

BIOSOLIDS TO BIOCHAR

# Remove organic pollutants from municipal biosolids



## Fully integrated steam-drying and pyrolysis technology

HECLA® combines oxygen-free steam-drying at 200°C with pyrolysis at 650°C in one fully integrated process, producing nutrient-rich, odour-free biochar



Remove environmental pollutants



Reduce greenhouse gas emissions



Recirculate scarce resources



Reduce costs and generate revenue



**90%**  
reduction in sludge volume

REMOVES:

**ORGANIC POLLUTANTS**  
including PFAS, PAHs, microplastics, and pharmaceutical residues

**4 - 11 years**  
payback period

For every 1000 metric tonnes of dry matter treated:

Retain  
**~490 tonnes**  
of CO<sup>2</sup>e in biochar<sup>1</sup>

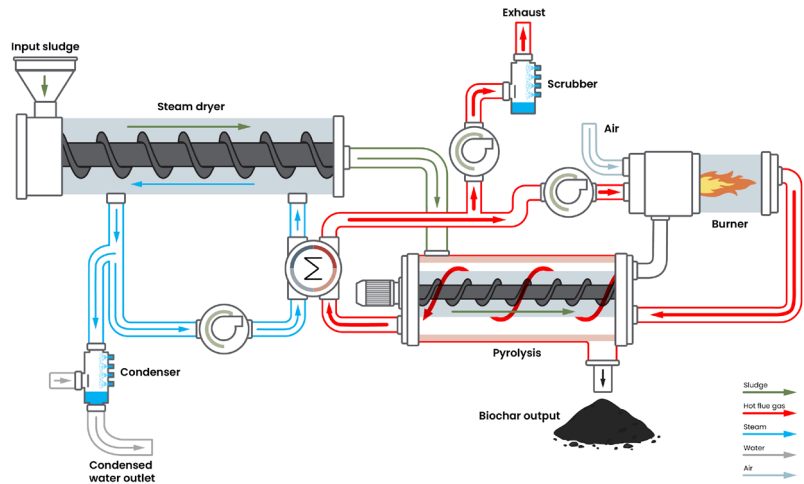
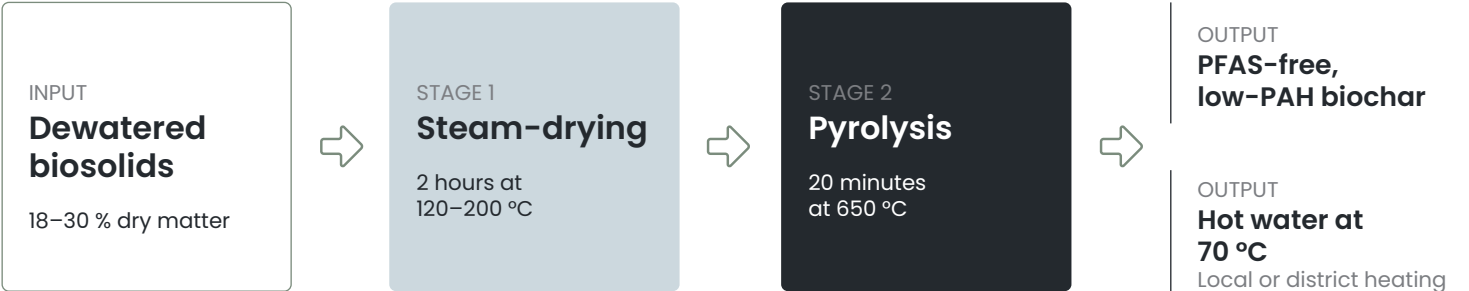
Produce  
**~2,000 MWh**  
of energy

Avoid  
**~1,500 tonnes**  
of CO<sup>2</sup>e emissions<sup>1</sup>

<sup>1</sup>AquaGreen, 2023, 100-year carbon-balance method based on Thomsen/DTU 2018

# Automated, continuous, and unmanned process

- **Oxygen-free process:** No malodour
- **Autothermal steam-drying :** No dust explosion risk or ATEX zone required



## Automation and operational monitoring.

- FULLY AUTOMATED CONTROL:

Built-in PLC automation ensures smooth, continuous operation with minimal manual intervention.
- REMOTE MONITORING AND LOGGING:

Sensor data and operating status are monitored to optimise performance and prevent unplanned downtime.
- SCADA READY:

Easily integrates with your plant's existing SCADA systems for real-time monitoring and control

## Capacity and size

|                                                                                      | HECLA® 1.000      | HECLA® 1.500      |
|--------------------------------------------------------------------------------------|-------------------|-------------------|
| <b>Bisolids treated</b><br><i>On dry matter basis</i>                                | 1,000 tonnes/year | 1,500 tonnes/year |
| <b>Unit dimensions (L x W x H)</b><br><i>Excluding feeding and receiving systems</i> | 15 x 14 x 5 m     | 16 x 16 x 5.5 m   |
| <b>Total weight</b>                                                                  | 45 tonnes         | 80 tonnes         |

## Key parameters (EXAMPLE)

The system's capacity depends on the calorific value and dry matter content of the biomass.

|                               | HECLA® 1.000          | HECLA® 1.500 |
|-------------------------------|-----------------------|--------------|
| <b>Thermal drying</b>         | 350 kW                | 525kW        |
| <b>Burner</b>                 | 500 kW                | 750kW        |
| <b>Feed rate, wet biomass</b> | 500 kg/h              | 750 kg/h     |
| <b>Produced biochar</b>       | 50 kg/h               | 75 kg/h      |
| <b>Condensation</b>           | 400 l/h               | 600 l/h      |
| <b>Cooling water</b>          | 7,400 l/h             | 11,000 l/h   |
| <b>Steam-drying</b>           | 2 hours at 120–200 °C |              |
| <b>Pyrolysis</b>              | 20 minutes at 650 °C  |              |

Ready to see the business case for your specific plant?  
Contact our team today for a custom business case evaluation.

Contact us