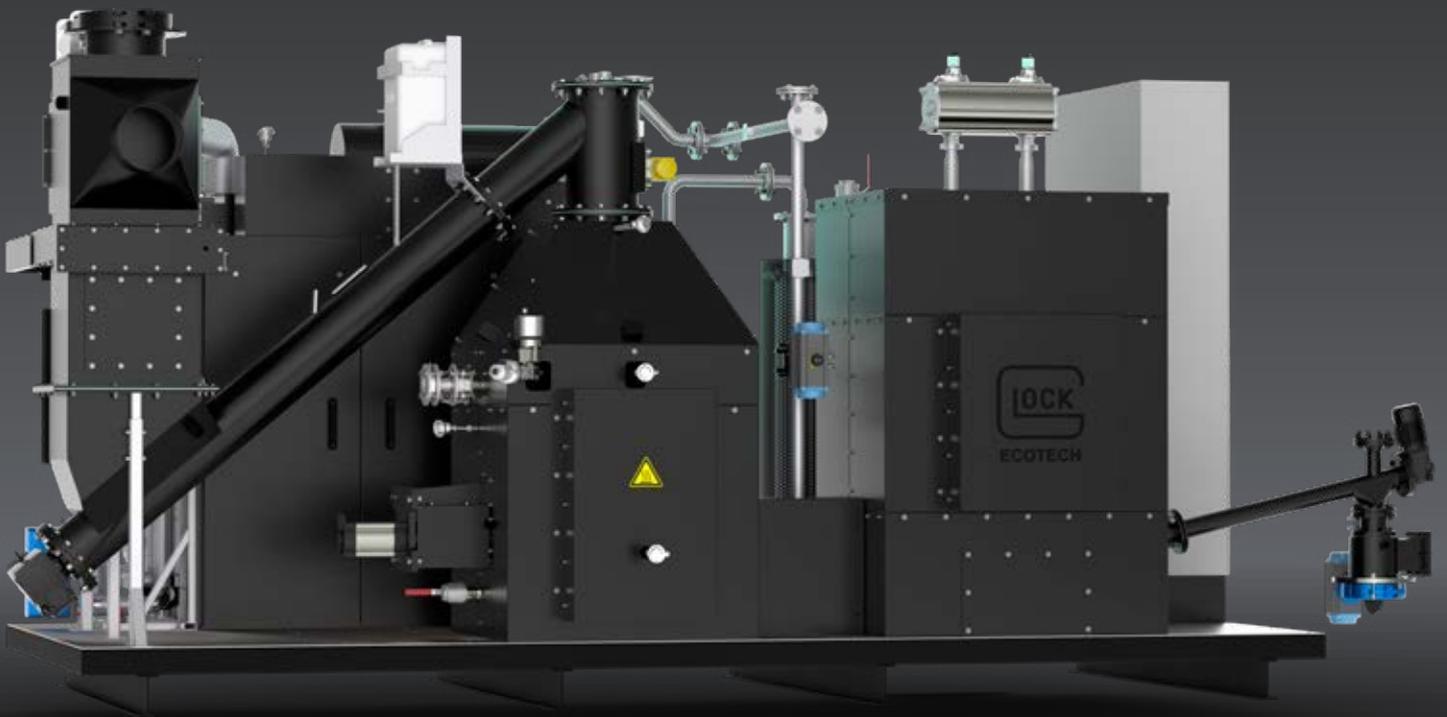




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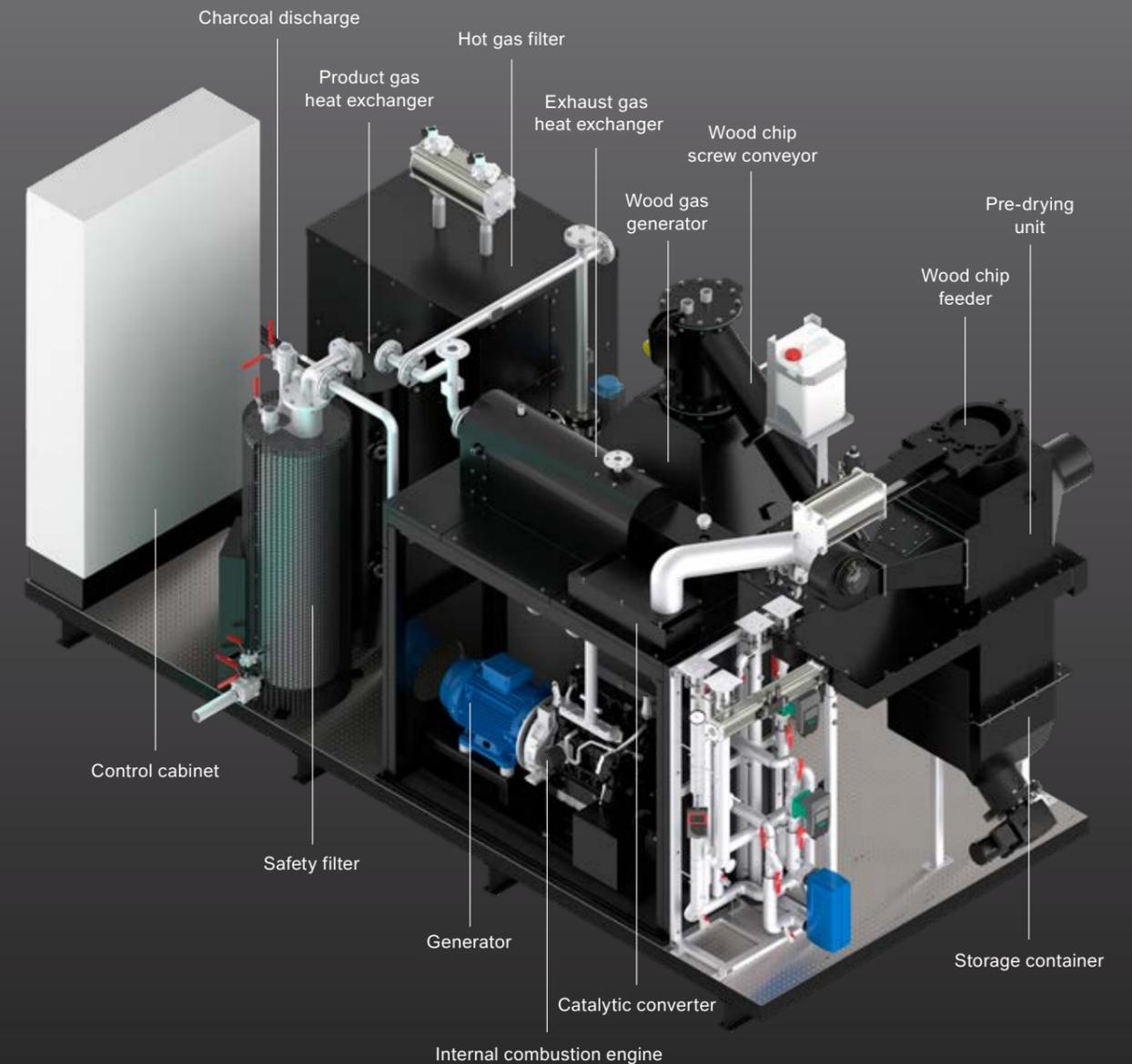


GLOCK CHP

GLOCK Ecotech combined heat and power plants convert natural wood chips efficiently and sustainably into power and heat.

With their 8000 operating hours per year, the GLOCK Ecotech combined heat and power plants based on regional biomass provide a constant supply of energy, independent of weather conditions and seasons.

- Plug & Play – factory tested and delivered ready to use
- Patented wood gasification and wood cleaning technology
- Reliable operative management thanks to modern control system
- Serial operation of multiple systems possible
- Various applications for produced plant-based biochar
- Simple integration into existing hot and cold water systems
- Designed to service and simple operation



GLOCK CHP 18

19 kW

Electrical output*

44 kW

Thermal output*

~ 12 t

Biochar output**

GLOCK CHP 50

57 kW

Electrical output*

120 kW

Thermal output*

~ 33 t

Biochar output**

* Per year at 8000 operating hours

** At 143 kg/m³ specific weight of plant-based biochar (dry matter)
Rated outputs are averages and may vary in individual cases.



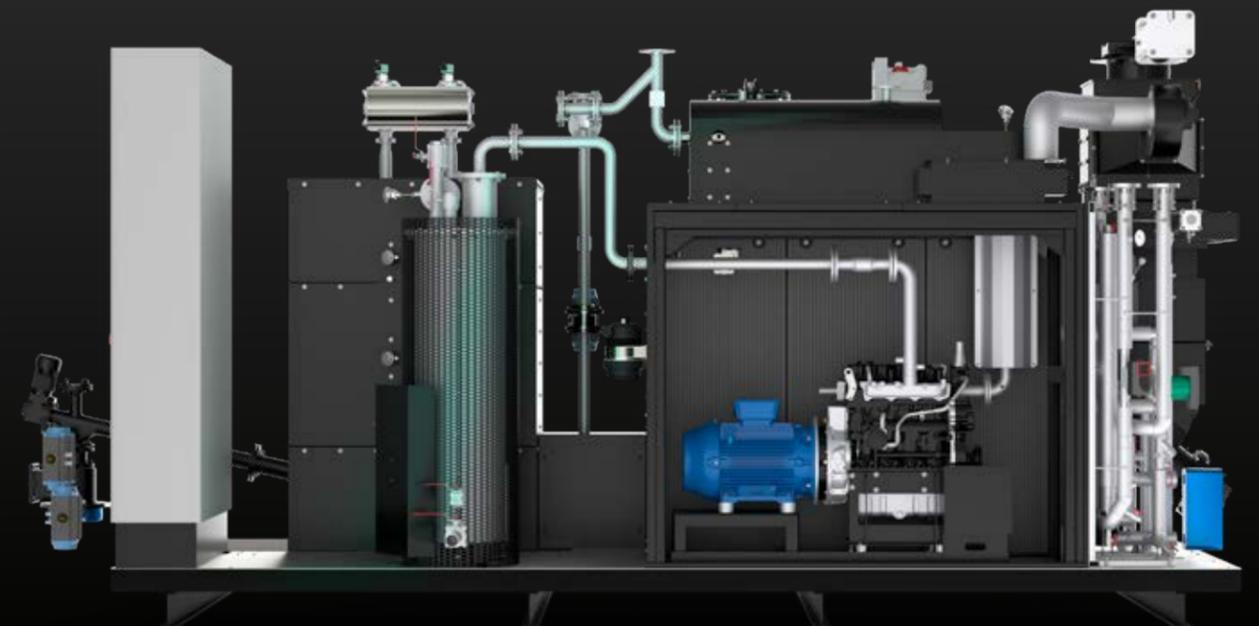
Example of a serial setup:
GLOCK Ecoenergy operates nine GLOCK
CHP 50 and one GLOCK CHP 18 for its
district heating network in Griffen, Austria.



Biomass from the region – Energy for the region

GLOCK Ecotech's combined heat and power plants are used primarily in the sectors of industry, tourism, agriculture, and energy communities.

The use of regional biomass stabilizes energy costs and provides an important contribution to climate protection.



Combined heat and power plants

GLOCK CHP

	GLOCK CHP 18 Gen 1	GLOCK CHP 50 Gen 2
Performance data		
Electrical power rating	19 kW₁	57 kW₁
Thermal power rating	44 kW₂	120 kW₂
Calorific value of plant-based biochar	7.8 kW ₄	28.4 kW ₄
Overall efficiency	90.1 % ₃	96 % ₃
Electrical efficiency	24.2 % ₃	26.6 % ₃
Thermal efficiency	56.1 % ₃	56.1 % ₃
Plant-based biochar efficiency	9.9 % ₄	13.3 % ₄ Plant-based
Fuel heat output	78.5 kW ₄	214 kW ₄

1 Nominal electrical power rating incl. approx. 1.0 kW electrical output for pre-drying – operation dependent on wood chip quality

2 Thermal power rating incl. thermal output for pre-drying

3 Electrical and thermal data according to the test report of an independent consulting engineer – data may vary due to the wood chips used and the mode of operation

4 Data may vary due to the wood chips used

Emissions

Exhaust gas emissions	Meets the requirements of Art. 15a B-VG concerning placing small combustion plants on the market and the inspection of combustion plants and combined heat and power plants (Austrian federal constitutional legislation).	
Noise emissions	<85 dB (distance of 1 m)	

Storage and pre-drying unit

Pre-drying unit	Upstream system for drying wood chips – waste heat utilization from CHP unit	
Storage container	200 l	110 l
Connection to wood-chip feeder	Slide valve DN 300	
Connection to drying air	Pipe socket Ø 254 mm	

Wood-gas generator

Fuel	Wood chips in accordance with „GLOCK Ecotech Wood Chip Standard“	
Fuel consumption	approx. from 1.8 m ³ / day to 2.2 m ³ / day – depending on the type of wood	approx. from 4 m ³ / day to 6 m ³ / day – depending on the type of wood
Plant-based biochar production	approx. from 0.18 m ³ / day to 0.22 m ³ / day – depending on the type of wood	approx. from 0.4 m ³ / day to 0.8 m ³ / day – depending on the type of wood
Ignition	Automatic	
Charcoal output	Automatic	
Gas filter unit	Two-stage filter system	

Internal combustion engine

Design	Straight-four engine	Straight-six engine
Nominal speed	approx. 1500 rpm	
Oil consumption	approx. 1.5 l per week	approx. 2 l / day
Oil volume	13 l	30 l + 30 l automatic oil refilling

	GLOCK CHP 18 Gen 1	GLOCK CHP 50 Gen 2
Generator		
Design	Asynchronous cage rotor	
Voltage	400/660 V	
Cos Phi	0.73 (optional: 0.98 compensated)	0.78 (Optional: 0.98 compensated)
Frequency	50 Hz	
Starting current	290/167 A	1020/592 A

Exhaust gas system

Exhaust gas connection	DN 50	DN 100
Outlet temperature, max.	+150 °C	+150 °C
Exhaust gas heat exchanger	Tube bundle heat exchanger	
Volumetric flow rate	190 Nm ³ /h	290 Nm ³ /h
Exhaust aftertreatment	3-way catalytic converter plus optional additional oxidation catalytic converter	
Exhaust gas muffler	Multiple-chamber muffler	

Heating output

Supply temperature	max. +95 °C	
Return temperature	min. +45 °C – max. +65 °C	
Connection for supply and return	Threaded connector DN 25, 1“ AG or connector flange DN 25 / PN 16	Threaded connector DN 50, 2“ AG or connector flange DN 50 / PN 16
Pressure	max. 7 bar	

Customer site prerequisites

Compressed air – dehumidified	min. 100 l / min at 8 bar	
Heater water connection	1 inch	2 inch
Heater return line flow rate	1.7 m ³ / h at max. +65°C	3.6 m ³ / h at max. +65°C
Charcoal discharge connection	DN 200	
Air volume requirement for system	min. 450 m ³ /h	min. 750 m ³ /h
Ambient temperature	min. +5 °C – max. +40 °C	
Heater operating pressure	4,5 bar (max. 7 bar)	
Exhaust gas line connection	DN 50	DN 100
Connection to wood-chip feeder	DN 300	
Electrical supply connection – fusing	380-400 VAC – 32 A	380-400 VAC – 32 A
Electrical feeder connection – fusing	380-400 VAC – 100 A	380-400 VAC – 200 A
Overall system length	6.0 m	6.1 m
Overall system width	2.3 m	3.6 m
Overall system height	2.8 m	2.9 m
Weight	ca. 5.3 t	ca. 8.6 t
Floor space required for the system	ca. 42 m ²	ca. 53 m ²

ENERGY SOLUTIONS WITH CONFIDENCE



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