



**ENERGY
IS A
CIRCLE.**

We close it.



Energy Globe



Trigos

**AWARD
WINNING
TECHNOLOGY**



Climate positive energy system

via biomass gasification combined with biochar production

Gasification

a key technology in the energy transition and for the circular economy



2nd December 2021 - workshop in presence & online
ENEA Trisaia Research Center – SS Jonica 106, km 419 + 500, 75026 Rotondella (MT) - Italy



COMPANY.



2009

MCI Spin-Off
30+ Employees
20 Million
Awarded
1 Aim

AIM.



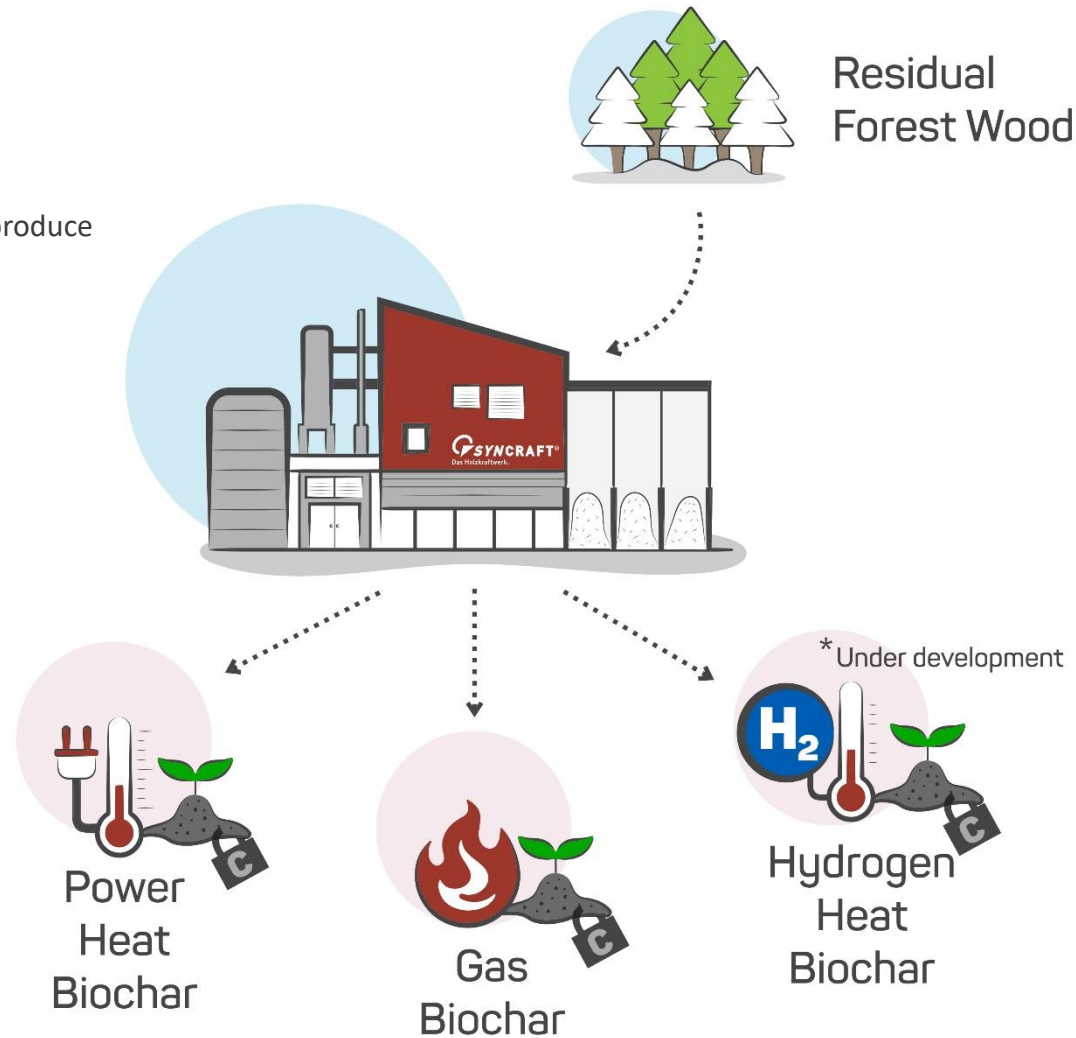
Climate Stabilisation

With our innovative, climate positive energy solutions,
we contribute to climate stabilisation.

Providing SUSTAINABLE ENERGY and
AT THE SAME TIME EXTRACT CO₂ from the atmosphere.

CLIMATE POSITIVE ENERGY SYSTEMS.

From forest residues our systems produce a wide range of sustainable energy products and energy services.

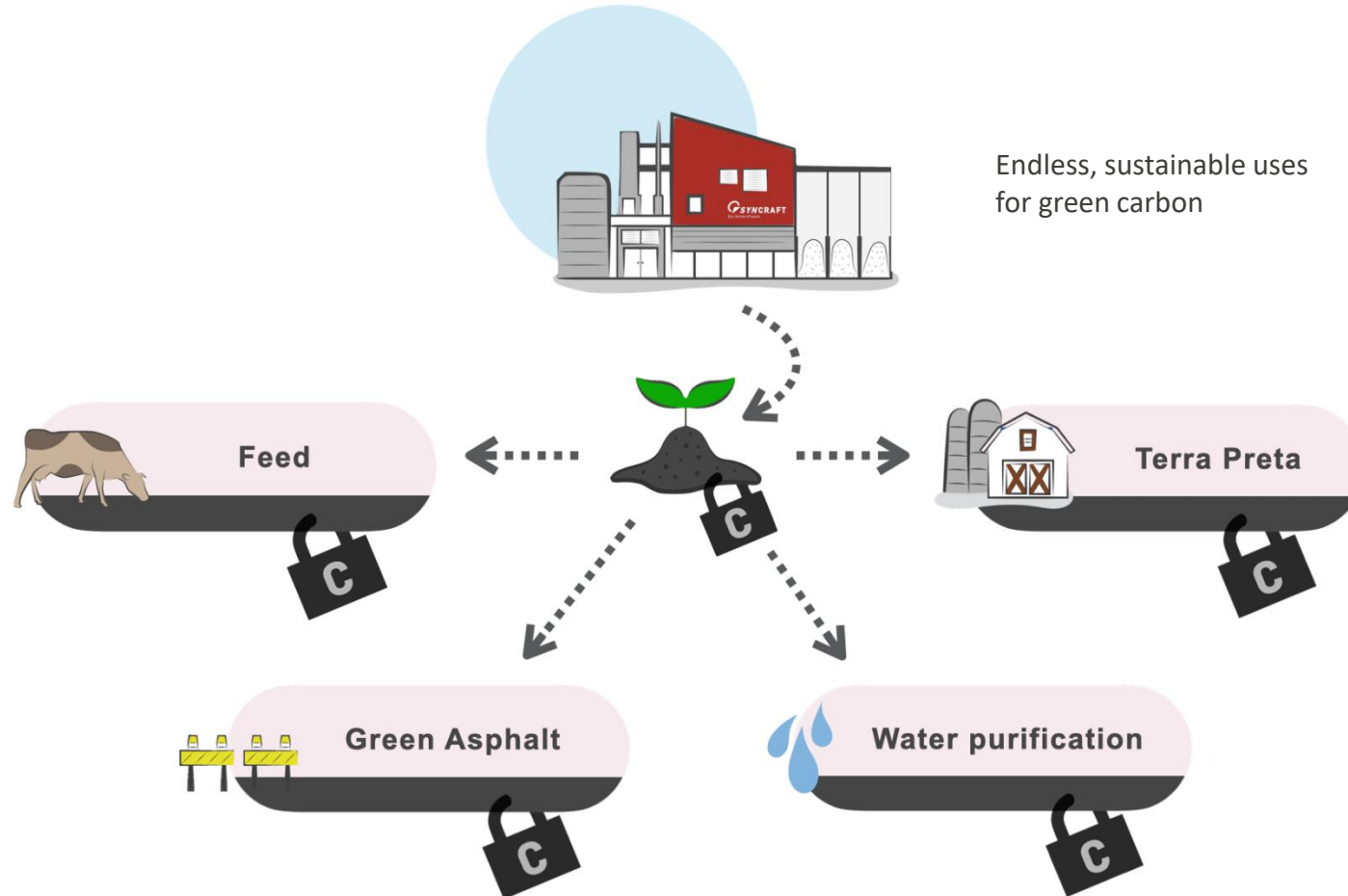


CLIMATE POSITIVE CYCLE.




Trees remove CO₂ from the atmosphere. However, reverse power plants only release part of this CO₂ for energy generation. A significant part is retained as valuable, green carbon. In this way, our energy systems become climate positive.

CLIMATE POSITIVE CYCLE.



THAT'S WHAT DEFINES US!

 Pflanzen
Kohle


EnergieWerk Ilg GmbH

www.biomassehof.at
info@biomassehof.at

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VALUABLE BIOCHAR

BY THE WAY



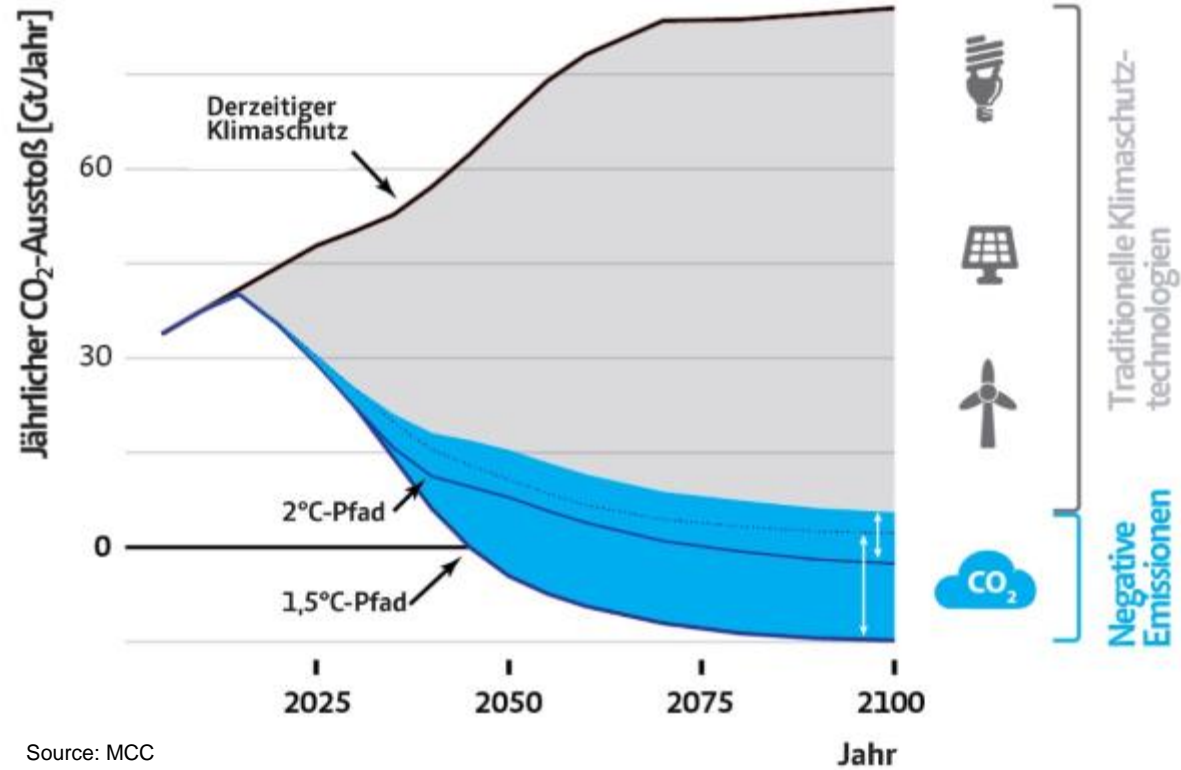
Alpenkohle GmbH

Charline GmbH



CarStorCon Technologies GmbH

CARBON SINK / NEGATIVE EMISSION.



CARBON SINK TRADING.

Carbon Sink Certificate.

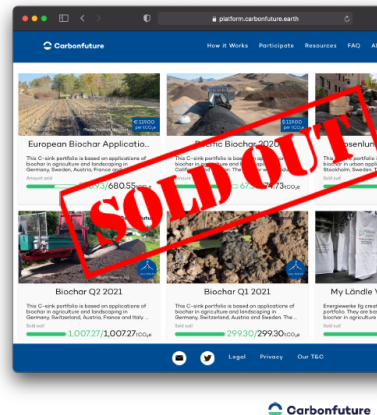
If the biochar produced is not burned again, but used for other purposes, another source of income is created; namely a **climate service** in the form of carbon sink certificates.

These are already available from our systems in stores today: www.carbonfuture.earth

MARKET

TRACTION (BIOCHAR)

- We are **sold out** for 2021
 - 6,000t CO₂e sold (600k EUR)
- **Customers**
 - South Pole, SwissRe, EY, PWC
 - Klarna, Microsoft*
- **Goal 2022: 50,000t (8x)**
 - Shift from spot purchase to large-volume, multi-year procurement



9.67t
CO₂e

Certificate of C-Sink Credits

This certifies that **SynCraft** has financed the removal of **9.67 t CO₂e** from the earth's atmosphere for the duration of **100 years** or longer on **January 4, 2021** by acquiring **23.21%** ownership of the C-sink portfolio **My Ländle Vorarlberg 2020** verified according to the **European Biochar Certificate**.

Transaction Id: 39ab8403-a795-4034-94b7-ca41c0f5018c



Freiburg, January 4, 2021
Dr. Hannes Junginger-Gestrich
(CEO Carbonfuture)



CARBON SINK TRADING.

REMUNERATION

EVERYONE IN THE VALUE CHAIN BENEFITS



CLIMATE POSITIVE ENERGY SYSTEMS.

Aus Waldrestholz produzieren unsere Systeme ein ganze Bandbreite von nachhaltigen Energieprodukten und -dienstleistungen.



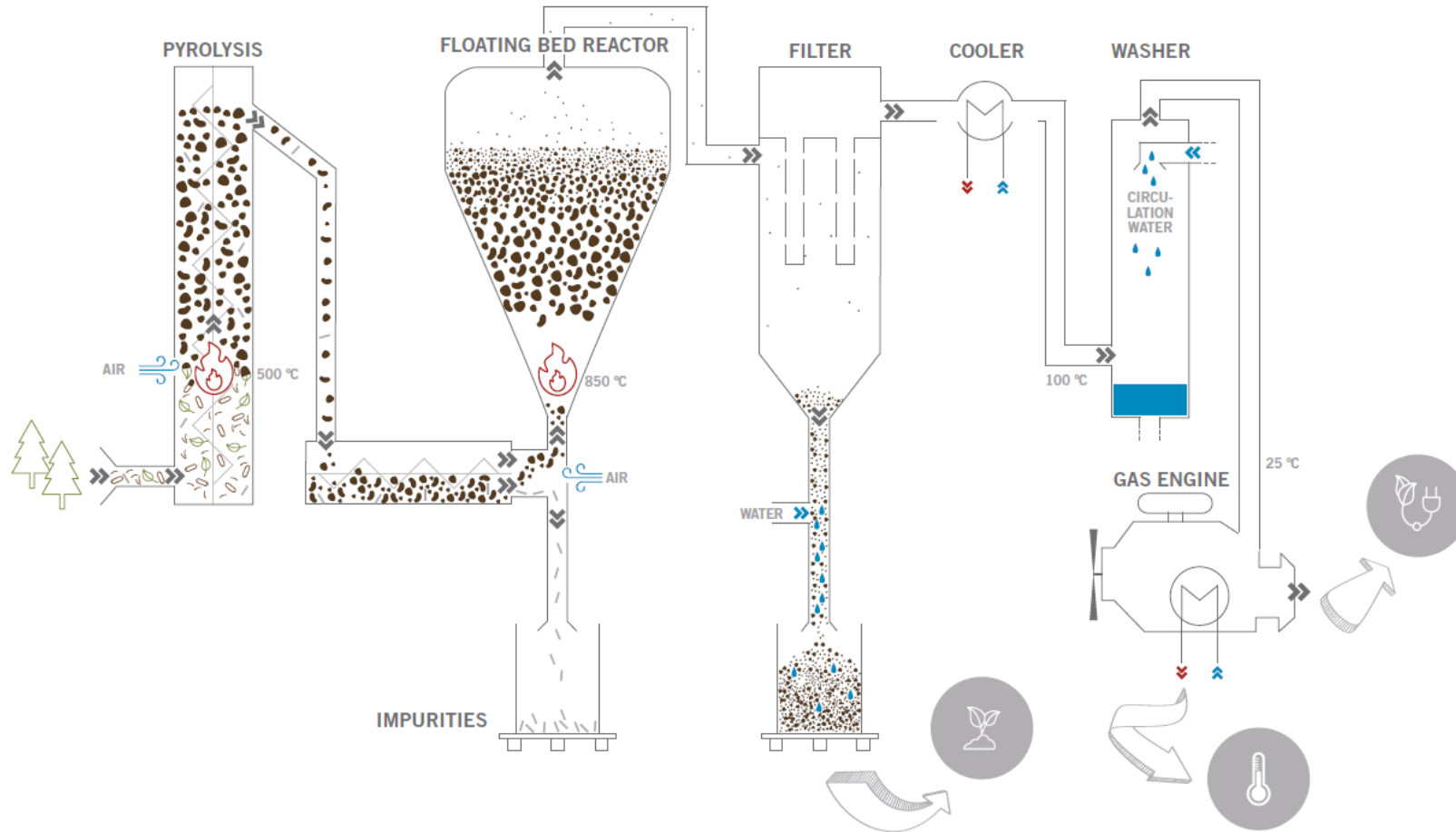
Waldrestholz



POWERPLANT.



POWERPLANT.



PRODUCT RANGE.



CW700-200+



CW1200-400



CW1800-500



CW1800x2-1000

Electrical power	200 kW (1)	400 kW	500 kW	1,000 kW
Thermal power 90 °C	328 kW	572 kW	740 kW	1,404 kW
Thermal power ~50 °C (2)	123 kW	227 kW	250 kW	500 kW
Fuel heat capacity	826 kW	1,429 kW	1,808 kW	3,527 kW
Fuel demand (dry)	161 kg/h	286 kg/h	362 kg/h	705 kg/h
Specific fuel demand (dry)	0.73 kg/kWh el	0.71 kg/kWh el	0.72 kg/kWh el	0.71 kg/kWh el
Premium charcoal	2 m ³ /d	3.5 m ³ /d	4.5 m ³ /d	9 m ³ /d
Space required by gas generator (3)	ca. 100 m ²	ca. 120 m ²	ca. 120 m ²	145 m ²
Space required by engine (3)	ca. 55 m ²	ca. 55 m ²	ca. 55 m ²	65 m ²
Space required for bunker (week's supply)	155 m ³	278 m ³	418 m ³	480 m ³



CW1800-500:
Dornbirn / AT

2019
500kW





CW1800x2-1000:

Laas / IT

2018

1.000kW



CW1200-400:
Ternitz / AT

2020
400kW



 **E&M**
BHKW
des Monats

Bild: Shutterstock, wald / E&M

KWS DER AKTUELLEN ZEITUNGSAUSGABE
Mit Kohle CO2-neutral
Ein neu errichtetes Holzkraftwerk im österreichischen Ternitz liefert nicht nur Strom und Wärme, sondern auch ein hochwertiges Nebenprodukt. Damit ist die Anlage klimaneutral.



CW700-200+
Innsbruck / AT

2017
280 kW

iKB Eins für alle.

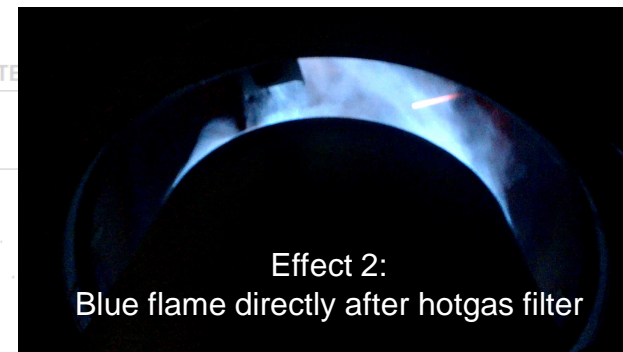
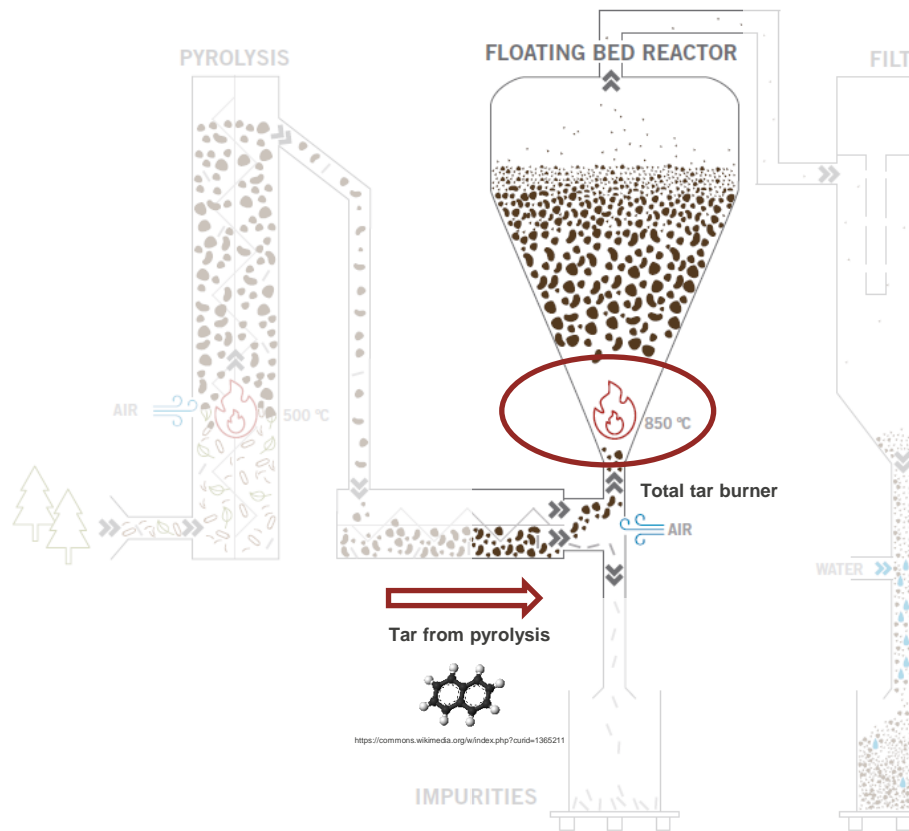


**KLIMA
HELDINNEN**
Das Nachhaltigkeits-Magazin

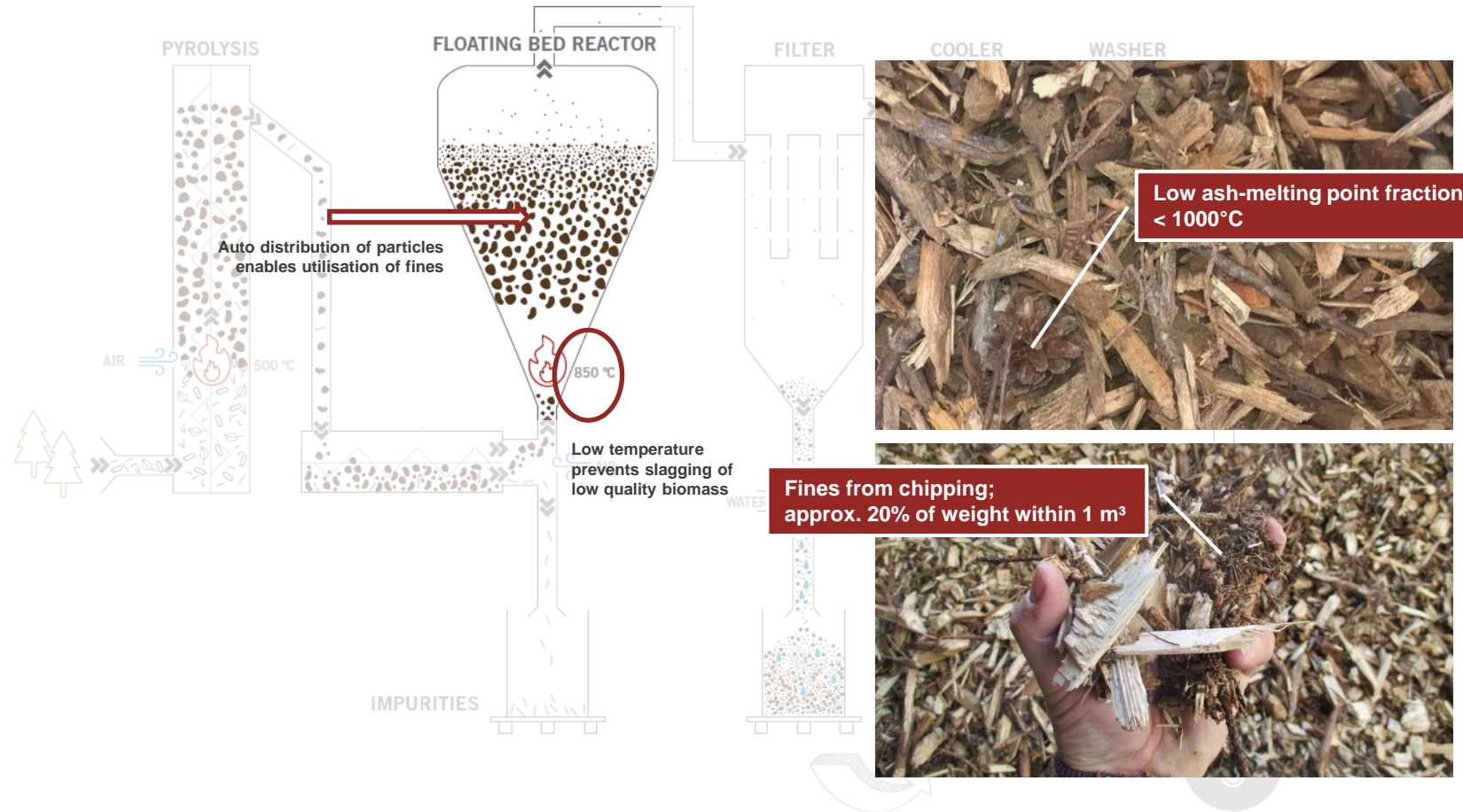
PULS 4




TAR ELIMINATION.



FUEL FLEXIBILITY.





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

Patented Technology
developed at:

MCI[®]

THAT'S WHAT DEFINES US!

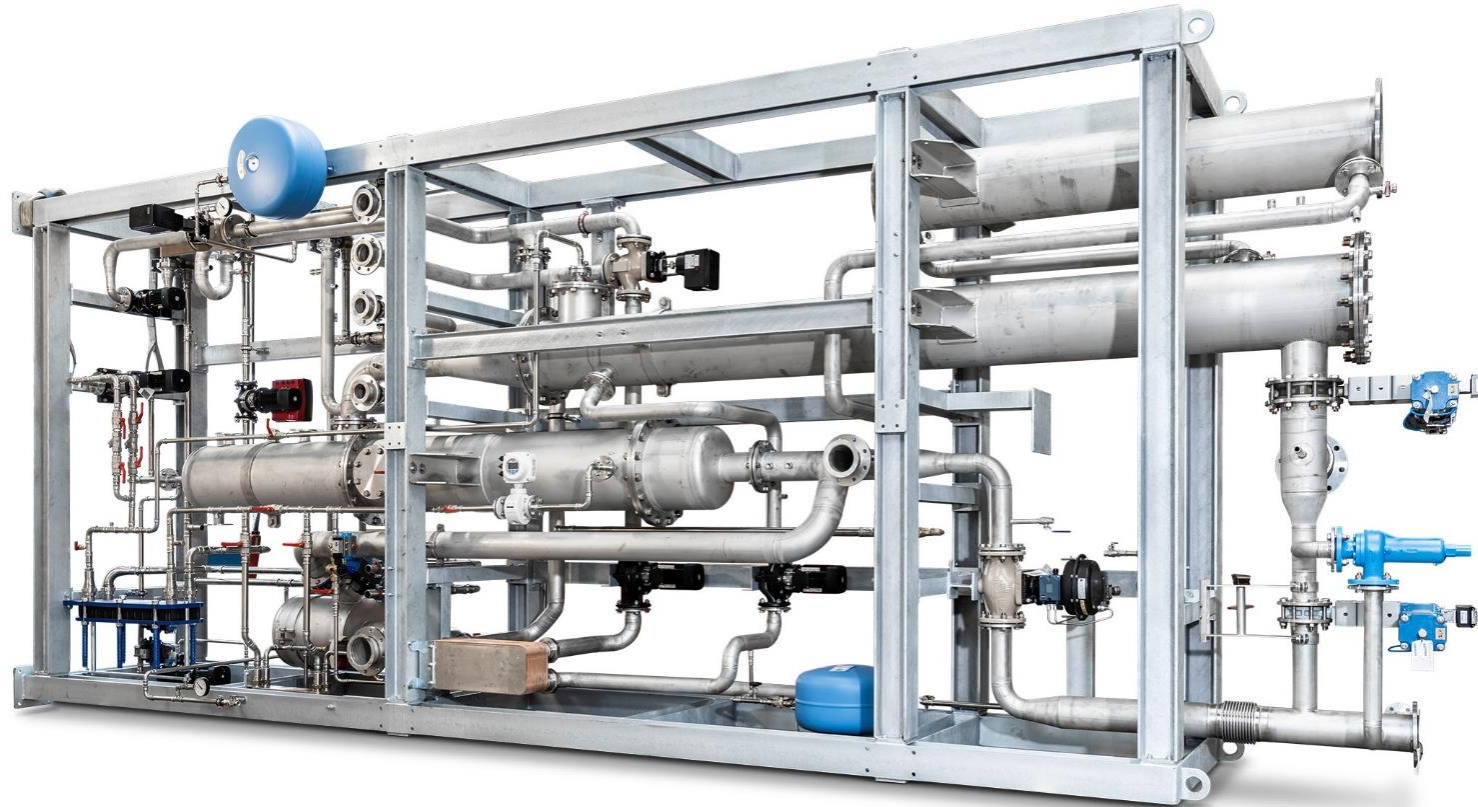
Affordable fuel

forest residue wood chips

Powerplant
Woodfire
H₂



THAT'S WHAT DEFINES US!



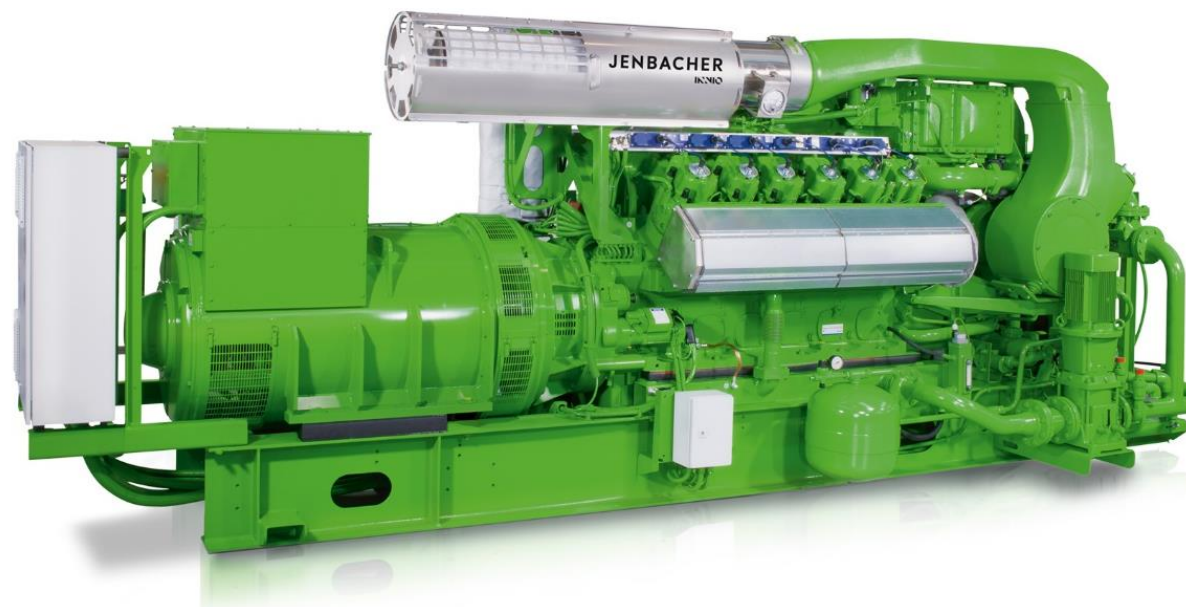
**INDUSTRIAL DESIGN
FOR MAXIMUM INTRINSIC VALUE**

THAT'S WHAT DEFINES US!

2G* engines till 400 kW



INNIO Jenbacher* engines from 400 kW

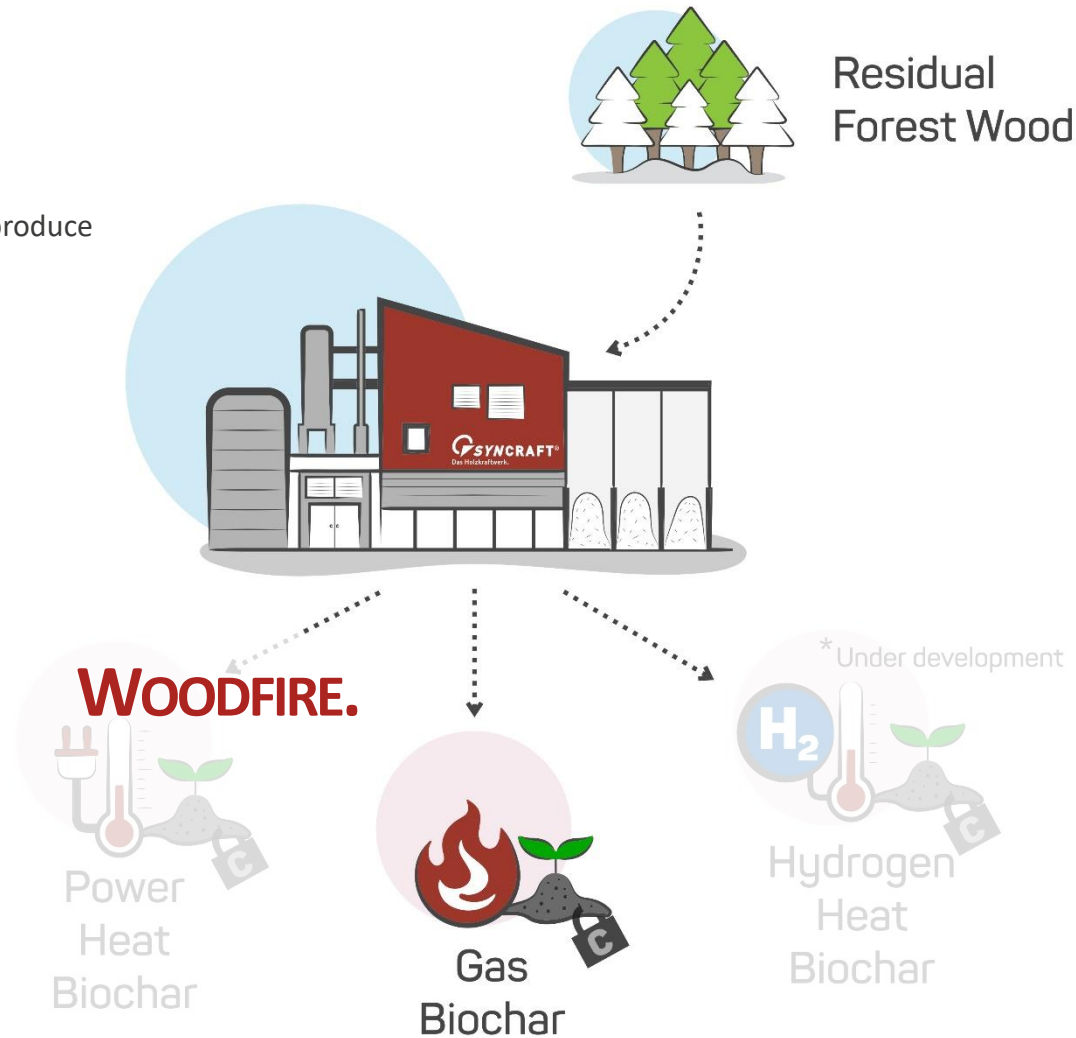


*We are recommended by the leading gas-engine manufacturers.
The engines are provided with full manufacturer warranty.

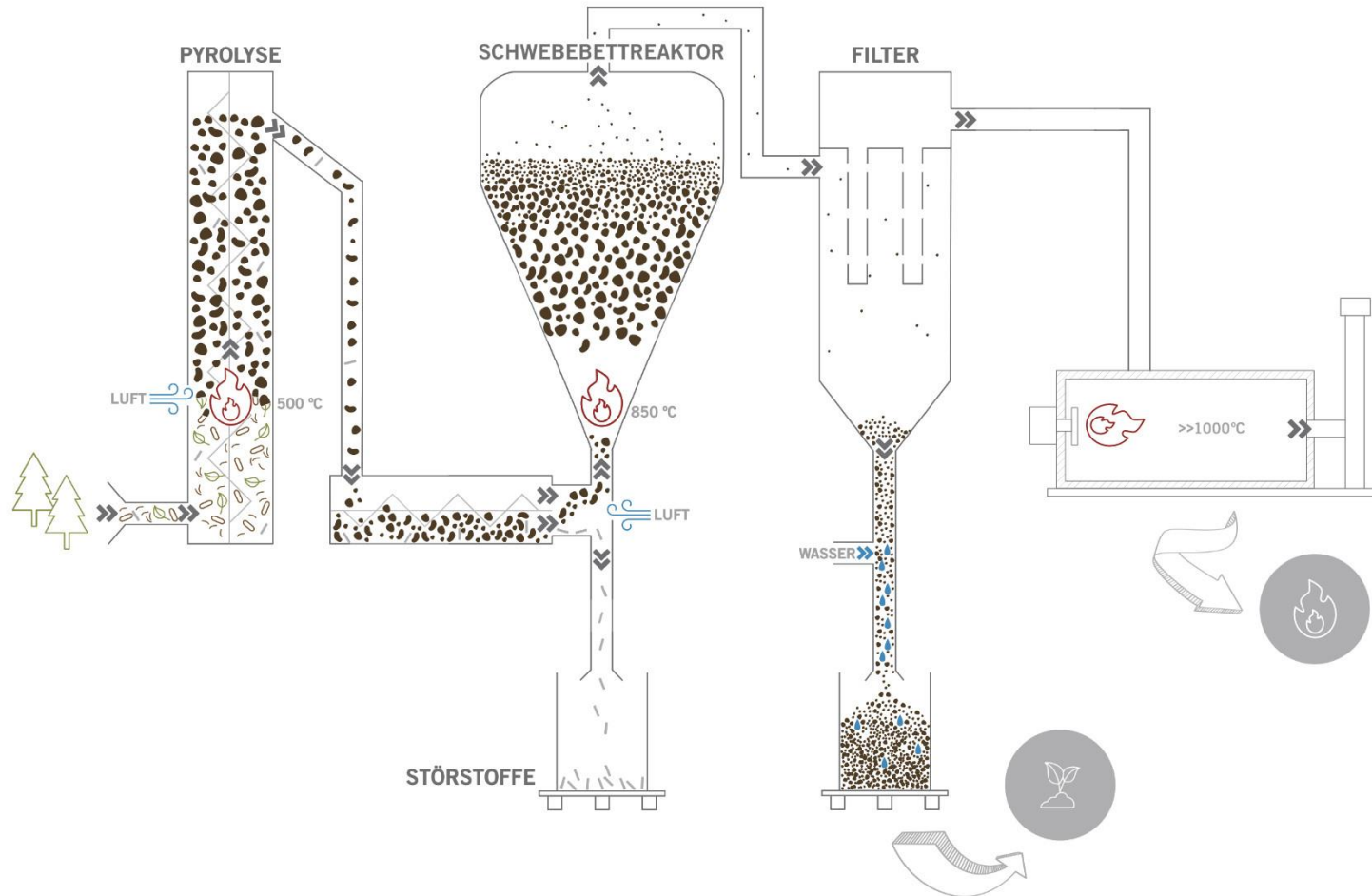
HIGHEST EFFICIENCIES
DUE TO APPLYING THE BEST WOODGAS-ENGINES

CLIMATE POSITIVE ENERGY SYSTEMS.

From forest residues our systems produce a wide range of sustainable energy products and energy services.



WOODFIRE.



THAT'S WHAT DEFINES US!

Affordable fuel

waste wood

Powerplant
Woodfire
H₂



THAT'S WHAT DEFINES US!

#Green, hot Flame

clean and dust free

WOODFIRE ECONOMIC OUTLOOK.

Table 1: comparison of heat supply concepts for an industrial melting furnace with 3.5 MWth heat demand.

	Fossil LPG*	Fossil NG	Green/blue hydrogen	FLOBU-GAS**** forest residues	FLOBU-GAS**** woody residual waste
Heat demand	3.5 MWth	3.5 MWth	3.5 MWth	3.5 MWth	3.5 MWth
Input demand	1,930 t/a LPG	2,020 t/a NG	0.84 t/a	9.1 t/a	9.1 t/a
Fuel costs	27.5 €/MWh	23.8 €/MWh**	60 €/MWh (2€/kg)***	19 €/MWh (80€/t)	4,5 €/MWh (20€/t)
Fossil CO2-emission	5,770 t/a	5,500 t/a	0 t/a	0 t/a	0 t/a
Plant costs*****	250,000 €/a	60,000 €/a	60,000 €/a	450,000 €/a	450,000 €/a
CO2-costs @50€/t (CO2-tax)	288,000 €/a	277,000 €/a	0 €/a	0 €/a	0 €/a
Heat supply costs (fuel cost+COP+CO2-costs)	46 €/MWh	36 €/MWh	62 €/MWh	41 €/MWh	23 €/MWh

*) calculation based on existing plant of project partner

**) statistic Austria, 2020: mean value for industrial applications

***) not state-of-the-art, target value 2030, compare [ISBN: 978-92-9260-151-5

Citation: IRENA (2019), Hydrogen: A renewable energy perspective, International Renewable Energy Agency, Abu Dhabi]

****) assumptions: cold gas efficiency of gasification 72%

*****) for LPG, NG and hydrogen only OPEX, for FLOBU INVEST/20 years and OPEX

NUMBERS & FACTS



29



90,2 %



6,5 MW



**34.000
Tonnen**



BECAUSE WE HAVE TO GO MUCH FURTHER ...

We work together with partners to not only build climate positive energy systems, but also to produce them climate neutral or NET0 and thus offer our customers "ballast-free".

And not only in relation to Scope 1 and 2, i.e. what we directly cause ourselves, but also in relation to Scope 3, ie considering the supply chains!

You can find more about this at:
[WE ARE GOING NET0 \(SYNCRAFT.AT\)](https://www.syncraft.at)

**WE ARE
GOING
NET
ZERO**





**LET'S WORK
TOGETHER**

office@syncraft.at

