



ECONOMIZER

THE INNOVATIVE
TREATMENT TECHNOLOGY
FOR ALTERNATIVE
FERMENTATION FEEDSTOCK



FOCUS

The Economizer SE is a patented solution for the optimum treatment of alternative, cellulose-rich feedstock.

The Economizer SE technology gives rise to a new generation of biogas and biomethane plants with an outstanding ecological balance and economic efficiency:

AGRICULTURAL BIOGAS PLANTS: effortlessly processing high cellulose, dry alternative feedstock such as straw, manure and dry grasses in varying composition

INDUSTRIAL AND MUNICIPAL BIOGAS PLANTS: which are able to convert a wide range of waste materials like domestic bio-waste, horticultural residues and hygienically hazardous waste

INDUSTRIAL BIOFUEL PLANTS: utilizing residues from crop harvest and fuel production to create biogas as a resource for self-sustaining supply with process energy



PROCESS

Inside the Economizer SE system pre-chopped organic raw feedstock is mixed with pre-heated process water to achieve an overall dry matter concentration of around 30%.

This substrate mixture is heated in two steps up to 180° C and treated in a pressured hydrolizer reactor at up to 10 bar.

The following shock decompression step causes a "Steam Explosion" effect, which achieves maximum substrate disintegration. Coarse feedstock compositions are converted into an easily convertible feed slurry.

Thus, the subsequent step of biological fermentation is working under constant reaction conditions and at reduced retention time. This guarantees stable, trouble-free operation.

The technical substrate disintegration results in specific methane yields from 300 to 375 NI CH₄ / kg orgDM. The reaction energy is supplied in the form of thermal energy, e.g. from exhaust-gas heat recovered from a co-generation unit. More than 50% of the required process heat is re-cycled inside the system, which is the reason for the Economizer SE's outstanding energy balance.

The specific energy consumption ranges from 7.5 to 12.5 kWh el. and from 100 to 150 kWh therm. per one ton of raw feedstock with an approximate dry matter content of 30%.



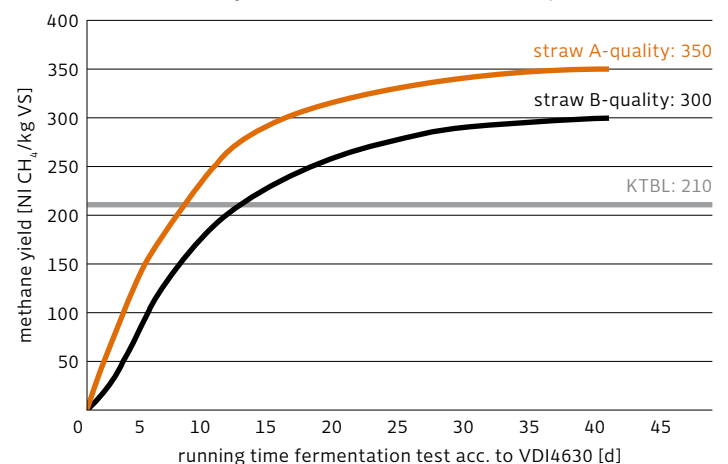
The standardized Economizer SE series is available with operational capacities of up to 2.5 tons of substrate per hour. The modular Economizer SE plants can be used for upgrading and extending existing biogas plants with a minimum size of

500 kW as well as for the design of new biogas installations.

APPLICATION

Economizer SE systems are delivered in containerized modules or built for indoor assembly. Final assembly and integration into the biogas plant take place on site.

Maximum methane yields from different straw qualities:





ECONOMIZER^{SE} – FEEDSTOCK



AGRICULTURAL FEEDSTOCK

**Any kind of straw
of any quality:**

Cereal straw
Maize straw
Rice Straw
Soya straw
Rape straw
Hay
Sugar cane bagasse



ANIMAL HUSBANDRY FEEDSTOCK

**Any kind of manure with
deep litter/straw bedding:**

Cattle manure
Horse manure
Poultry manure
Pig manure



GREEN AND OTHER WASTE

**Highly-lignocellulosic
residues:**

Green waste: cuttings,
clippings, leaves
Coppicing waste
Reed
Mushroom breeding residues
AD plant digestate (solid
phase)

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