Wood gas power plant without compromise

The fuel makes the difference

SYNCRAFT

www.syncraft.at

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

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Das Holzkraftwerk.

Wood power plants in the power range up to 500kW*

	CW 700-200	CW 1000-300	CW 1200-400	CW 1800-500
Electrical power	200 kW	300 kW	400 kW	500 kW
Thermal power (basic variant)	326 kW	488 kW	615 kW	770 kW
Thermal power up to	481 kW	719 kW	920 kW	1153 kW
Fuel heat capacity	721 kW	1,067 kW	1,368 kW	1,754 kW
Fuel demand	140 kg/h	208 kg/h	267 kg/h	342 kg/h
Specific fuel demand	0.70 kg/kWh_{el}	0.69 kg/kWh_{el}	0.67 kg/kWh_{el}	0.68 kg/kWh_{el}
Charcoal by-product	1.95 m^3/d	2.9 m^3/d	3.7 m^3/d	4.7 m^3/d

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

The wood power plant

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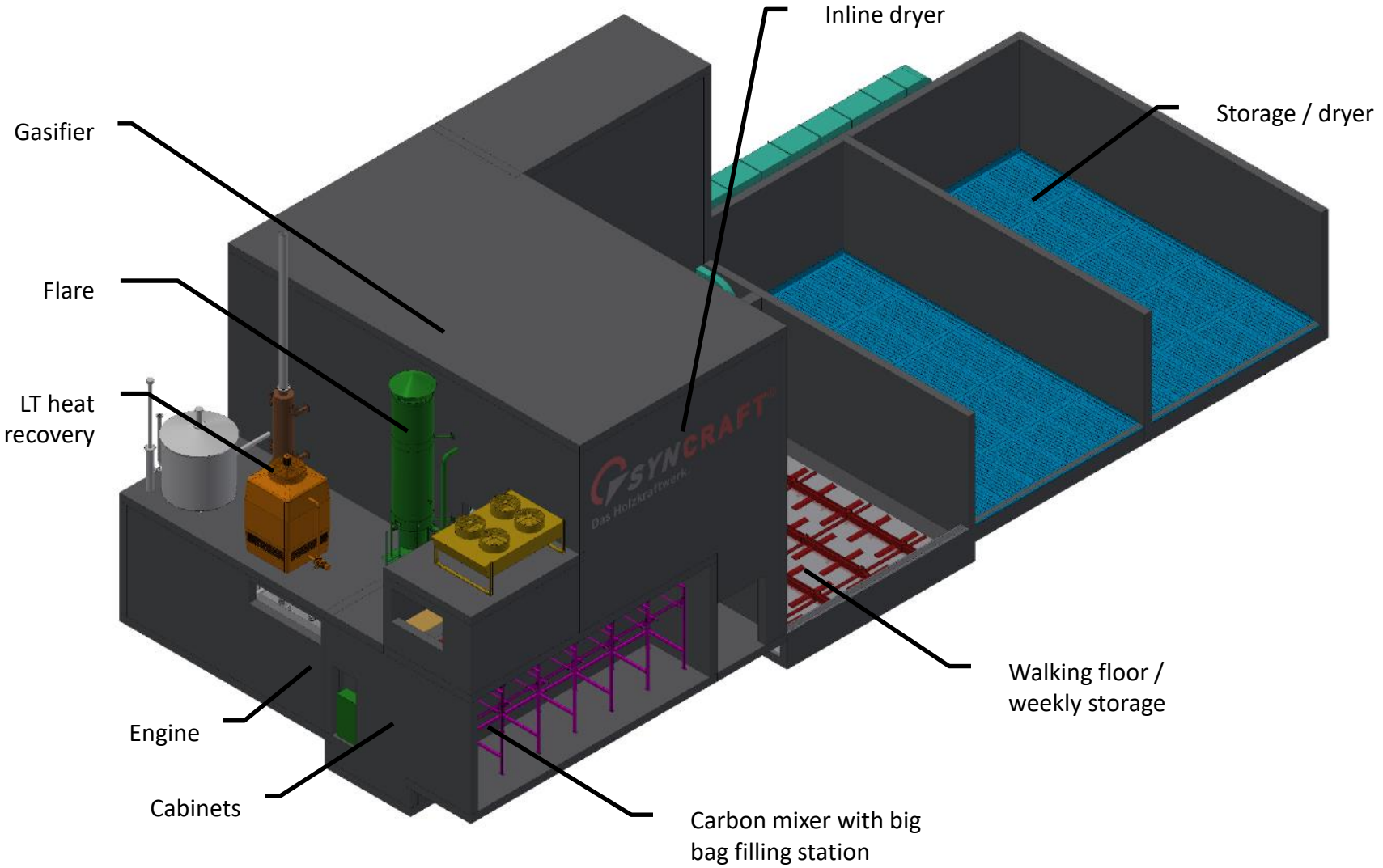

The wood power plant

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The process

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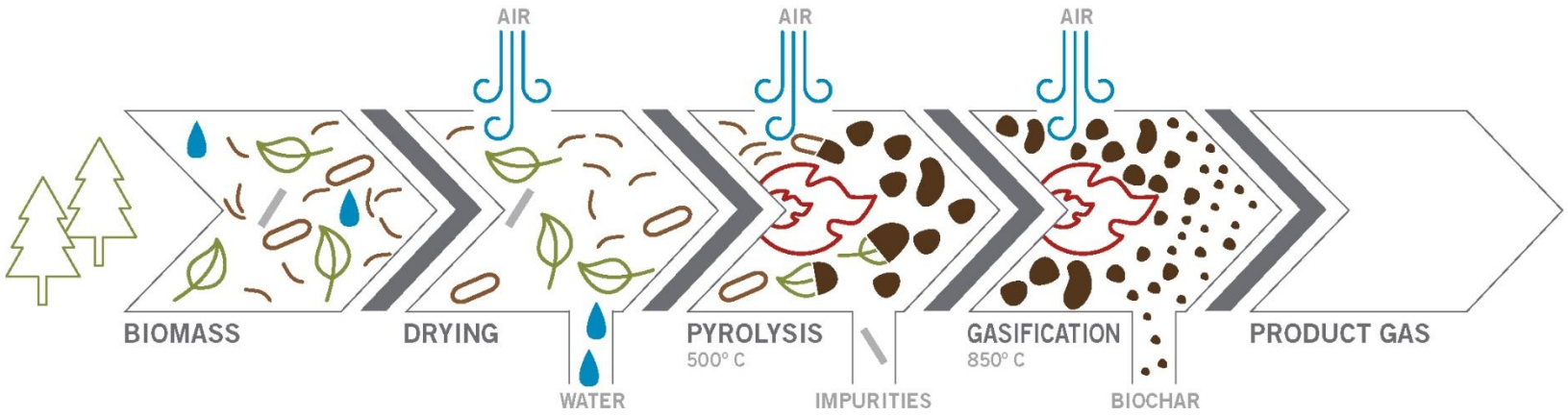
Process flow scheme



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

The technology

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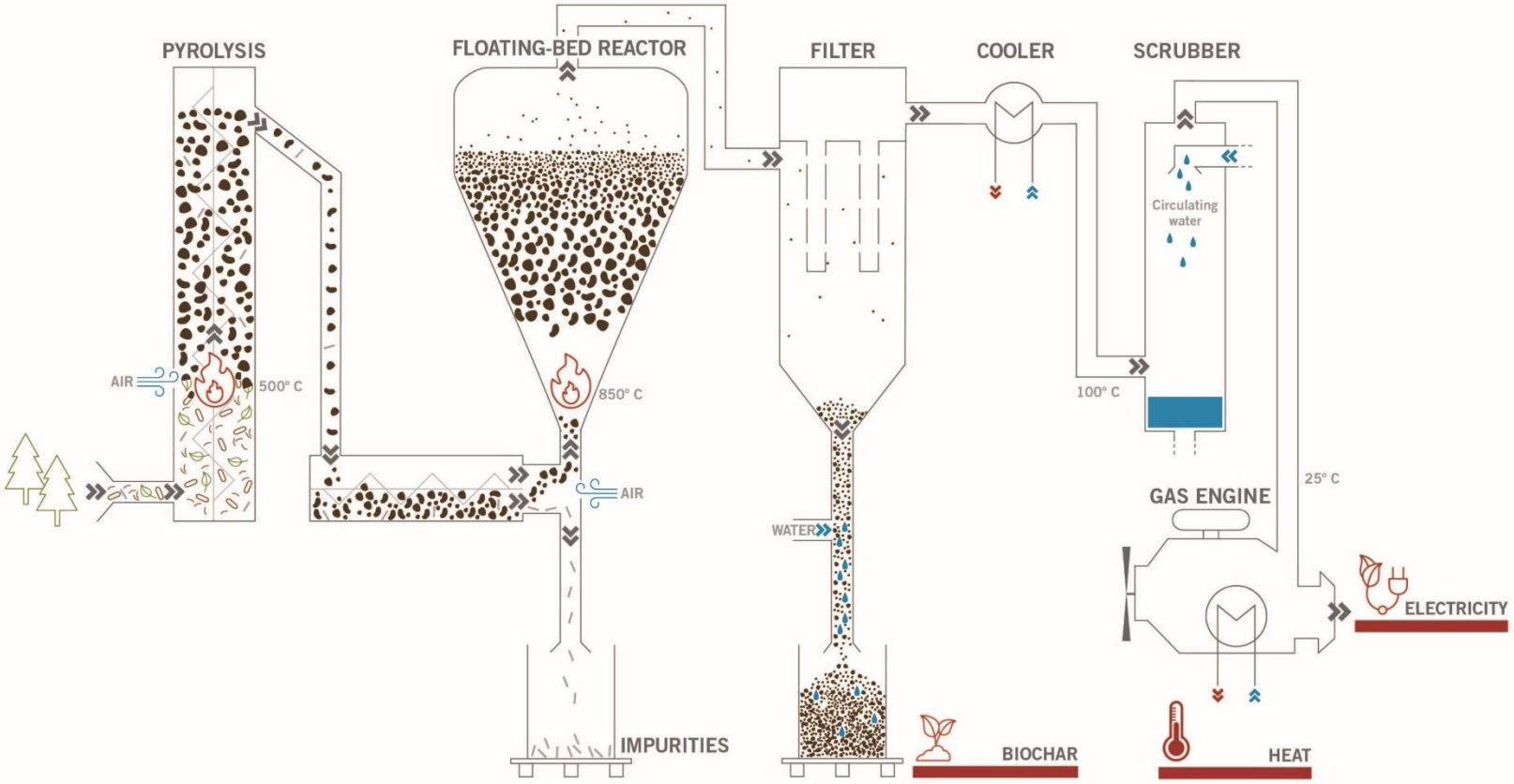

Your advantages

SYNCRAFT®
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- **Forest residues incl. fines and bark**
  - **Reduced operating costs with further potential (waste wood)**
- **Highest efficiency**
  - Further reduced operating costs due to minimised fuel consumption
- **No hidden costs**
  - Low operating costs
- **The charcoal makes the difference**
  - Considerable additional earnings due to valuable by-product biochar (instead of ash)


Forest residues
incl. fines and bark

Your advantages

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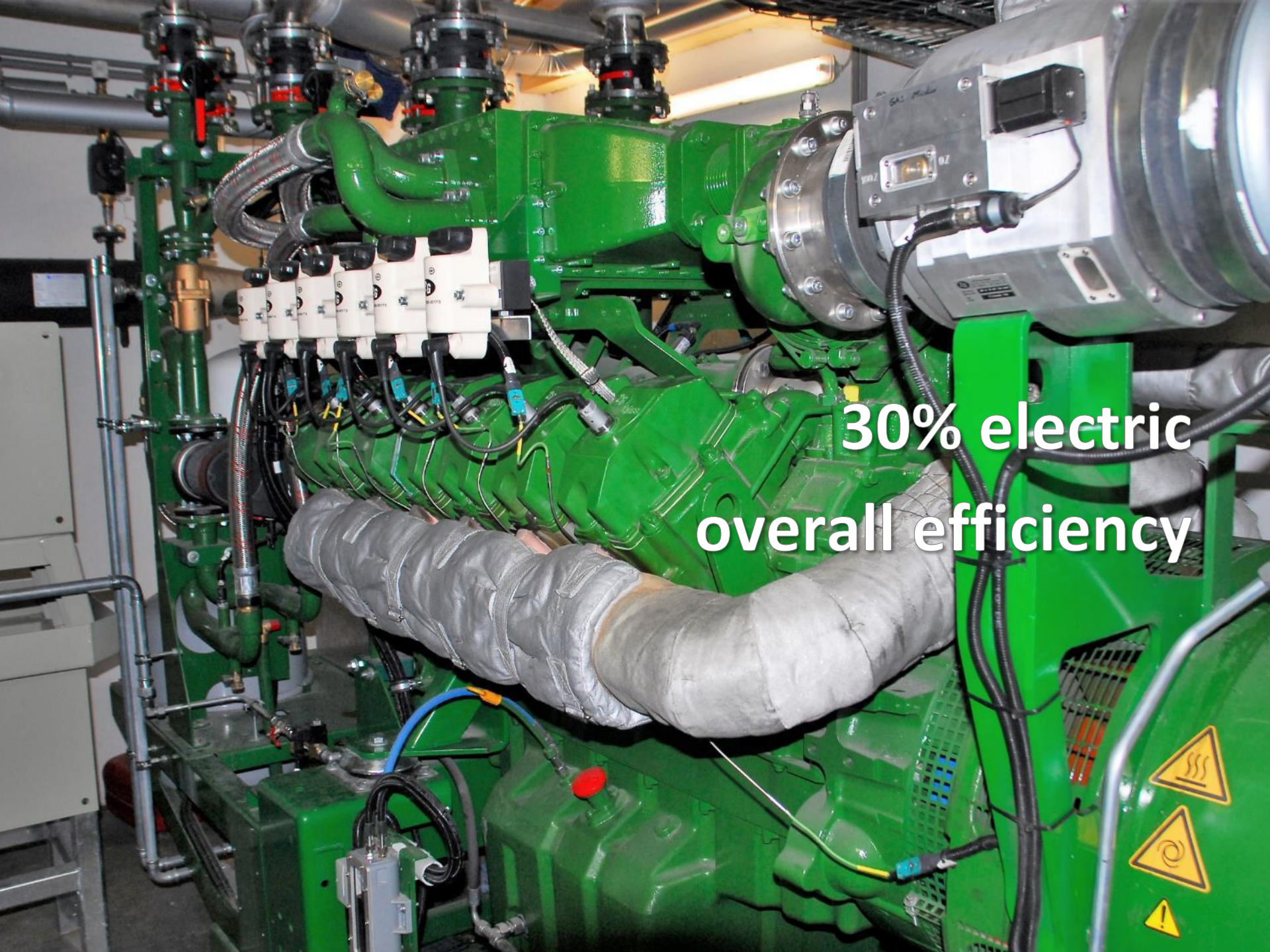
30% electric
overall efficiency

Your advantages

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Das Holzkraftwerk.

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Kondensat
Wasser
Clear condensate
without any treatment

Your advantages

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Das Holzkraftwerk.

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- The charcoal makes the difference
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By-product

charcoal or biochar


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

The economics

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Electricity costs basic

Investment	+ 5 cent/kWh
Financing	+ 1 cent/kWh
O&M	+ 3 cent/kWh
Fuel	+ 7 cent/kWh
Heat benefit	- 6 cent/kWh
Charcoal benefit	- 1 cent/kWh
Electricity costs	+ 9 cent/kWh

The economics

SYNCRAFT®
Das Holzkraftwerk.

Electricity costs with wood pellets

Investment	+ 5 cent/kWh
Financing	+ 1 cent/kWh
O&M	+ 3 cent/kWh
Fuel	+ 14 cent/kWh
Heat benefit	- 6 cent/kWh
Charcoal benefit	- 1 cent/kWh
Electricity costs	+ 16 cent/kWh

The economics

SYNCRAFT®
Das Holzkraftwerk.

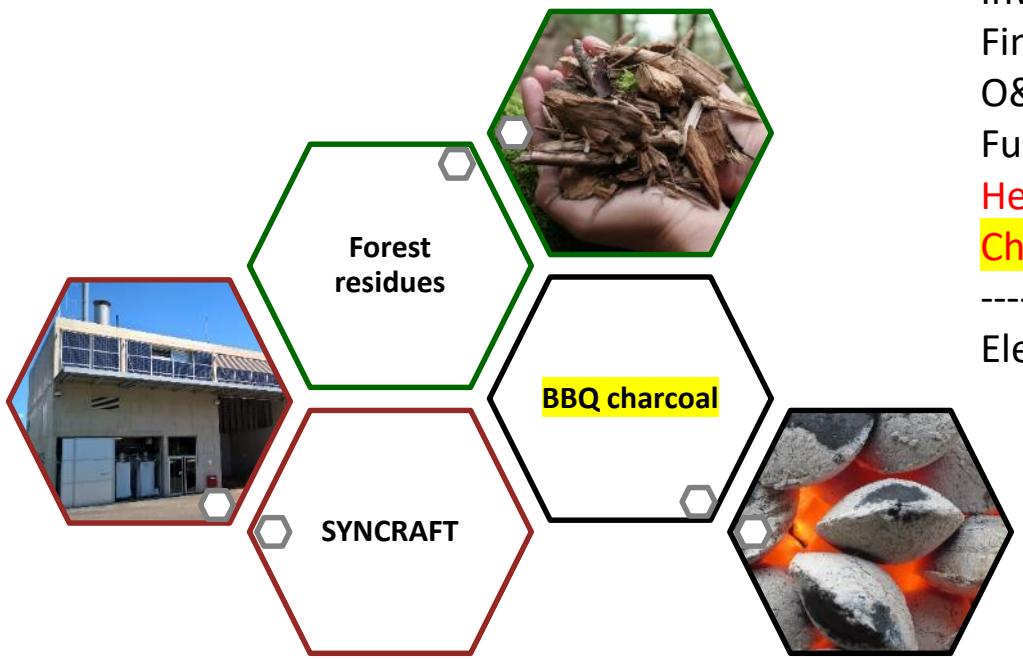
Electricity costs basic

Investment	+ 5 cent/kWh
Financing	+ 1 cent/kWh
O&M	+ 3 cent/kWh
Fuel	+ 7 cent/kWh
Heat benefit	- 6 cent/kWh
Charcoal benefit	- 1 cent/kWh
Electricity costs	+ 9 cent/kWh

The economics

SYNCRAFT®
Das Holzkraftwerk.

Electricity costs with BBQ charcoal

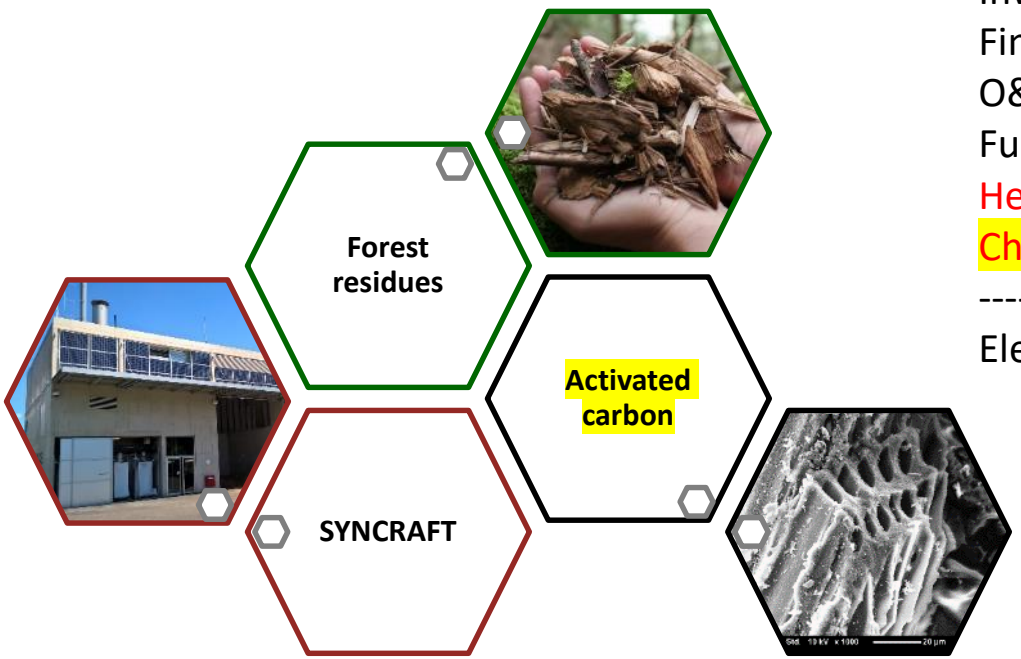


Investment	+ 5 cent/kWh
Financing	+ 1 cent/kWh
O&M	+ 3 cent/kWh
Fuel	+ 7 cent/kWh
Heat benefit	- 6 cent/kWh
Charcoal benefit	- 2 cent/kWh
Electricity costs	+ 8 cent/kWh

The economics

SYNCRAFT®
Das Holzkraftwerk.

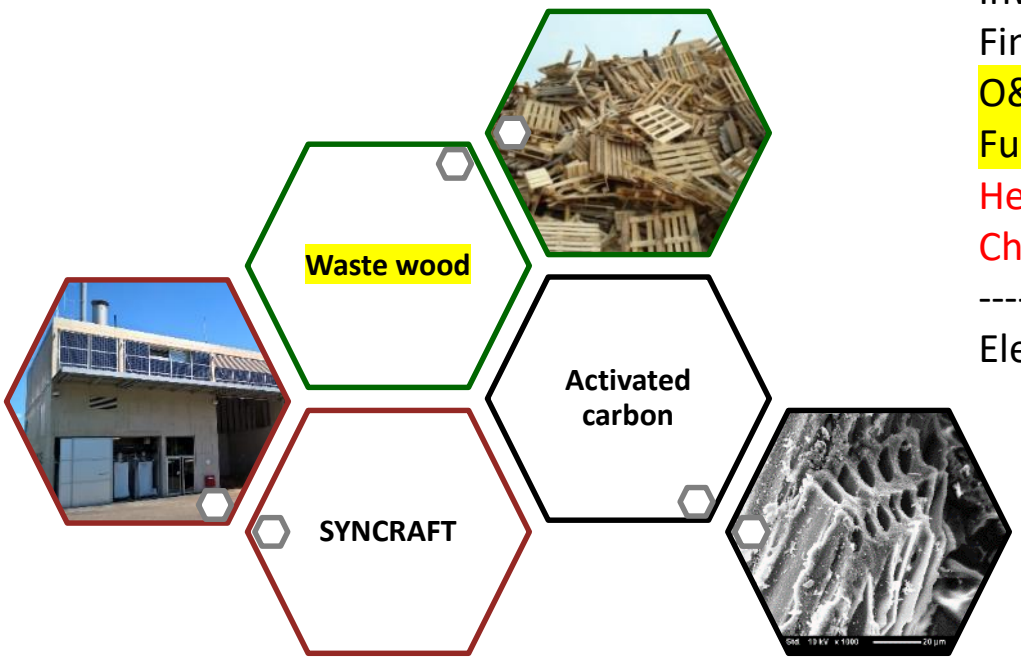
Electricity costs with activated carbon



Investment	+ 5 cent/kWh
Financing	+ 1 cent/kWh
O&M	+ 3 cent/kWh
Fuel	+ 7 cent/kWh
Heat benefit	- 6 cent/kWh
Charcoal benefit	- 4 cent/kWh
Electricity costs	+ 6 cent/kWh

The economics

Electricity costs with waste wood and AC



Investment	+ 5 cent/kWh
Financing	+ 1 cent/kWh
O&M	+ 4 cent/kWh
Fuel	+ 2 cent/kWh
Heat benefit	- 6 cent/kWh
Charcoal benefit	- 4 cent/kWh
Electricity costs	+ 2 cent/kWh

The References (selected)

***SYN*CRAFT®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.

***SYN*CRAFT®Werk CW 1000-300 / Vierschach / IT**
Commissioned mid **2014**; produces **300kW** power and **488kW** heat. Gas engine, dryer and feeding system supplied by customer.


The charcoal makes the difference.
Many thanks for your attention.
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Das Holzkraftwerk.