



# CARBONEON

Beyond Zero -  
The Power of Minus-CO<sub>2</sub>

by



**MConsult**  
Papier-, Umwelt- und Energietechnik

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# CHALLENGES

## DECARBONIZATION AND HIGH INVESTMENT REQUIREMENTS IN FOCUS

- Conversion to CO<sub>2</sub>-free heat sources on an industrial scale is difficult
- Ensuring reliable availability of CO<sub>2</sub>-free electricity
- High investment requirements for transformation
- Need for biogenic carbon for material applications
- Utilization of unused forest residual wood
- Restructuring and rejuvenation of forests



# OUR SOLUTION OFFER

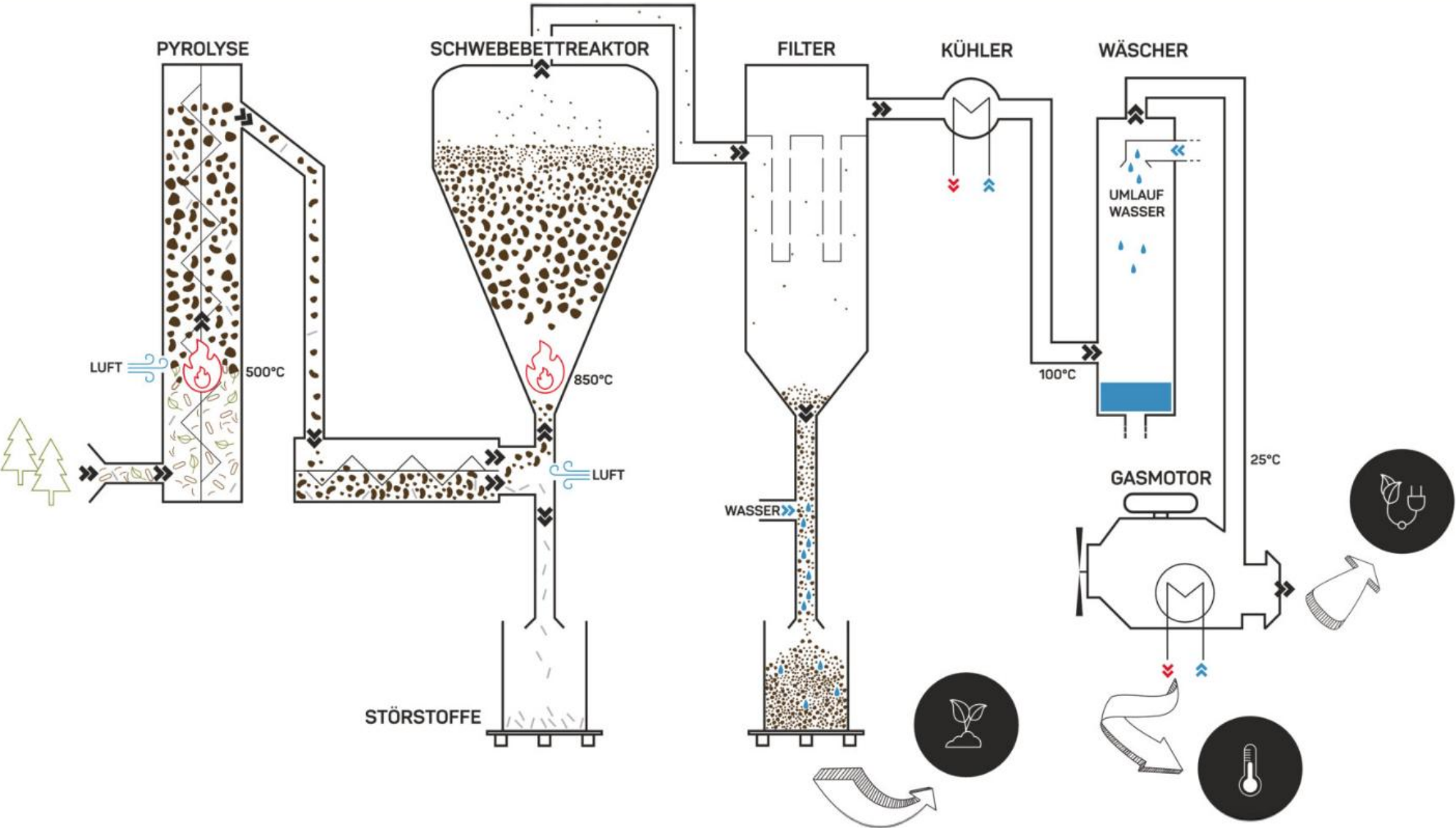
## SUPPLY OF BIOGENIC CARBON AND MINUS-CO<sub>2</sub> ENERGY

- Production and marketing of certified biogenic carbon from surplus wood in carbon plants
- Baseload heat and electricity at a fixed price
- Long-term energy supply contracts
- Free feasibility study
- Planning, permitting, and construction of the carbon plants from a single source
- Operation of the carbon plants, guaranteed availability of 8,000 h/year
- Low investment share for heat customers



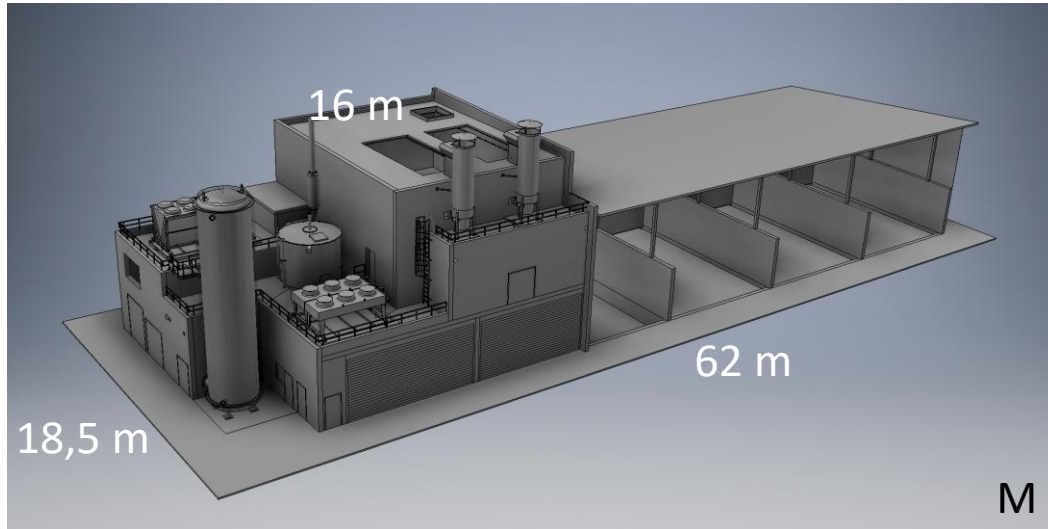
# OPERATING PRINCIPLE OF THE CARBON PLANT

PROVEN TECHNOLOGIES IN A NOVEL COMBINATION

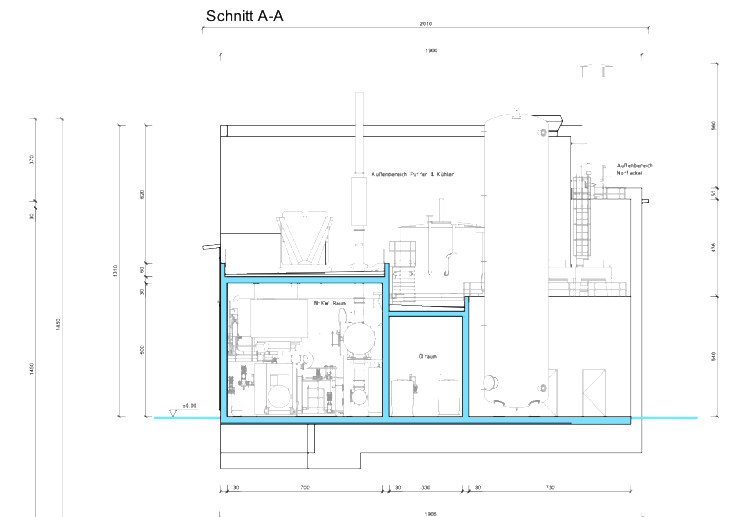
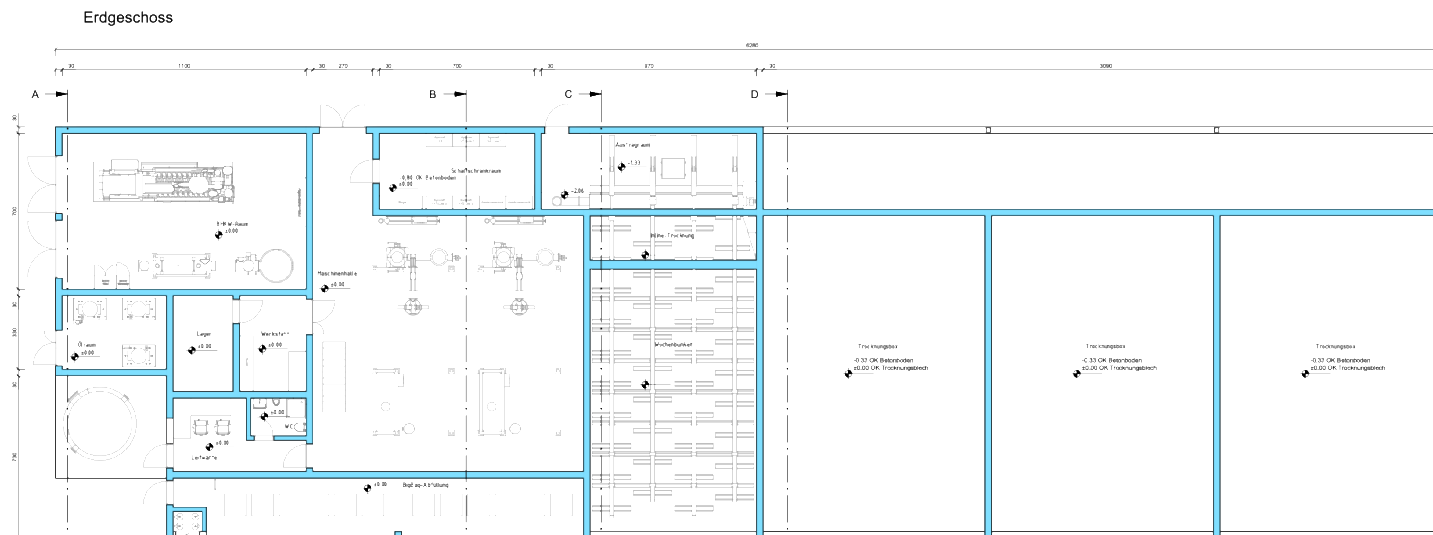


# KEY FIGURES

## WHAT YOU CAN RECEIVE AND WHAT WE REQUIRE



Key figures	Plant S	Plant M
Electrical output	500 kW	1000 kW
Thermal output, temperature level 90–95°C	740 kW	1380 kW
Thermal output, low temperature up to 50°C	250 kW	500 kW
Space requirement	1200 m <sup>2</sup>	1500 m <sup>2</sup>



- **Agriculture & horticulture:** Soil improvement, higher yields, reduced fertilizer losses
- **Livestock farming:** Feed additive, improves digestion, reduces methane emissions
- **Activated carbon:** Filter material for binding heavy metals and organic pollutants
- **Steel industry:** No green steel without biogenic carbon
- **Construction:** Addition to concrete or asphalt to reduce CO<sub>2</sub> footprint (permanent binding)
- **Climate protection:** Permanent CO<sub>2</sub> sink, certification as “Carbon Removal Credit” possible

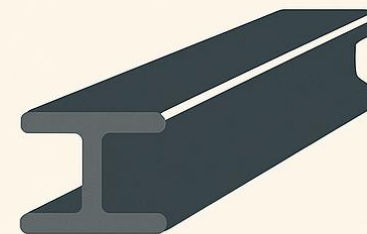
## Anwendungen von Biochar



Bauwesen



Landwirtschaft

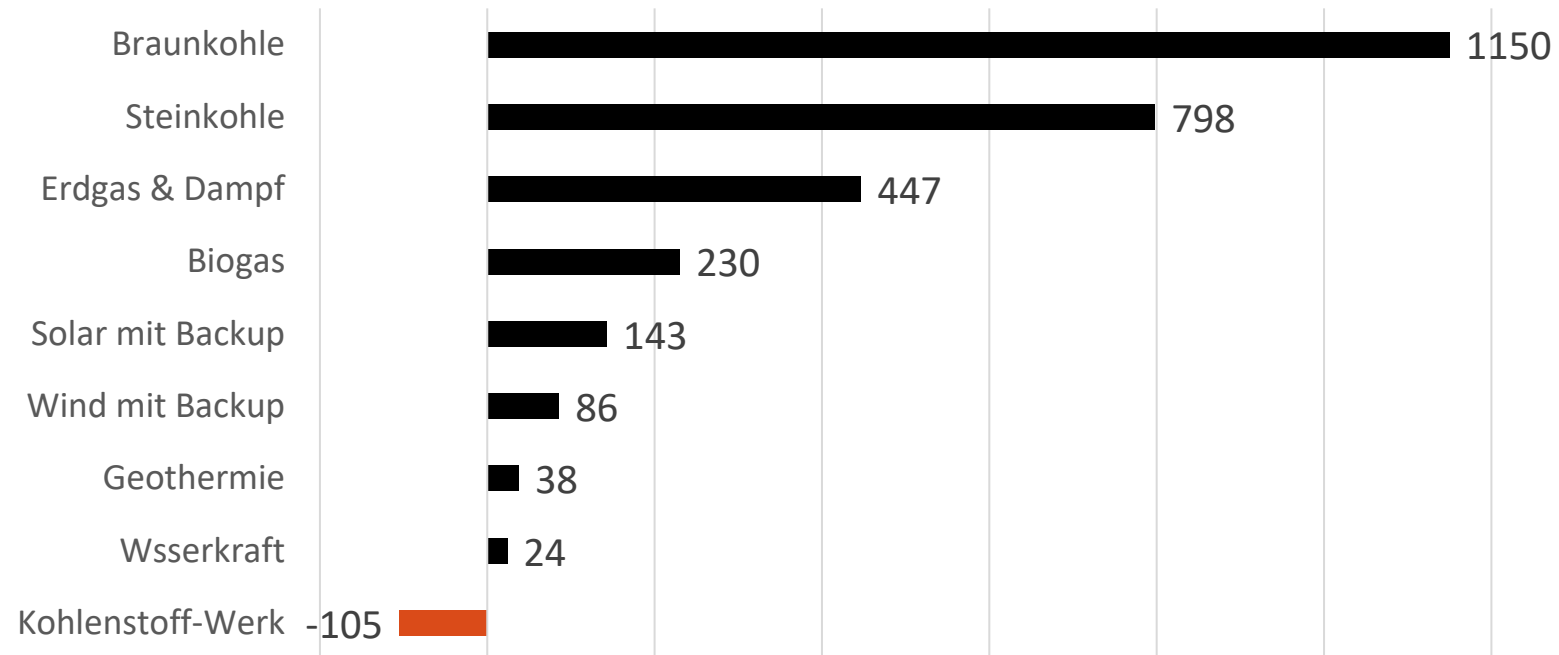


Stahl



Tierhaltung

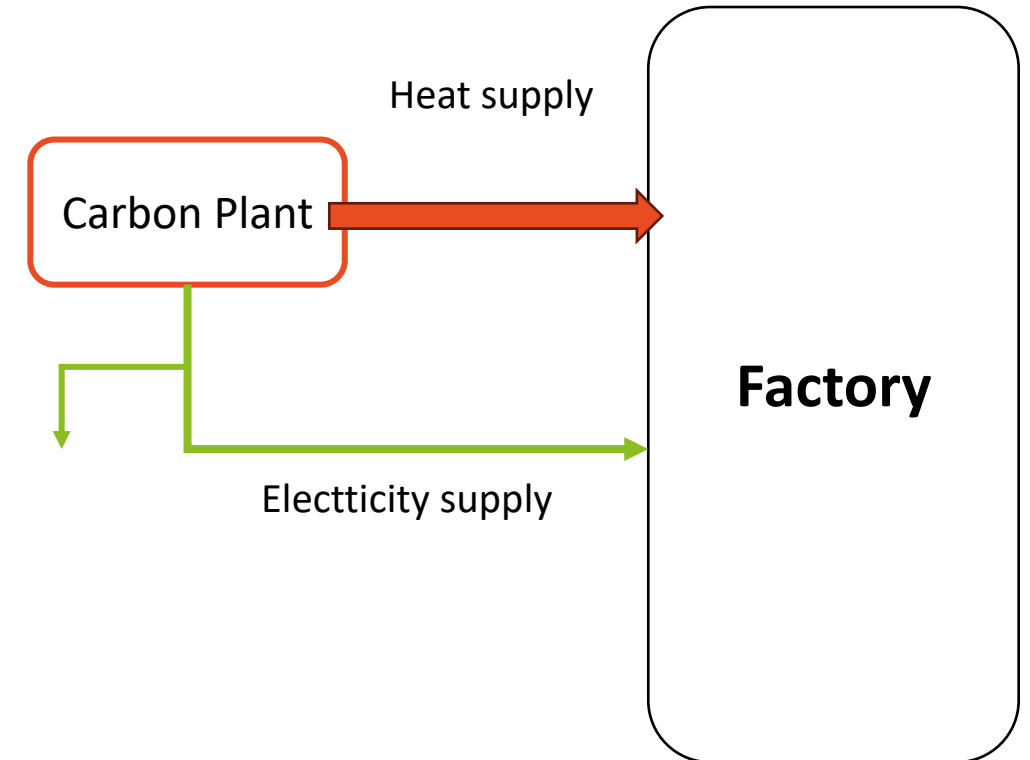
Decarbonization impact of energy production in carbon plants  
in CO<sub>2</sub> equivalents (GTP 100) g/kWh electricity:



GTP 100 stands for *Global Temperature Potential* over a period of 100 years and is a measure of the warming impact of greenhouse gases compared to CO<sub>2</sub>.

## HOW THE BUSINESS MODEL WORKS

- **Proximity to the customer:** Construction of the carbon plant in immediate vicinity or on the factory premises
- **Transparency:** Operation of the plant within an SPE (GmbH & Co. KG), ideally with participation of the heat customer (12.5%)
- **Cost stability:** Conclusion of at least one long-term fixed-price heat supply contract
- **Privileged electricity supply:** Optional conclusion of a power supply contract (behind-the-meter = no el. Tax & network fees)
- **No operator concerns:** Operation is ensured by us



## WHAT YOU GAIN FROM COOPERATING WITH US

- Combinable technical solution: ideally integrated with heat pumps, CHP units, gas boilers and biomass boilers
- Ideally designed as a baseload unit but also configurable as a daily sprinter
- Cost-effective decarbonization solution from 5 GWh heat or gas demand
- Balance-sheet decarbonization of existing fossil systems through minus-CO<sub>2</sub>
- Long-term cost control and partnership
- Liquidity-preserving investment



## IN WENIGER ALS ZWEI JAHREN ZUR MINUS-CO<sub>2</sub> ENERGIE

1.	Expression of interest / initial meeting	1 week
2.	Signing of an LOI	1 week
3.	Demand assessment / feasibility study (free of charge): Is the plant economically viable?	2 weeks
4.	Fundamental decision	4 weeks
5.	Establishment of operating company	6 weeks
6.	Order placement / conclusion of energy supply contracts	1 week
7.	Detailed engineering (12 weeks) and permitting procedure	40 weeks
8.	<u>Construction and commissioning</u>	<u>40 weeks</u>
		95 weeks



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