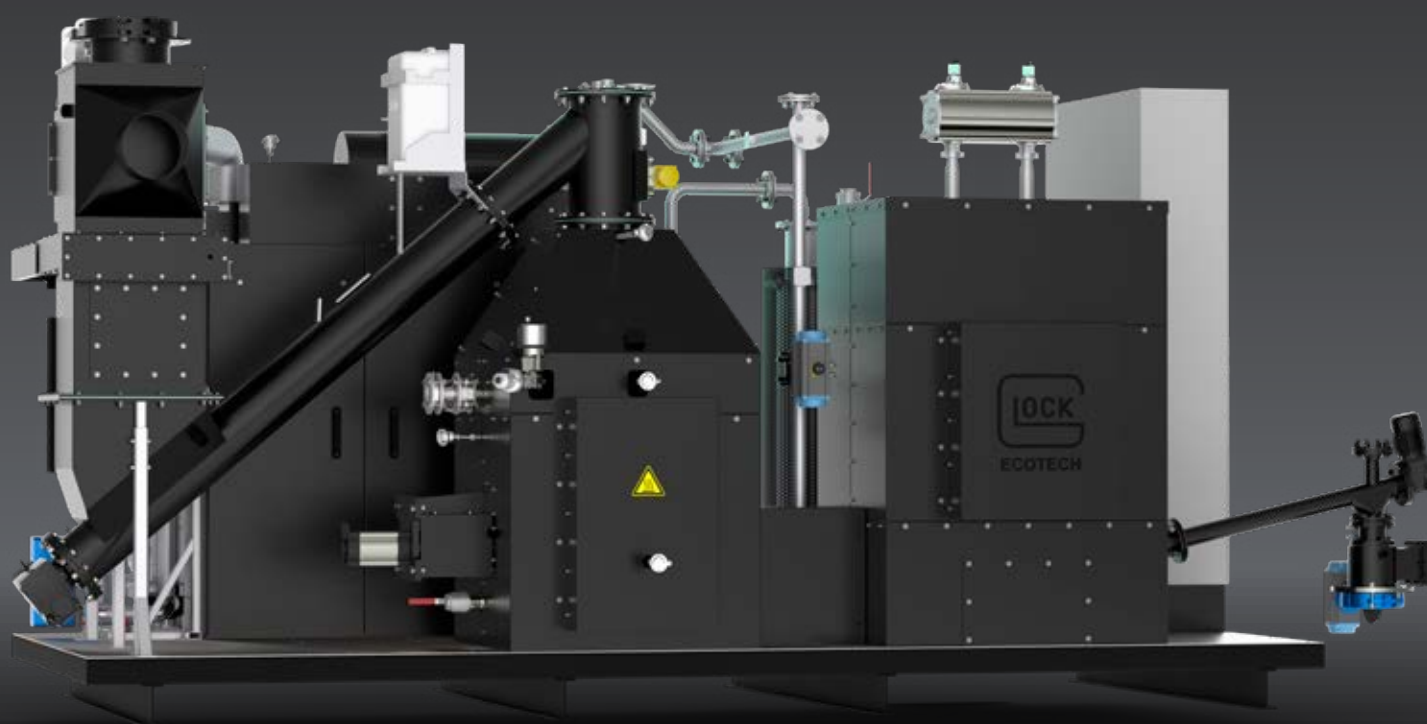




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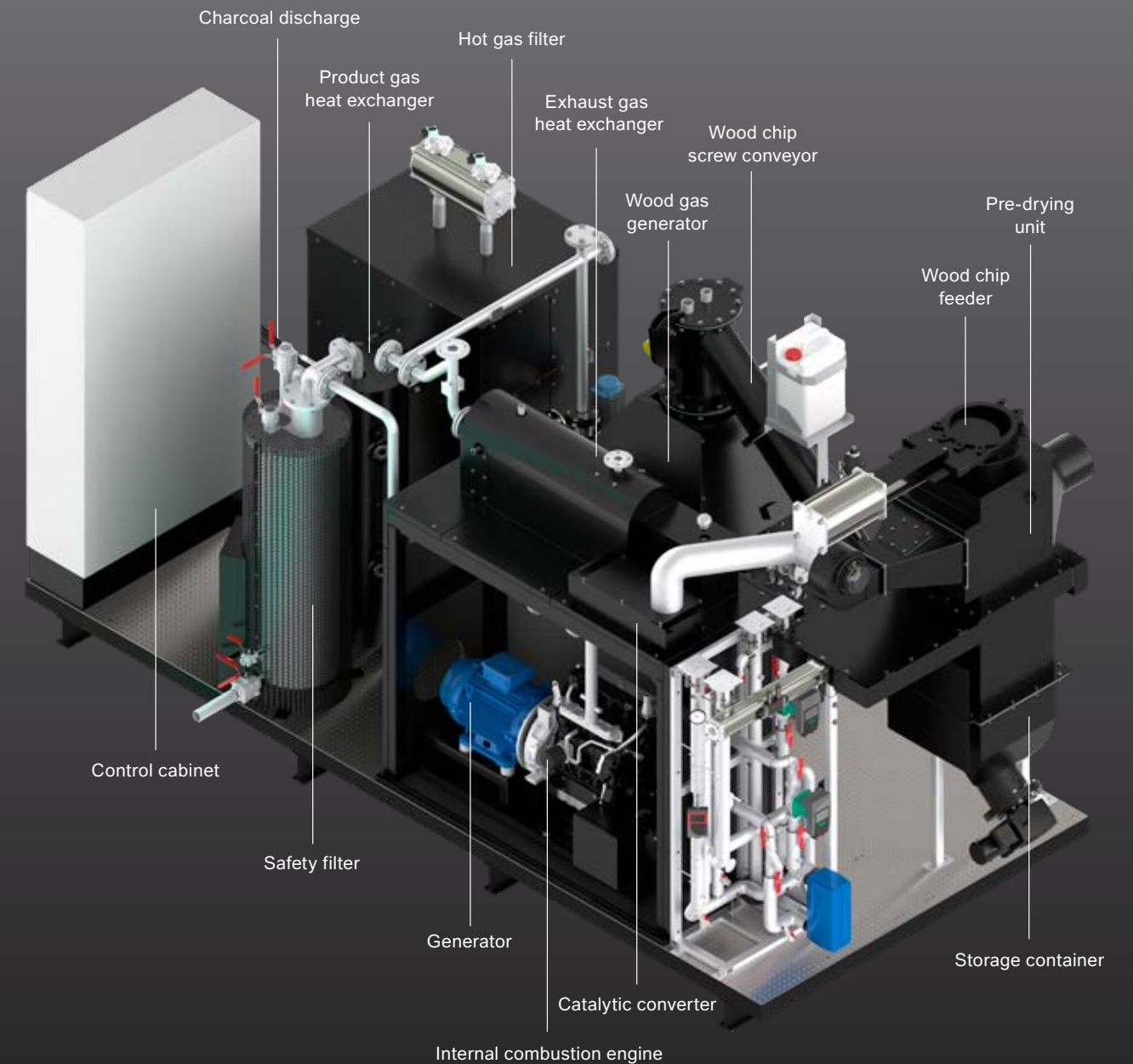


GLOCK CHP

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.

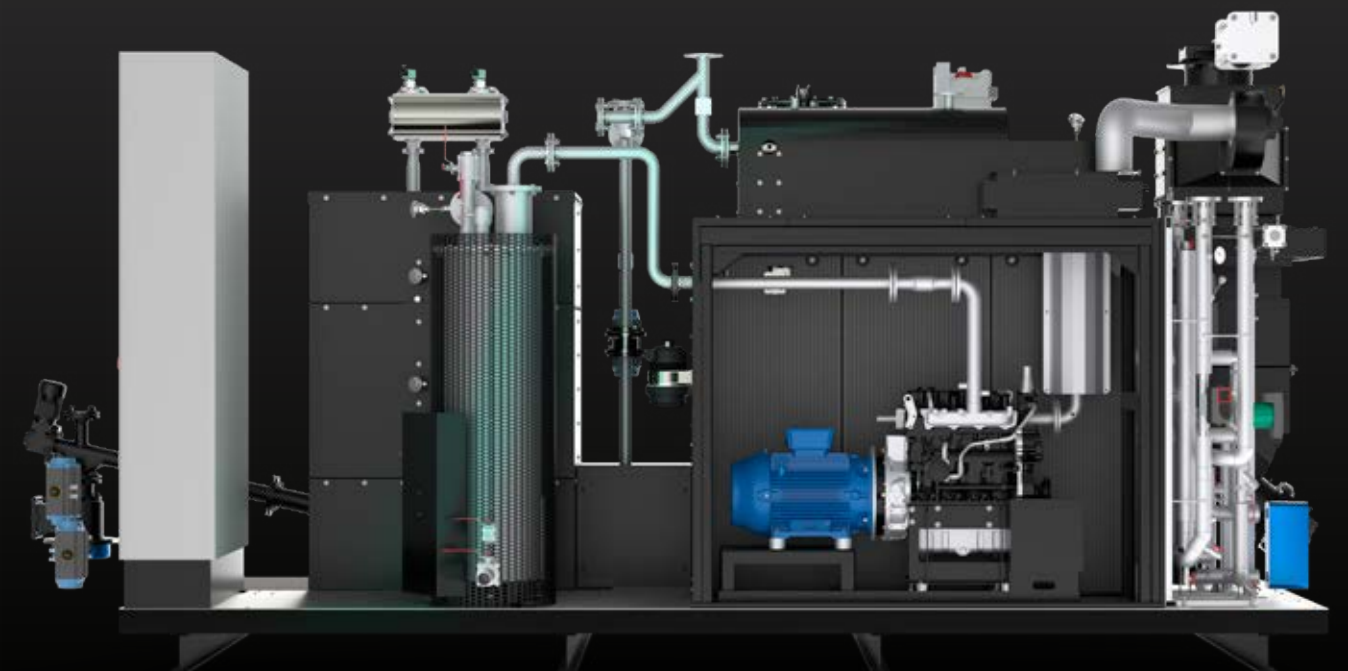


Example of a serial setup:
GLOCK Ecoenergy operates nine GLOCK
CHP 50 and one GLOCK CHP 18 for its
district heating network in Griffen, Austria.



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.





	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
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
Plant-based biochar production	approx. from 0.18 m ³ / day to 0.22 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
Nominal speed	approx. 1500 rpm
Oil consumption	approx. 1.5 l per week
Oil volume	13 l

	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



ECOTECH

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DISCLAIMER: All information in this document regarding power and heat production, wood chip consumption, and biochar production is based on the respective examples and applications specified in this document and is in no way to be applied to specific individual cases. The content of this document is strictly for informational purposes and in particular does not constitute an offer, recommendation to buy or sell, or energy analysis. It is not intended to replace individual consultation. GLOCK Ecotech GmbH is not liable for ensuring that the content is complete, correct, or up to date, nor is it obligated to update or redistribute the content. To the extent permissible by law, all liability for damage caused by use and application of the content by the customer and/or user or by third parties is excluded. All information contained herein is therefore provided with no guarantee despite careful editing.