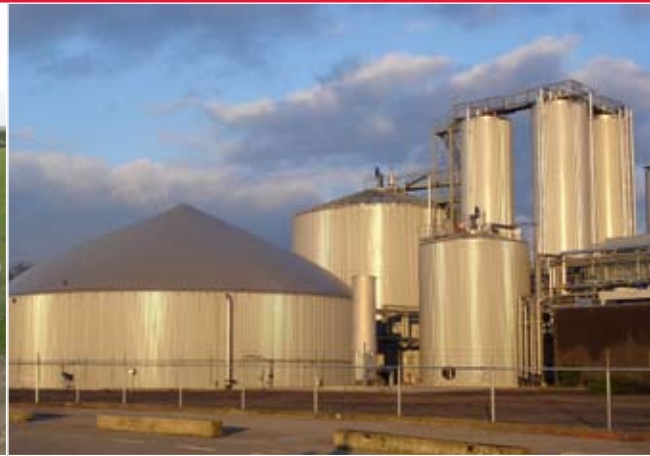




## COMPANY BROCHURE



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## Efficient in sustainable energy

## WHO WE ARE

Over the years HoSt specialized herself as a company in technologies for the sustainable biomass energy market. Her specialty focuses on anaerobic digestion, gasification and wood fired combustion plants (CHP).

HoSt founded in 1996 by her two mother companies, Holec Projects and Stork, both large industrial companies in the Netherlands. Since 1999, HoSt is an independent private company.

In the early years HoSt operated primarily as an engineering agency on energy savings and process optimization. In 1999 HoSt started with the development of her own technologies for the generation of sustainable energy production from biomass.

HoSt is currently mostly active as a turnkey supplier of biomass energy plants. After the development of the digester market in the Netherlands in 2004 we gained a market share of about 60% and we have delivered about 30 plants. HoSt is known as a company who has supplied “smart” installations. This is mainly because the installation are tailor made, have a very high availability (average >90%) and have very high results (minimum 2 times the market average). HoSt has the most experience in the market with organic digestible products and we are the only one able to digest 100% slaughter waste. Since 2008 HoSt has projects outside the Netherlands. HoSt is also still involved in feasibility studies, engineering work and legislation for a wide range of customers, mainly in the energy-intensive industry.

HoSt B.V. currently has 27 employees of which most are academically educated. Besides the head-quarter in Hengelo HoSt have offices and representatives in countries like Italy, United Kingdom, Ireland, Canada, North America, Romania, Latvia, Poland, the UK, Ireland, the Czech Republic and Slovakia. HoSt can generate energy and heat from biomass from using the following technologies:

- Biogas plants on farm- and industrial scale (anaerobic digestion);
- Wood-fired CHP plants;
- Circulating fluid bed gasifier plant (gasification).

## ADVANTAGES OF HOST

- Low operational costs/high profit;
- Most practical experience in the field of digestible organic waste;
- Independed tested the best results in the market (average 2 x more out of same digester volume);
- High availability of the installations of average > 90% (market average is < 83%);
- Innovative en reliable in solutions and technique;
- Tailor made regarding specific demands of projects;
- Own laboratory with analyzing services and assistance for optimizing the process and results;
- Strong local partners in several countries.



Efficient in sustainable energy

## BIOGAS PLANTS (ANAEROBIC DIGESTION)

HoSt is the supplier of biogas installations, as well as in farm scale as for the industry. In a biogas installation, organic materials can be consumed in a heat and power plant and converted into electricity and heat.

### DIGESTABLE MATERIALS

Almost all organic material can be digested. The best known form is manure digestion. Manure provides an optimal environment for digestion bacteria.

Because of the good digestion characteristics of manure, other organic residuals are often digested with manure. This is the so called anaerobic digestion. By anaerobic digestion of manure with organic residuals, the biogas production and thereby the profitability of the plant are significantly increased.

Digestion of organic residuals without manure is possible if the residuals have a suitable composition. If the residuals do not have a suitable composition, digestion can be done in combination with other residuals or manure.

The dry and organic matter content can vary per installation (among other things depending on the used feeding system). For a high biogas yield, the following factors are relevant:

- Blending of digestible materials;
- Freshness of the product in conjunction with pre-digestion;
- In case of anaerobic digestion flows: degradation of the material;
- Retention time.

### IMPLEMENTATION FORMS OF INSTALLATION

HoSt provides two types of installations:

- Farm scale installation with integrated gas storage and gas treatment
- Industrial installation with as well an integrated as a separate gas storage and gas treatment.

Depending on the composition of the materials HoSt can give you advice about the most suitable installation.

## CIRCULATING FLUID BED GASIFIER (GASIFICATION)

HoSt started in 1996 with the development of its own technology for the gasification of biomass fuels. This technology was developed in cooperation with ECN, the main Dutch research institute for energy.

The development of our technology has been expanded and optimized over the years. With amongst others: gas treatment, water, gas turbines, gas engines, low NOx incinerators.

At the moment the sales are focused on installations where the gas is burned in steam boilers and where electricity is produced through a conventional steam turbine.

Characteristics of these fluidized beds are operations profitability, efficiency, flexibility and low-emissions by the usage of a special developed NOx-burner.

## WOOD FIRED CHP-PLANTS

HoSt is a supplier of wood-fired combustion plants. The wood is burned in a furnace and the produced steam is used for the production of electricity using a steam turbine.

HoSt provides plants with a capacity of 600 kWe to 5 MWe. For the combustion technology a partnership is established between Saxlund and HoSt. The technology has been successfully integrated in more than 30 facilities throughout the world.

In plants, usually supplied by other companies, the electrical efficiency is limited, because of its relatively small scale, no high pressure steam can be achieved with these installations. HoSt, has optimized the overall concept by the development of a steam boiler, which is suitable for a pressure up to 70 bar. This means that a relative high yield of about 23% can be achieved.

In addition, HoSt has built and designed various wood-fired plants. HoSt is currently one of the main contractors in the field of wood-fired combustion installations.





## ADDITIONAL SERVICES

### PROCESS ANALYSIS

To control a process better and to be able to adapt on it, HoSt provides process analysis for your biogas installation. Through process analysis you can effectively avoid process failures by acidification and salinity, etc., the gas yield can be improved, the cost of the feedstock can be reduced and the value of the fertilizing digestate determined.

### ENZYMES

Enzymes for the biogas installations are produced by using fungi moulds. Natural moulds produce enzymes which degrade the substrates on which they live to easily digestable materials. Using this process, moulds know how to get there necessary energy from different kind of products, like corn, grass and even wood. Because of the degradation of long chains, the mixing process is improved and a floating layer can be avoided.

### LABORATORY

HoSt has its own laboratory with four digestion reactors, reconstructed on scale. With these four digestion reactors we can do all kinds of tests. By simulating a real-time digestion reactor, the digestion process can be optimised.

We can also estimate the biogas yields of specific product which are provided by our customers.

## FIELDS

- Turn-key delivery of anaerobic digestion installations, wood-fired CHP installations and gasification installations
- Project development
- Experiments and measurements on laboratory scale and full-scale
- Providing planning application and grant applications
- Basic and detail engineering
- Feasibility studies

## PARTNERS

Besides the headquarter of HoSt in Hengelo, the Netherlands, HoSt has partners in:

- Poland
- Italy
- United Kingdom
- Canada and North America
- Ireland
- Romania
- Czech Republic
- Slovakia
- Latvia

For more information about HoSt, you can reach us directly or have a look on our website: [www.HoSt.nl](http://www.HoSt.nl)

