

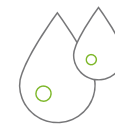
HIGH SOLIDS THERMAL HYDROLYSIS PRE-TREATMENT TECHNOLOGY FOR ORGANIC WASTE



BIOMAK[®] FEATURES

| | |
|-----------------------------|------------------------------------|
| Processing capacity | 65,000 tonnes per year |
| Uptime | <90% (7884 h) |
| Process type | Semicontinuous, fully automated |
| Optimal feedstock | Particle size <140mm ; TS: 20%-80% |
| Dimensions | 20 m (l) x 6 m (a) x 16 m(h) |
| Operating conditions | 2.5 - 4 barg ; 139 °C - 152 °C |
| Residence time | 20 minutes |

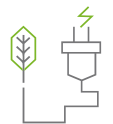
OPEX



Water
0.220 m³/t



Heat Demand
120-170 kWh_e/t



Electricity
2.80 kWh_e/t



Liquid effluent
0.112 m³/t



Maintenance
120,000 €/year



Personnel
Max. 2 per shift
(shared with existing facility)

Equipment included

- ✔ Autoclave system
- ✔ Support structure
- ✔ Vacuum system
- ✔ Cooling tower
- ✔ Feeding & Outlet Hopper
- ✔ SCADA Software

Key Benefits

30% additional processing capacity

20% - 50% additional specific biogas production

Increased organics separation efficiency and recovery >90%

Increased biogas quality: +10% CH₄ content ; -50% H₂S concentration

10% - 15% less solid digestate

Full process stability

Additional savings

- Less heat required in operation
- Potential avoidance of a pasteuriser
- No need of chemical reagents
- Less expenses on the H₂S cleaning and biogas upgrading
- Water savings from using the BIOMAK® liquid effluent in low solids AD
- High stability avoiding operational stops and reducing digester maintenance
- Capability to process new MSW streams

| | |
|--------------------|--------------------|
| 65,000 tonnes/year | 10% P/C |
| 35% TS | 8% Light residuals |
| 67% Organics | 5% Heavy residuals |

Feedstock example



▼ 70,562 tonnes/year

▼ 32% TS



HOMOGENEOUS



CHEMICAL
DEGRADED



FREE OF
PATHOGENS

Raw Biomass

