## Innovative biogas plants:

**The advantages of the SBBiogas technology at a glance**

### Patented SBBiogas technology with a higher biogas yield of up to 20-30 %

- very high gas output
- high availability of heat, approx. 85-90 %, all year round
- plant maintenance with the plant in operation
- innovative R+S technology prevents the deposition of sand and sediments
- efficient destruction of weed seeds and pathogenic germs
- no odour nuisance of the plant

### Agitatore controllo intelligente

SBBiogas patent (pending) for prevention of floating sludge beds

- variable operating heights of the agitator
- visual fill level display of the agitator
- automatic fill level-controlled height adjustment of the agitator
- approx. 60 % lower power consumption
- low maintenance cost in operation


### Skimming and suction device

SBBiogas patent for sediment discharge during operation

- reduces idle times
- saves operating costs
- maintains the entire fermenter volume for years of operation
- increases the range of input materials e.g. turnips, grass, solid menure
- increases the yield record

### Provide of heating for adjacent companies and households

Provision of the high bio-heat potential (85-90 %) in the form of district heat

- ensures additional income
- increases the economic efficiency of the plant
- generation of energy according to climatic protection standards all year round

## Biogas generated from waste materials and biomass

## More power and gas generated from less input

### Your advantages:

- Maximum gas yield from your substrates
- Continoues operation of the plant
- Continoues removal of sand, sediments
- No odour nuisance due to a completely closed system
- High degree of plant safety
- High availability of heat (district heating)
- Complete costumer support service including biological analysis and assistance

Turn-key biogas plants

· Engineering
· Construction
· Service

**Excellent biogas plants**

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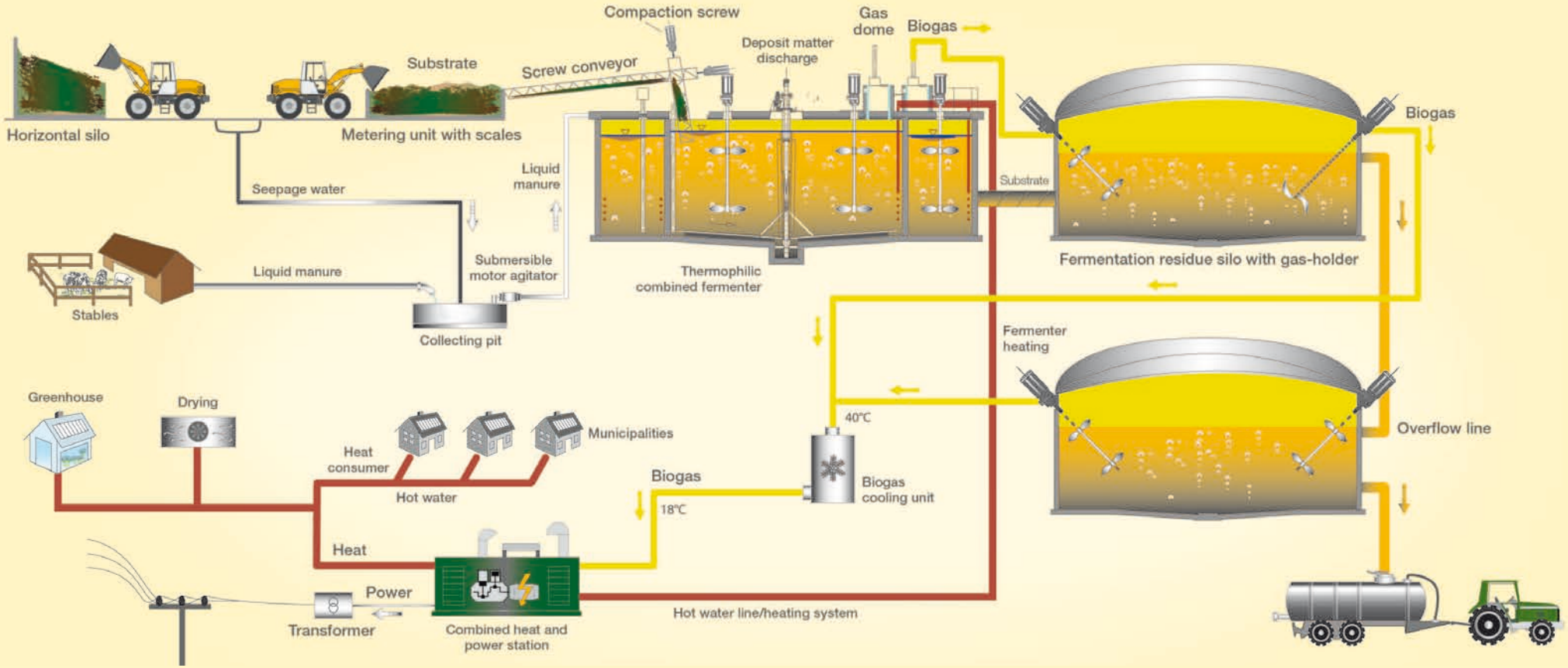
# Functional principle of SBBiogas plants




## Innovative SBBiogas technologies provide huge advantages over conventional technologies

Based on their extensive experience in tank and plant construction and on scientific and microbiological research, SBBiogas developed a new engineering concept for biogas plants. The crucial improvement of this concept is the "vessel-in-vessel" design: it forms the basis for the new combined fermentation technology.

From the same quantity of substrate, the SBBiogas plant generates approx 20 to 30 percent more energy in comparison with conventional plants.

The plant was optimised for best economical methane output for biogas production, particularly using agricultural products, such as liquid manure and energy crops.

The process combination of thermophilic fermentation and subsequent mesophilic post-fermentation generates a high energy output and allows for a compact plant size with high process stability.

Trouble-free process, before and after: You can't buy biogas plants off the shelf! Therefore, SBBiogas provides a comprehensive service package, ranging from initial planning to a complete plant management. We develop turn-key biogas plants, individually customized for your requirements.

**Engineering, construction and service, including interface solutions.**

## The impact of the process technology

The thermophilic-mesophilic operation principle of the SBBiogas plant represents the innovative method of biogas generation.

Substrates are fed semi-continuously. Desulphurization is performed. Atmospheric oxygen in quantities due to introduction of that correspond stoichiometrically to the sulphur content of the biogas. The produced sulphur is maintained as fertiliser in the fermentation residue.

The SBBiogas fermenter atmosphere is operated at temperatures of approx. 50°C. The microorganisms have optimum conditions. Thus, the bacteria reach maximum rates and perform to maximum the metabolic methane production potential.