

Wood gas power plant without compromise

The fuel  
makes  
the difference



# The company



Wood gas power plant



Process engineering



Automation

- Supplier of turn-key wood power plants
- Consultants for process engineering
- Company for automation and mechatronics
- Head quarter in Austria / Tyrol (Schwaz and Aschau)
- Foundation 2009

# The product

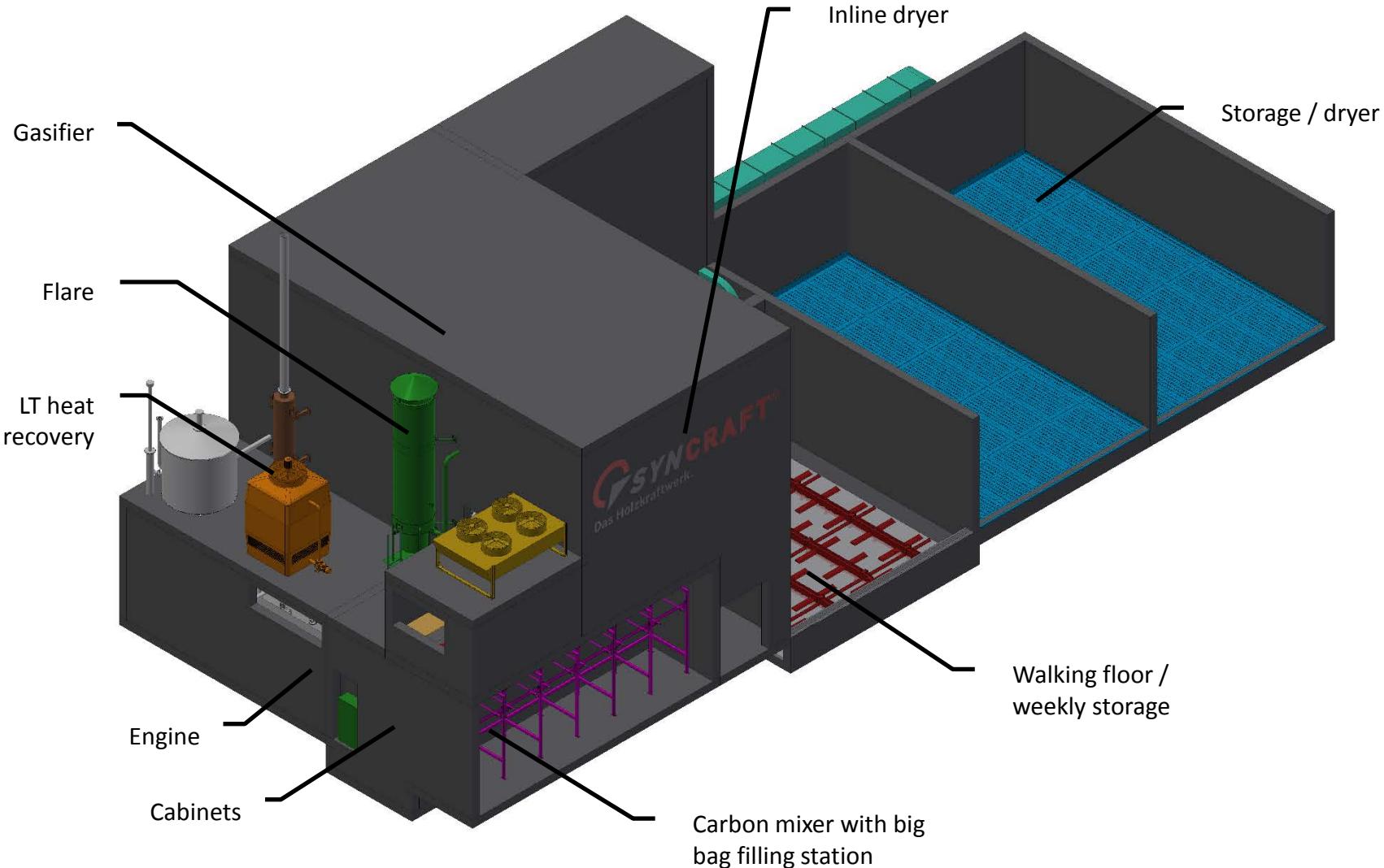


## Wood power plants in the power range up to 400kW\*

	CW 700-200	CW 1000-300	CW 1200-400
Electrical power	200 kW	300 kW	400 kW
Thermal power (basic variant)	326 kW	488 kW	615 kW
Thermal power up to	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 <sub>el</sub>	0.69 kg/kWh <sub>el</sub>	0.67 kg/kWh <sub>el</sub>
Charcoal by-product	1.95 m <sup>3</sup> /d	2.9 m <sup>3</sup> /d	3.7 m <sup>3</sup> /d

\* In combination of multiple plants in parallel higher power levels are achievable

# The wood power plant



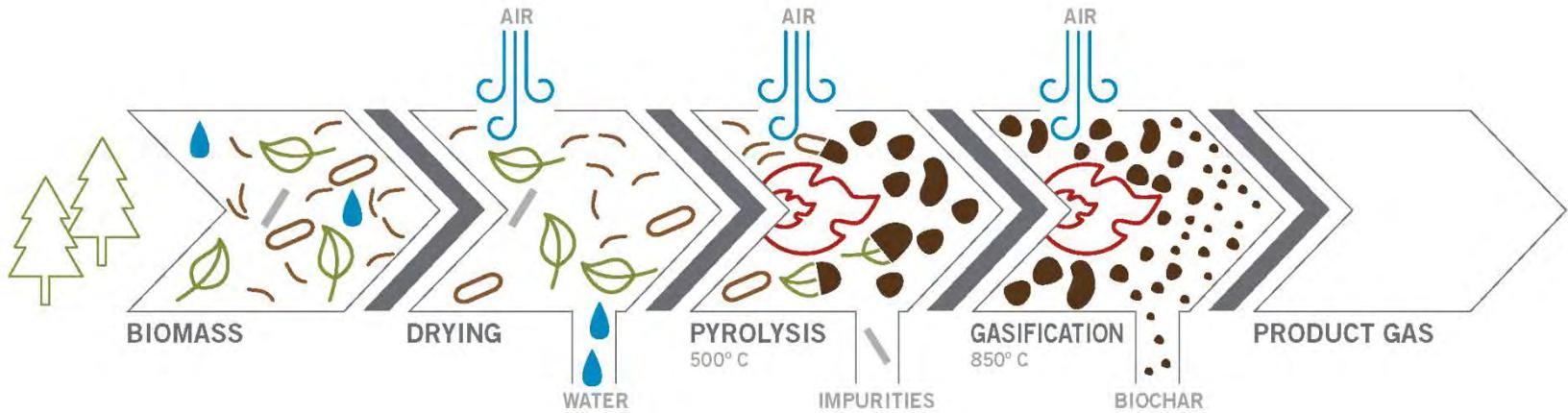
# The wood power plant

**SYNCRAFT®**  
Das Holzkraftwerk.



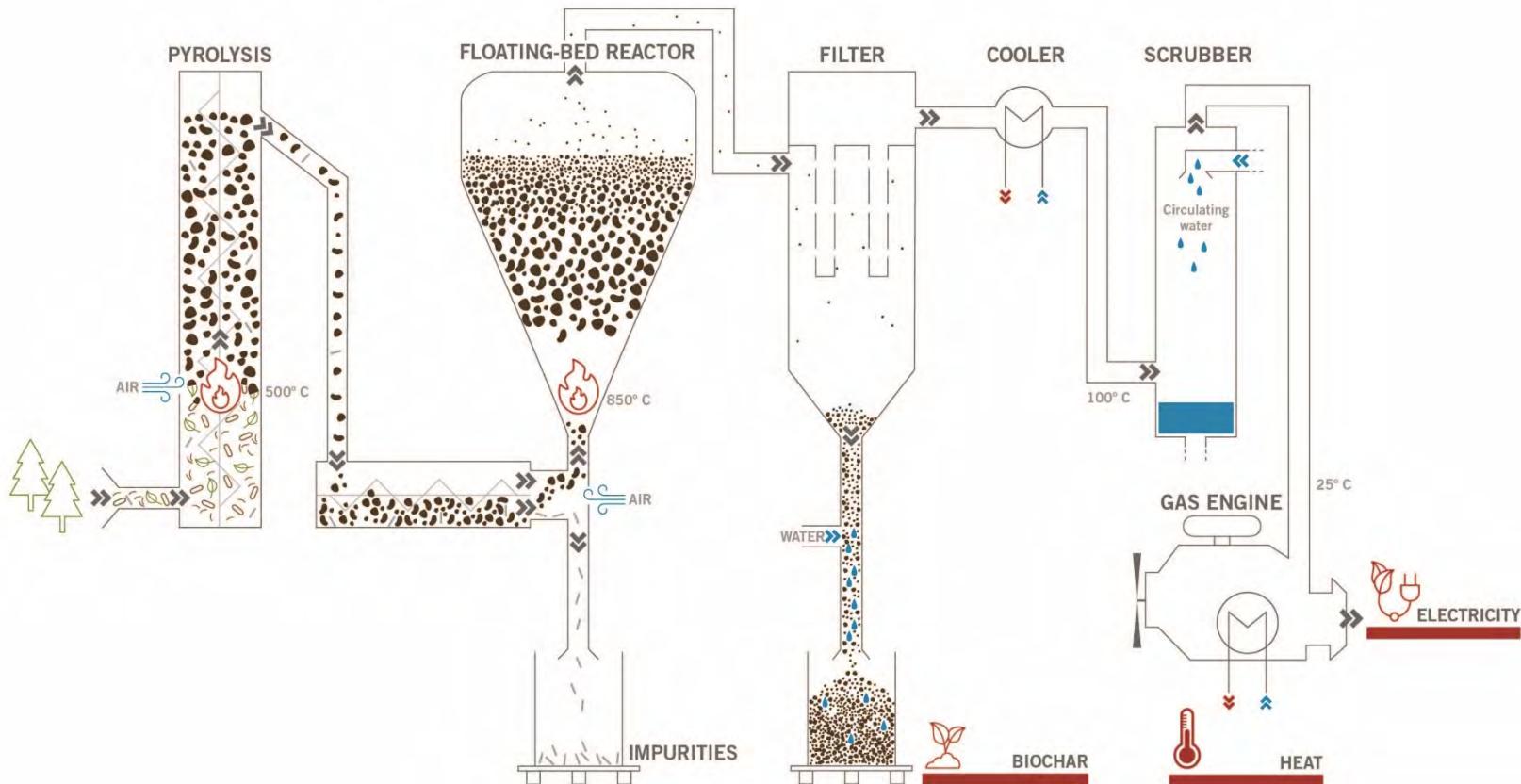
# The process

## Process flow scheme



Multi-staged conversion process of wet, solid biomass into a clean producer gas.

# The technology



The fuel including  
fines and bark



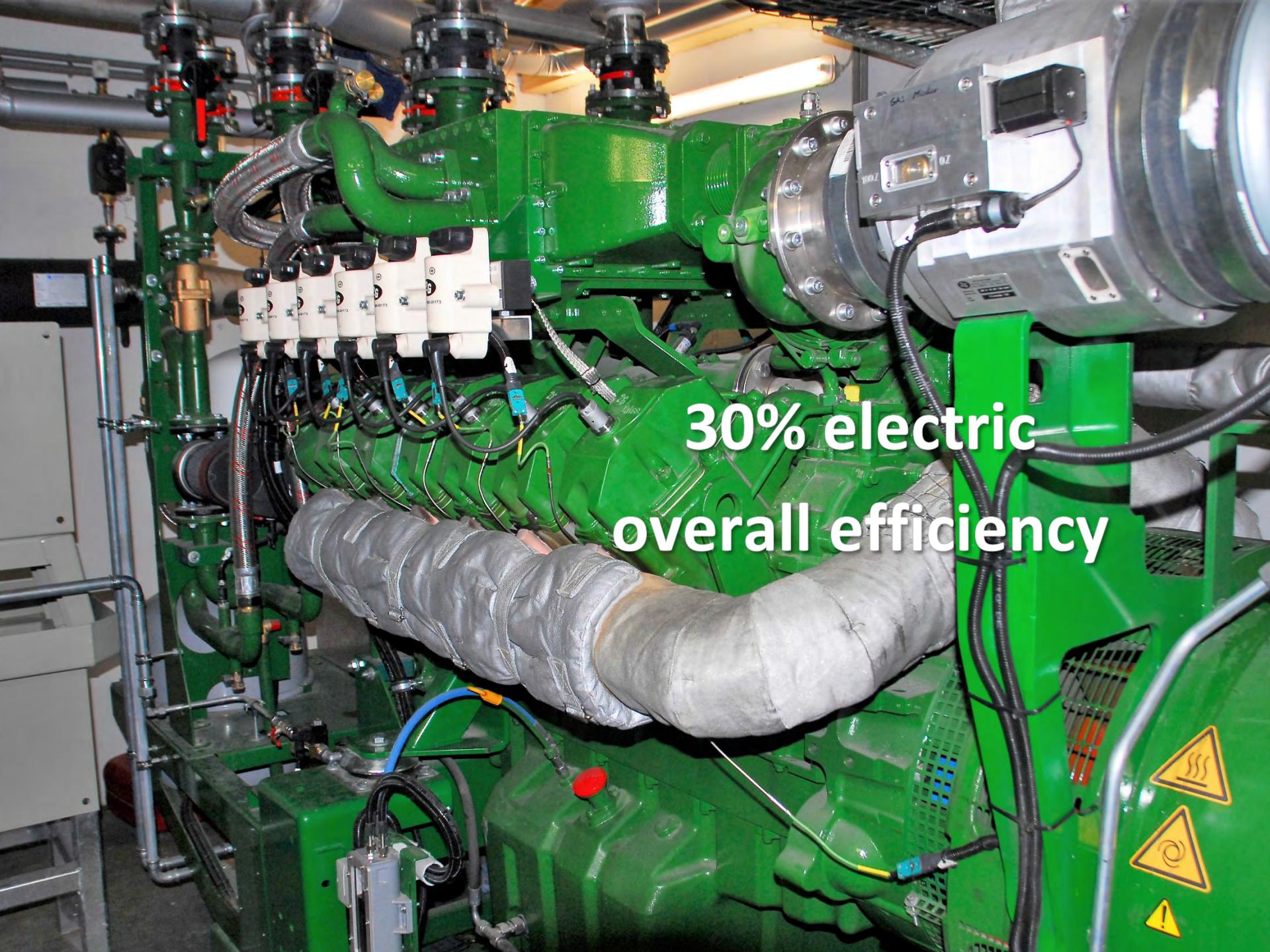


**Clear condensate  
without any treatment**

By-product

Premium Biochar / Charcoal





A large green industrial engine, likely a gas turbine, is shown from a side-on perspective. The engine is complex, featuring numerous pipes, valves, and sensors. A prominent grey flexible exhaust duct is attached to the front of the engine. The body of the engine is painted a bright green color. In the bottom right corner, there are three yellow warning signs with black symbols: a triangle with a flame, a triangle with a swirl, and a triangle with an exclamation mark.

30% electric  
overall efficiency

A large, transparent industrial reactor vessel is shown from a slightly elevated angle. Inside the vessel, a dense, granular material, likely a catalyst or biomass, is suspended in a fluidized state, creating a 'floating fixed-bed'. The vessel is surrounded by a complex network of black and red industrial piping and sensors. The background shows the interior of a factory or laboratory setting.

**Advantages only  
possible due to the  
unique floating-fixed-bed  
reactor.**

# The fuel makes the difference

50% of operational costs are related to the fuel.



**Wood chips**

**0\* – 110 EUR / ton**

185.000 EUR annual fuel costs\*\*

**High Quality wood chips**

**110 – 175 EUR / ton**

303.000 EUR annual fuel costs\*\*

**Wood pellets**

**180 – 250 EUR / ton**

421.000 EUR annual fuel costs\*\*

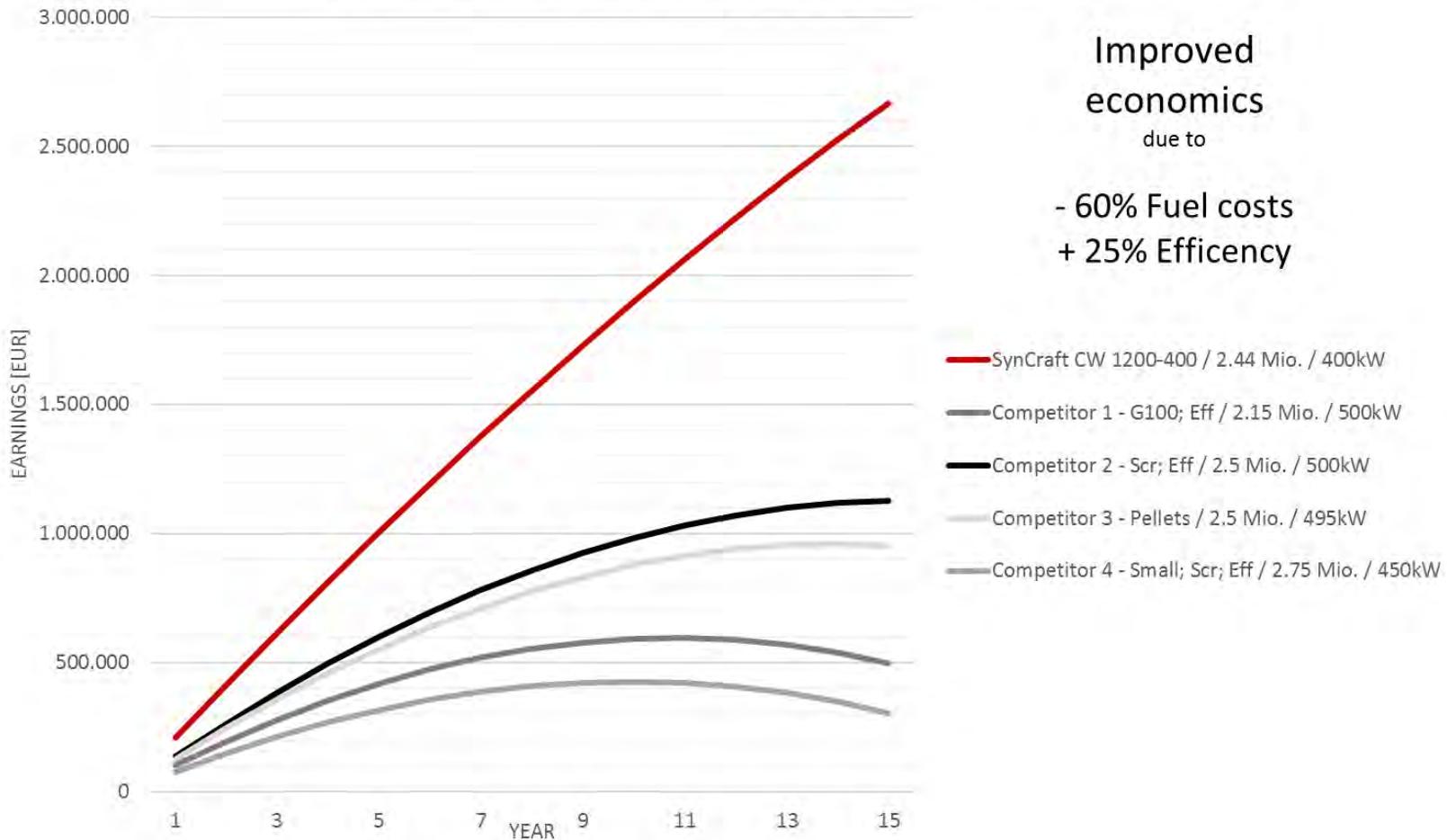
\* Utilization of demolition wood chips possible

\*\* Based on a 1 MW fuel power plant

# The fuel makes the difference

## Comparision of economics

Basis: 22,22 cent/kWh power, 3 cent/kWh heat, 7.500 hours per year, 4% interest; 2% rising prices; G100 chips 150 €/t; Standard chips (15% fines) 100€/t; Pellets 190 €/t; O&M and investment derived from manufacturerer data



# The References (selected)



## SYNCRAFT®Werk CW 1000-300 / Innsbruck / AT

Commissioned early **2017**; produces **261kW** power and **601kW** heat. Delivered including low-temperature heat utilisation and dryer.



## SYNCRAFT®Werk CW 1200-400 / Stadl / AT

Commissioned end **2016**; produces **324kW** power and **784kW** heat. Delivered including low-temperature heat utilisation and dryer.



## SYNCRAFT®Werk CW 700-200 / Dornbirn / AT

Commissioned end **2014**; produces **220kW** power and **500kW** heat. Delivered with 185kW power. Low-temperature heat utilisation retrofitted 2016.



## SYNCRAFT®Werk CW 1000-300 / Vierschach / IT

Commissioned mid **2014**; produces **300kW** power and **488kW** heat. Gas engine, dryer and feeding system supplied by customer.

Many thanks. Questions?



**Regional**  
Wood-Energy

**Power** Households  
Patent CO<sub>2</sub>-neutral Jobs  
MCI-spinoff E-mobility

High-tech  
Renewable  
Wood-utilisation

**Added-value**

Tyrolean-technology

**Baseload-supply**

The central text is arranged in a grid-like structure. 'Regional' and 'Wood-Energy' are stacked vertically. 'Power' is positioned below them, with 'Households' above 'Jobs'. Below 'Power' are four descriptive terms: 'Patent CO<sub>2</sub>-neutral', 'MCI-spinoff', 'E-mobility', and 'High-tech, Renewable, Wood-utilisation'. To the right of 'Power' is a large, bold 'Added-value'. Below 'Added-value' is 'Tyrolean-technology'. At the bottom right is 'Baseload-supply'. The text is all in a bold, red, sans-serif font.