CO_2 neutral energy generation with fuel utilization efficiency of up to 92%.

The fuel makes the difference

SYNCRAFT®

www.syncraft.at

The fuel makes the difference

When it comes to raw materials, our wood gasification plants are so versatile that we are able to use every last piece of woodland fractions for fuel – right down to offcuts and sawmill by-products.

POWER

Power is the core product of every SynCraft wood gasification plant. CraftWERKE make almost 0.3 kW of electricity available from 1 kW of fuel. This means the electrical efficiencies of wood gasification power plants from SynCraft are amongst the highest in the entire bioenergy sector, all the more impressive considering no fuel additives at all are used to generate electricity in our gasification motors. Moreover, the emission values in all sectors are far below the prevalent emission thresholds, despite these high efficiency levels. A standard oxidation catalyst is all that is required for the after-treatment of waste gases.

HEAT

In terms of the amount of energy produced, heat may only be a by-product of our wood gasification plants, but it represents the greatest proportion. CraftWERKE make up to 0.6 kW of heat available from 1 kW of fuel. This useful heat can be provided in a concentrated manner on a temperature level of about 95°C. If so required, the useful heat flow can also be split into low and high temperature flows with supply temperatures of 80°C and up to 200°C respectively. Heat usage represents a key economic factor in operating CraftWERKE.

CHARCOAL

Premium quality charcoal represents the third, valuable product of every CraftWERKE plant. In economic terms, our plants generate revenue where expenditure is the norm. This underlines the economic benefit when operating a SynCraft wood gasification power plant. In terms of ecology, all solids generated can be returned into the plant cycle as soil conditioners, thereby closing the material cycle in a sustainable manner. Activated biochar does not directly fertilise the soil; it facilitates the long-term retention of fertilising materials meaning the use of fertiliser can be reduced to a minimum. The moistened, dust-free biochar can be filled at the plant into big bags or containers, ready to be sold.

Think about tomorrow today

The era of fossil fuels is drawing to an end and bioenergy is increasingly becoming the focus of companies looking to the future. It is time to get to know us.

Wood in particular is set to play a key role in energy recovery of tomorrow. Replenishable raw materials can be put to the best possible use with our turn-key CraftWERKE wood gasification power plants. This in-house designed protected technology produces more heat and electricity, making you flexible and free of traditional models of supply. SynCraft accompanies you during the entire phase of transition to resource-efficient and sustainable energy generation. What are you waiting for? The benefits speak for themselves.

Your benefits

The weaknesses of other technologies are our strengths.
We get the most out of wood, with CraftWERKE.

Four reasons clearly in our favour

Clean energy

Wood from the forest floor is cheap fuel and good for the environment. It is renewable and carbon neutral, but stones, needles, fine fraction and bark are sometimes mixed in. No problem for our CraftWERKE. Whilst other technologies are reliant upon perfectly clean chips or wooden pellets, our plants effortlessly convert the fuel into clean energy.

No additional costs

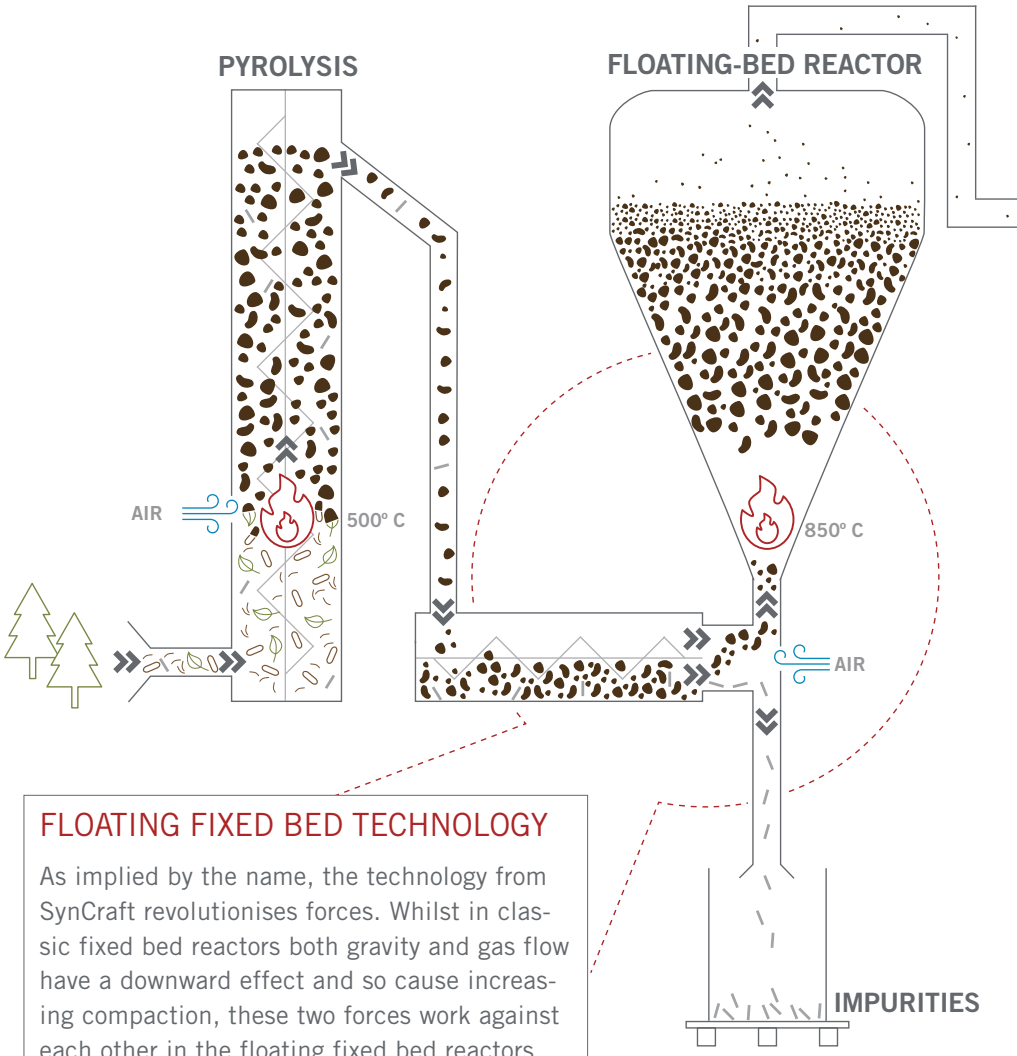
No auxiliary materials are used to operate CraftWERKE, meaning there are no additional costs for ongoing operations. Our plants run solely on wood, electricity and water, keeping your expenditure within the realms of acceptability.

Profitable charcoal

With CraftWERKE technology, we are making a valuable contribution towards environmental protection because the wood gasification plant generates electricity and heat practically free of fine particles. At the same time, gas production actually generates revenue in the form of charcoal. This can be used, for example, as activated carbon in agricultural soil, thus closing the ecological cycle.

The principle

Dry wood chips are first transformed thermo-chemically into a gaseous fuel to then be converted into heat and electricity in the engine.

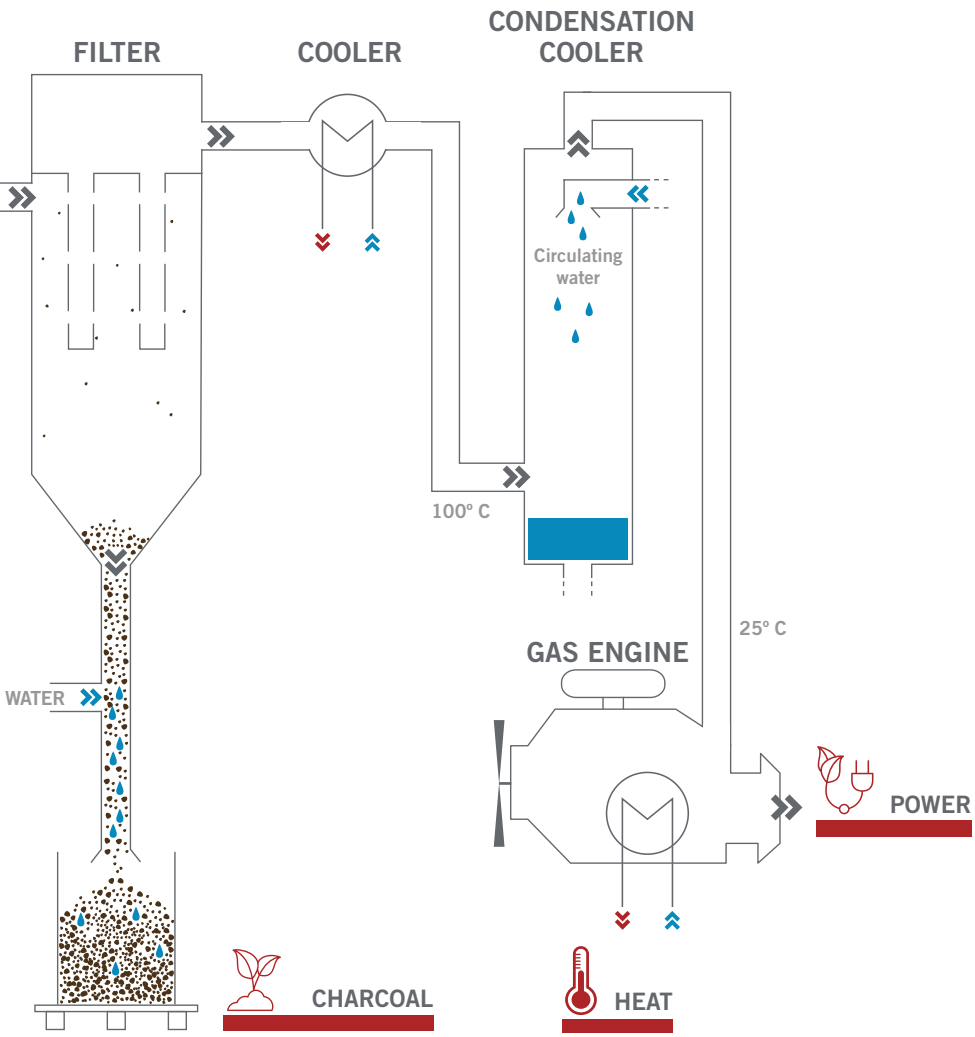


FLOATING FIXED BED TECHNOLOGY

As implied by the name, the technology from SynCraft revolutionises forces. Whilst in classic fixed bed reactors both gravity and gas flow have a downward effect and so cause increasing compaction, these two forces work against each other in the floating fixed bed reactors from SynCraft. This minor yet significant difference means that the charcoal bed in the gasifier maintains an ideal state of looseness and permeability, irrespective of how fine or structured the wood chips may be. The entire plant also brings considerable advantages in terms of maintenance: impurities and slag are separated effortlessly at the foot of the floating fixed bed reactor.

Maximum electricity yield: 30%

Electricity is produced from wood, whereby our CraftWERKE attain an extraordinarily high efficiency level, 30%, higher than other comparable systems. This is due to sophisticated gas motor technology, which is delivered as standard with all our plants. You acquire state of the art gas motor engineering.



Tobias Ilg,
EnergieWerk
Hatlerdorf/Dornbirn,
Austria

"I have seen many wood gasification systems. In the end I opted for the product with the greatest potential in terms of raw material used - the wood gasification plant from SynCraft."

Dr. Günther Herdin,
Co-owner of 2G
Manufacturer
of gas motors

"Our highly efficient 2G motors are attaining maximum performance courtesy of the excellent gas quality of SynCraft."

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MODEL	CW700-200	CW1000-300	CW1200-400
Electrical power	200 kW	300 kW	400 kW
Thermal power (basic variant)	326 kW	488 kW	615 kW
Thermal power (basic variant) up to **(1)**	481 kW	719 kW	920 kW
Fuel heat capacity	721 kW	1.067 kW	1.368 kW
Fuel demand	140 kg/h	208 kg/h	267 kg/h
Specific fuel demand	0.70 kg/kWh el	0.69 kg/kWh el	0.67 kg/kWh el
Charcoal by-product	1.95 m^3/day	2.9 m^3/day	3.7 m3/day
Space required by gas generator **(2)**	approx. 100 m^2	approx. 105 m^2	approx. 120 m^2
Space required by engine **(2)**	approx. 55 m^2	approx. 55 m^2	approx. 55 m^2
Space required for bunker (week's supply)	155 m^3	220 m^3	278 m^3
Fuel quality	G30 - G50, optimally < W10, with fine fraction and bark		
Generator voltage	400V, 50 Hz		
Heating circuit	Customer-specific heat integration, e.g.: supply / return 90°C / 70°C, high and low temperature circuits, cold, steam		
Deliverables (minimum)	Gas generator, engine, controller, walkway		
Options	Drying, bunker, feed, low temperature usage packet, big bags (filling for organic charcoal)		
Scope of service	High level of flexibility starting with planning, support with approval processes, delivery, installation of the turn-key plant, start-up and service.		

(1) ... With low temperature usage packet
(2) ... Customer-specific adaptation possible

Energy Globe
The world award for sustainability

SYNCRAFT®

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