

# BIOGREEN PYROLYSIS PROCESS

BIOMASS

## Decarbonizing industry in a profitable way

Biogreen® is a system based on our patented, electrically heated screw conveyor, Spirajoule®, a solution designed for advanced thermal treatment in temperatures up to 1000°C and beyond. Thanks to precisely controlled, continuous, and fully automatic process, our solution supports the industry in converting biomass (wood, crops, forestry residues) into green commodities and energy.

Our process is a first choice of customers looking to importantly reduce their carbon footprint through producing biochar and bio-carbon materials of a high quality, while at the same time benefiting from energy of syngas that helps to offset the fossil fuels consumption on site.



### RENEWABLE ENERGY AND PRODUCTS

- carbon neutral gas, biogas
- biochar as soil amendment production
- biocarbon, bio-coke as reduction agent
- charcoal and solid fuels production
- fossil-free heat generation
- molecules  $\text{CH}_4$  and  $\text{H}_2$



waste &  
biogenic  
residues



fossil-free  
heat & green  
commodities

**VOW**

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# CARBON NEGATIVE SOLUTION

## INPUT



### LOCAL RESIDUES

CO<sub>2</sub> savings due to transport avoidance

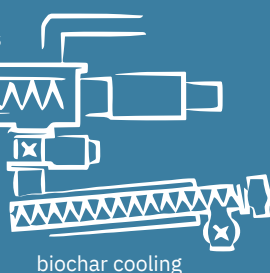


Dry biomass (approx 10% MC)  
**7 500 tonnes/year**



Biogreen pyrolysis

electricity



## OUTPUT



### STEAM PRODUCTION

Replacement of natural gas

#### HEAT PRODUCTION

**22 500 MWh/year**

Heat production from syngas  
2,5 million m<sup>3</sup> of natural gas (fossil) avoided

#### CO<sub>2</sub> SAVINGS

**4 000 tonnes/year**



### BIOCHAR PRODUCTION

Carbon sequestration

#### BIOCHAR PRODUCTION

**1 500 tonnes/year**

1 tonne of biochar sequesters  
2,5 tonnes of CO<sub>2</sub>

#### CO<sub>2</sub> SAVINGS

**3 750 tonnes/year**



## SPIRAJoule® INSIDE

Technology based on patented, electrically heated screw conveyor

## WORDS FROM OUR CUSTOMERS

*"By using the Biogreen solution, approx. 7 000 tons of wood waste will become approx. 1 500 tons of biochar sequestering approx. 3 000 - 4 200 tons of CO<sub>2</sub> annually."*

**NSR AB, Sweden**

*"The Biogreen process offers our business a strong CO<sub>2</sub> negative solution. Biochar produced in the plant serves as a carbon sink and can collect CO<sub>2</sub> emission certificates. The energy generated in the pyrolysis process is used to provide sustainable energy on site replacing energy generated from fossil fuel. These factors can offer reduction of the CO<sub>2</sub> footprint by approx. 5 500 to 8 000 tons per annum in our plant."*

**Circular Carbon GMBH, Germany**

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