to the small floor space required. Thus the bioampere<sup>®</sup> solid particle gasifier can not only be used as a complement in existing electricity networks, it allows also the power supply at hitherto uneconomical sites.

The bioampere<sup>®</sup> solid particle gasifier is suitable in particular for sites with heat or cold demand and/or surplus at relevant residual material. However, the plant can be also used for material recycling.

**Examples:**

- Agricultural companies
- Gardening
- Cities & municipalities
- Food industry

- Hotels
- Shopping centres
- Heat-intensive trade

Charge	Heating value Hu MJ/kg TS	Humidity ratio %	Ash content Ma %
wood chips (pine, cottonwood, willow)	18,4 - 18,8	10 - 53	0,3 - 1,0
miscanthus	17,6	20	2,8 - 3,9
crop (rye, wheat, oat, corn)	17 - 18,9	10 - 12	2 - 2,6
rape	26,5	10	3,3
straw (wheat, rape)	17,1 - 17,4	17,4 - 18	4 - 6
horse dung	ca. 20	52	ca. 2
hay pellets	17,3 - 17,9	10 - 12	5,4 - 6,3
clearing sludge – structural material (pellets, not squeezed)	17,6	30	23

### Performance characteristics

Thermal power input	from 600 kW
Useful thermal power output	Up to 300 kW
Electrical basic power as feed-in	Up to 240 kW
Pilot injection output of CHP	from 10,6 l/h
Floor space required for one facility	approx. 400 m <sup>2</sup>
Overall efficiency	Up to 90 %
<b>Charge demand</b>	
Straw	approx. 1.000 t/Jahr
Wood	approx. 1.200 t/Jahr