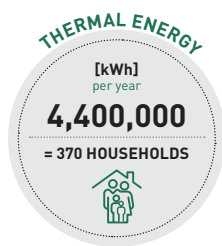
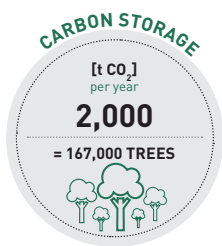


# BIOMASS RECYCLING

## INSPIRED BY NATURE



PX1500

PYREG's patented Biochar Carbon Removal (BCR) Technology enables the industrial carbonization of biogenic residues for permanent removal of CO<sub>2</sub> from the atmosphere in the form of high-quality biochar. The modular design allows to set up PYREG systems at the source of the waste stream and therefore easily be integrated into existing material cycles. The excess thermal energy can be used onsite or fed into a local heating grid.

PYREG CARBONIZATION TECHNOLOGY

## YOUR BIOMASS RECYCLING SOLUTION

### ADVANTAGES

**Conversion rate:** Up to 40 %

**Energy efficient:** The required energy is generated by the system itself; in addition, up to 550 kW<sub>th</sub> of maximum thermal capacity can be used for other purposes.

Biomass is **completely converted** to biochar and regenerative heat energy.

**Consequent upcycling of biomass:** Valuable biochar meeting high quality requirements can be commercialized at profitable prices.

Carbonization process is **compliant with all relevant environmental standards**. Systems are deployed successfully in Europe, USA and China.

**CO<sub>2</sub> sequestration:** The process of carbonization binds carbon on a long-term basis. After insertion of biochar in the soil, the carbon contained is removed from natural cycles for centuries.



RECYCLING



**PYREG**  
NET ZERO TECHNOLOGY

# SYSTEMS

	PX500	PX1500	PX6000
<b>Combustible rating</b>	500 kW	1,500 kW	6,000 kW
<b>Annual throughput</b> OS, 20% water content	1,200 t	3,300 t	13,200 t
<b>Annual production</b> OS, 20% water content	380 t	900 t	4,000 t
<b>Annual carbon removal potential</b>	750 t CO <sub>2</sub>	2,000 t CO <sub>2</sub>	8,300 t CO <sub>2</sub>
<b>Maximum thermal capacity</b>	200 kW <sub>th</sub>	550 kW <sub>th</sub>	2,200 kW <sub>th</sub>
<b>Annual excess thermal energy</b>	1,600,000 kWh	4,400,000 kWh	19,200,000 kWh
<b>Annual hours of operation</b>	8,000 h	8,000 h	8,000 h
<b>Daily labour</b>	4 h	4 h	4 h
<b>Power consumption</b>	up to 12 kW <sub>el</sub>	up to 38 kW <sub>el</sub>	up to 120 kW <sub>el</sub>
<b>Size l x w x h</b>	12 m x 6 m x 5 m	13 m x 7 m x 7.8 m	21 m x 14 m x 7,5 m

OS = Original substance | Maximum figures based on 8,000 operating hours | Wood containing 48% carbon and 6% ash | Metric tons

# REFERENCES

## BIONERO GMBH, GERMANY

### Location site

Thurnau

### PYREG unit in operation since 2018

P500

Bionero is an award winning producer of Terra Preta potting soils, based upon the tradition of the Amazon natives.

By using PYREG technology, Bionero produces high quality biochar from various biomass sources. Using a variety of treatments, the biochar is a key ingredient for a highly effective and ready-for-use growth substratum.

## STANDARD BIOCARBON, USA

### Location site

Maine

### PYREG unit in operation since 2023

PX1500

Standard Biocarbon's vision is to co-locate biochar production at large sources of biomass feedstock (by-products from Maine's vast working forests), thereby driving a true circular economy, through the application of innovative NetZero technology. These forestry byproducts will be used to produce an end-product that nourishes soils, cleans water and removes carbon dioxide from the atmosphere, while simultaneously generating renewable energy.

## NOVOCARBO GMBH, GERMANY

### Location site

Grevesmühlen

### PYREG units in operation since 2023

2 x PX1500

The Carbon Removal Park Baltic Sea in Grevesmühlen is a unique example of a holistic approach to CO<sub>2</sub> removal and green heat generation. Innovative pyrolysis technology processes plant residues into high-quality biochar (1,700 t/a), captures and stores the carbon contained in this biomass (3,200 t captured CO<sub>2</sub>/a) and feeds the generated green exhaust heat into the district heating network, increasing the share of renewable energy from 60 to 75%.