



2G Product range

CHP plants for distributed generation of heat and power.
Highly efficient and reliable. 20 to 4,500 kW.



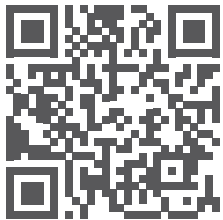


Global success with cogeneration

A power plant by 2G is the ideal solution for anyone wanting to reduce energy costs in the long-term and wishing to protect themselves against further increases in the price of electricity. As a pioneer, innovator and one of the world's leading manufacturers of distributed power generation systems using cogeneration (also known as combined heat and power or CHP), we have commissioned thousands of technologically advanced, highly efficient CHP plants since 1995.

Satisfied customers in more than 60 countries confirm the quality, performance and reliability of our products and solutions. 2G is listed as a publicly traded company on the Entry Standard of the German Stock Exchange and has a workforce of more than 950 employees.

The 2G product range includes CHP plants ranging in electrical output from 20 kW to 4,500 kW.



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The technology of the future

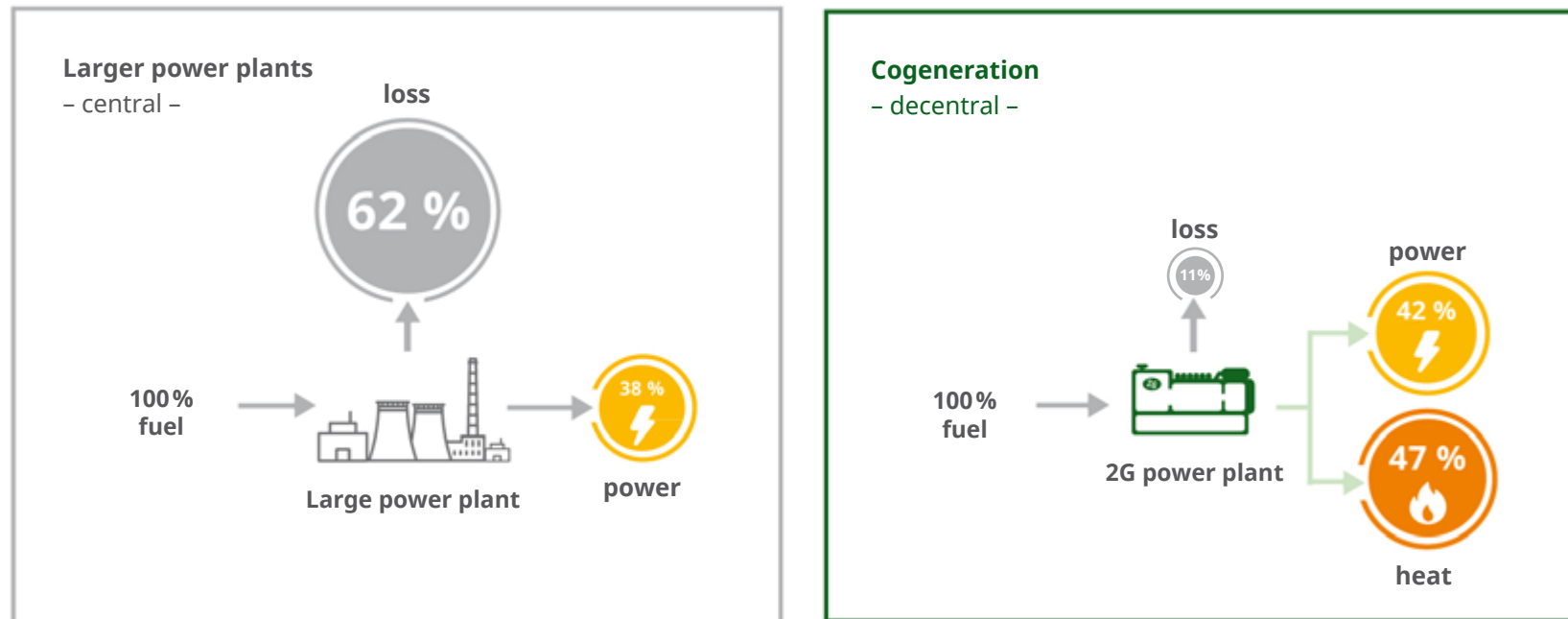
The power grid of the future will not be made up of a few large power plants but rather of many small ones. As part of the transformation of the German energy sector, cogeneration plants (also known as combined heat & power plants (CHP)) are increasingly gaining importance in intelligently networked energy systems – so-called virtual power plants – due to their distributed nature, controllability and predictable availability. With a plant by 2G you can also make a contribution to a stable, clean energy supply of the future.

Highly efficient and climate-compatible

The simultaneous generation of mechanical energy and useful heat is described as cogeneration (CHP). While the mechanical energy is converted straight into electricity, the heat can be used for heating, cooling or generating steam (see page 25).

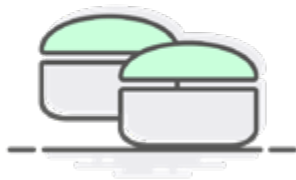
Thus the heat arising during the production of electricity does not simply escape unused into the atmosphere but is put to practical use. This is what makes the technology of cogeneration so efficient and climate-friendly. It saves up to 40 % in primary energy. CO₂ emissions drop by up to 60 % compared to conventional power generation in large power plants.

Comparison of distributed and centralized power generation



Many different areas of use

2G power plants have already demonstrated their strengths in many places, e.g. in residential buildings, office and administration buildings, nurseries, schools, hotels, senior citizen centers, hospitals and a wide variety of industrial and commercial businesses. Nowadays, virtually every business is suitable for the use of cogeneration.



Biogas plants



Office and administration buildings



Chemical and petrochemical industry



Landfill sites



Shopping centers



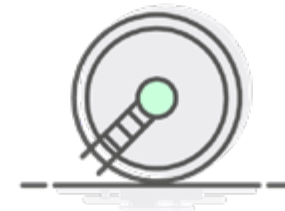
Horticultural businesses



Hotels



Industry and commerce



Sewage treatment plants



Hospitals



Agricultural businesses



Food industry



Public facilities



Computing centers



Schools and universities



Swimming pools



Senior citizen centers



Sports and event centers



Heating networks



Hydrogen



Residential buildings



We set standards

Power plants by 2G for the cogeneration of power and heat have proven their value for many years. We set standards in the industry with reliable, leading-edge technology that's made in Germany with outstanding service.

Leading-edge technology Made in Germany

Together with prestigious universities and research institutes, our group's own research and development company, 2G Drives GmbH in Heek, works continuously on improving the 2G engine technology and promoting innovations. As a result, we have successfully achieved significant increases in efficiency and made them permanently reproducible.

Certified series production

A high degree of vertical integration and series production certified in accordance with DIN ISO 9001 guarantee the consistently high quality of 2G power plants.

Highly developed control technology

The 2G control technology enables needs-based management of flexible running modes in on/off operation or part load operation. Every 2G power plant is infinitely adjustable between 50 and 100 percent load. Effective analysis tools which have revolutionized remote maintenance and service are an integral part of the sophisticated control concept.

Verified grid conformity

The 2G power plants can be integrated in virtual power plants. They meet the requirements of local voltage guidelines and are suitable for selling the electricity generated on the energy market.



g-box



Profitable small power plant



The g-box. Perfect for hotels. Further areas of use, see p. 8/9.

Profitable small power plant

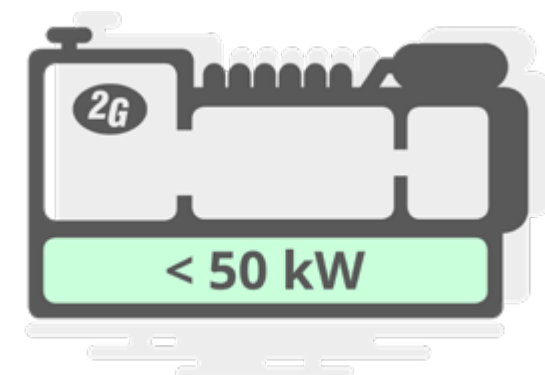
The g-box is the profitable small power plant by 2G ranging in electrical output from 20 to 50 kW. It is supplied as a connection-ready compact module. The control cabinet with PLC controller and operating unit is designed as a separate unit on the module. The g-box not only works extremely efficiently but also very quietly, thanks to the fully enclosed sound capsule.

- Connection-ready, super-silent compact module
- Very economical due to high thermal efficiency thanks to condensing technology (as standard)
- Long operating times, reliable and low-maintenance
- Possible incorporation into tight building spaces thanks to the modular design
- Completely water-cooled, no need for supply and return air thus reducing installation costs

g-box 20 to 50 kW

Type	Configuration	Electrical output	Thermal output
		Natural gas	Natural gas
g-box 20	-	20 kW	44 kW
g-box 50plus*	as70-4	50 kW	104 kW
		Biogas	Biogas
g-box 50plus	as135-1	50 kW	77 kW
		LNG	LNG
g-box 20	as22-4	20 kW	44 kW
g-box 50plus	as22-4	50 kW	108 kW

* Also available as a HT version with a feed temperature up to 95 °C



aura

Clean and efficient



The aura. Ideal for urban centers. Further areas of use, see p. 8/9.

Clean and efficient

Equipped with 2G's proprietary Lambda 1 technology and low-charged turbocharger, it is also characterized by extremely low exhaust emissions and meets, in particular, the increasingly stringent requirements for low nitrogen oxide limits.

- Low emissions
- High heat efficiency
- Reliable, service-friendly motor
- Specifically higher performance of 15 % conventional systems with the same displacement
- Designed as ready-to-connect compact module

aura 100 to 420 kW

Type	Configuration	Electrical output	Thermal output
		Natural gas	Natural gas
aura 404	bt70-4	100 kW	176 kW*
aura 406	bt70-1	200 kW	294 kW**
aura 408	bt70-1	280 kW	404 kW
aura 412	bt70-1	420 kW	605 kW

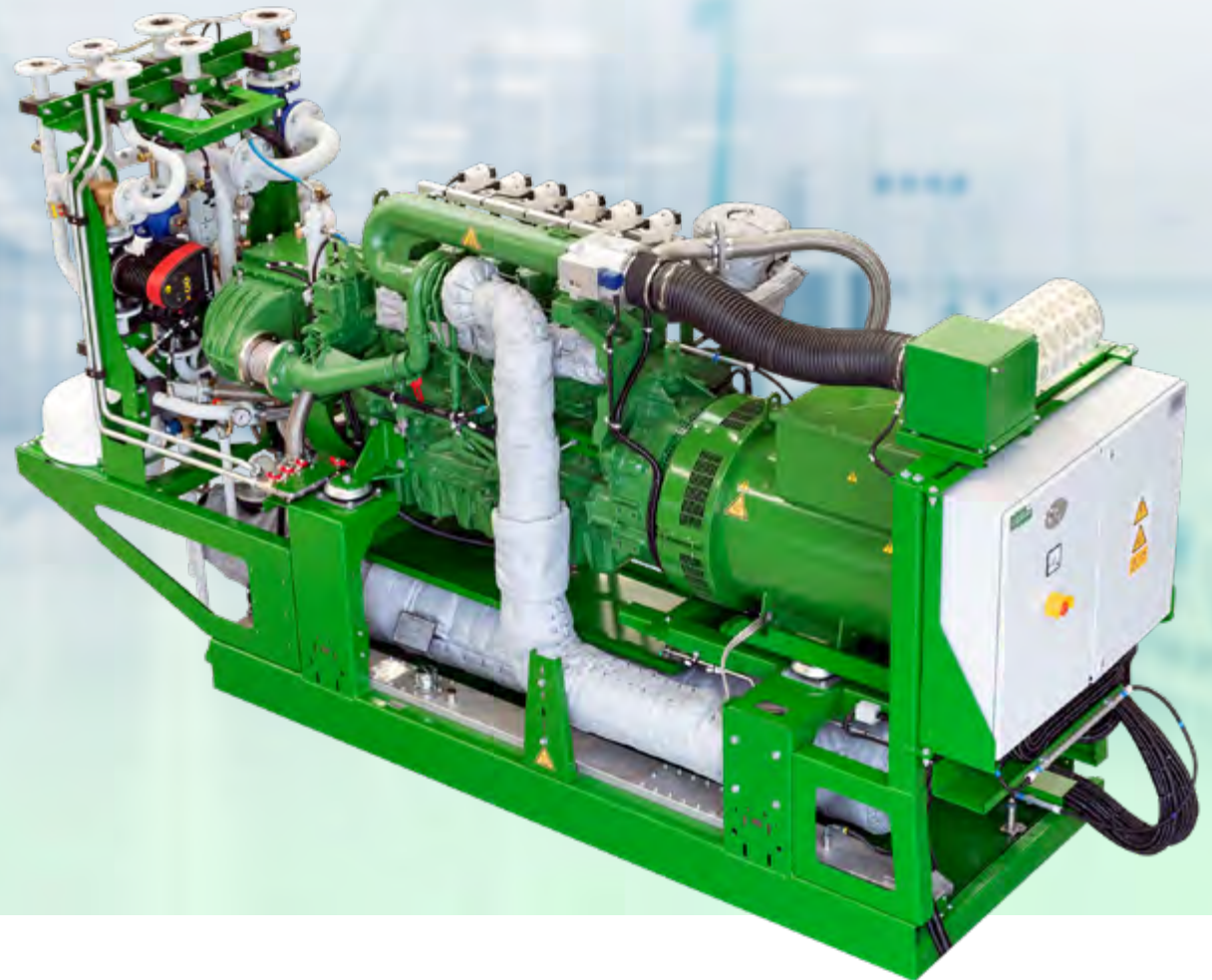
* For version: heat coupling with condensing heat exchanger

** Other finishes available



agenitor

Evolution in efficiency



The agenitor. Perfect for hospitals. Further areas of use, see p. 8/9.

Evolution in efficiency

The agenitor by 2G is the result of intensive work by the development team at 2G Energietechnik GmbH. Improving combustion chamber geometry has made it possible to increase the efficiency of the agenitor range significantly.

- Highly efficient power plant with optimized gas engine – and therefore lower fuel costs
- Modular design facilitates installation in hard to reach places
- Is also very reliable even in regular start-stop operation thanks to highly wear-resistant engine components
- Sturdy and low-maintenance

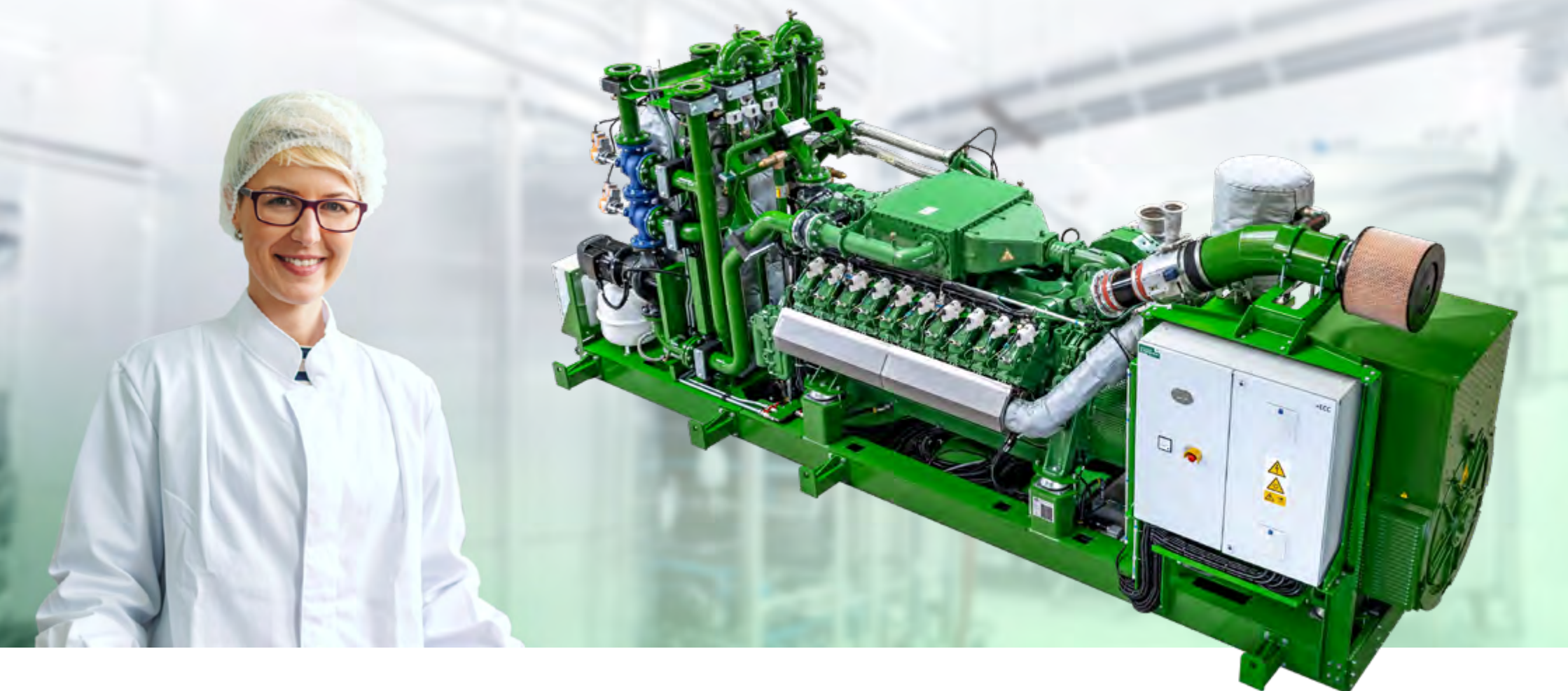
agenitor 95 to 500 kW

Type	Configuration	Electrical output	Thermal output
		Natural gas	Natural gas
agenitor 404	bt80-1 (MN70)	95 kW	124 kW
	bt80-1	100 kW	130 kW
	ct70-1	160 kW	172 kW
	ct80-1	160 kW	168 kW
	ct80-B-1	180 kW	186 kW
agenitor 406	bt70-1	250 kW	304 kW
	ct70-1	250 kW	269 kW
	ct80-1	250 kW	260 kW
	ct80-B-1	275 kW	282 kW
agenitor 408	bt70-1	360 kW	440 kW
	ct70-1	360 kW	383 kW
	ct80-1	360 kW	381 kW
	ct80-B-1	400 kW	416 kW
agenitor 412	bt70-1	450 kW	609 kW
	ct70-1	450 kW	493 kW
	ct70-B-1	500 kW	548 kW
		Biogas	Biogas
agenitor 404	at135-1	80 kW	104 kW
	bt135-1	100 kW	119 kW
	ct135-1	160 kW	155 kW
	ct135-B-1	180 kW	161 kW
agenitor 406	ct135-B-1	275 kW	260 kW
agenitor 408	ct135-B-1	400 kW	373 kW
agenitor 412	ct135-B-1	500 kW	482 kW

avus



Built for big tasks



The avus. Perfect for industry and commerce. Further areas of use, see p. 8/9.

Built for big tasks

The avus is a highly efficient 2G power plant for high electric power consumption (above 550 kW) which is used in larger industrial projects or for supplying heating networks. If necessary, experienced 2G technicians familiar with large engine technology will completely take over the planning and management of the overall project and will provide professional assistance in designing the peripheral components.

- Complete solutions for industry: project planning, design of all components, communication with all interfaces on site, piping installation, integration in container or existing building
- Efficient running mode and operating times due to excellent engine quality exzellente Motorenqualität

avus 550 to 2.000 kW

Type	Configuration	Electrical output*	Thermal output
		Natural Gas	Natural Gas
avus 500plus	bt70-1	550 kW	722 kW
	ct70-1	550 kW	589 kW
	ct80-1	550 kW	577 kW
	ct80-B-1	600 kW	628 kW
avus 500a	F209 - F	599 kW	609 kW
avus 500b	F05 - F	638 kW	672 kW
avus 500c	-	600 kW	622 kW
avus 800a	F05 - F	851 kW	917 kW
avus 800b	C05 - F	962 kW	952 kW
avus 800c	-	800 kW	825 kW
avus 800e	L64 FNER	1.013 kW	1,024 kW

* Higher output ranges on request

avus 2.000 to 4.500 kW

Type	Configuration	Electrical output*	Thermal output
		Natural Gas	Natural Gas
avus 1000plus	ct80-1	1,000 kW	1,045 kW
avus 1000a	F05 - F	1,067 kW	1,146 kW
avus 1000b	C05 - F	1,248 kW	1,268 kW
avus 1000c	-	1,380 kW	1,313 kW
avus 1200e	L64 FNER	1,521 kW	1,529 kW
avus 1500b	E05 - F	1,561 kW	1,637 kW
avus 1500c	-	1,840 kW	1,756 kW
avus 1600e	L64 FNER	2,028 kW	2,055 kW
avus 2000a	J01 - G	2,004 kW	1,904 kW
avus 2000b	J01 - G	2,676 kW	2,527 kW
avus 2000c	-	2,300 kW	2,164 kW
avus 2000e	L64 FNER	2,538 kW	2,590 kW
avus 3000a	J11 - G	3,360 kW	3,172 kW

avus 550 to 4.500 kW

Type	Configuration	Electrical output*	Thermal output
		Biogas	Biogas
avus 500a	F225	551 kW	519 kW
avus 500plus	ct135-1	550 kW	526 kW
	ct165-B-1	600 kW	569 kW
avus 500c	-	600 kW	598 kW
avus 500b	F25 - G	638 kW	640 kW
avus 800a	F25 - G	851 kW	875 kW
avus 800b	C25 - F	934 kW	904 kW
avus 800c	-	800 kW	788 kW
avus 1000plus	ct135-0	1,000 kW	945 kW
avus 1000a	F25 - G	1,067 kW	1,093 kW
avus 1000b	C25 - F	1,248 kW	1,224 kW
avus 1000c	-	1,380 kW	1,319 kW
avus 1500b	C25 - F	1,561 kW	1,537 kW
avus 1500c	-	1,840 kW	1,759 kW
avus 2000c	-	2,000 kW	1,982 kW

Hydrogen CHP

Climate-neutral without compromise

The exploitation of hydrogen as an energy source is a milestone on the way towards climate-neutrality. H₂ is the key technology enabling the flexible, safe and time-delayed use of renewable energy on a large scale. Throughout all essential sectors. 2G is praised as a global pioneer of the H₂-CHP technology and was able to commission the first CHP completely operated on hydrogen as early as 2014.



agenitor H₂ 115 to 360 kW

Type	Configuration	Electrical output	Thermal output
		Hydrogen	Hydrogen
agenitor 404c H ₂	ct0-0	115 kW	128 kW
agenitor 406 H ₂	ct0-0	170 kW	182 kW
agenitor 408 H ₂	ct0-0	240 kW	250 kW
agenitor 412 H ₂	ct0-0	360 kW	372 kW

avus H₂ 550 to 4.500 kW

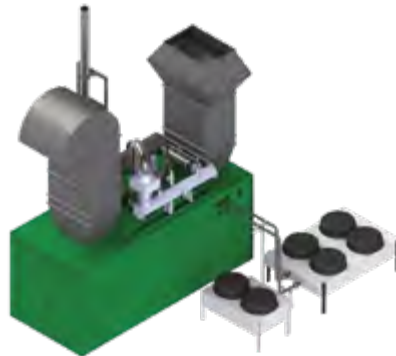
Type	Configuration	Electrical output	Thermal output
		Hydrogen	Hydrogen
avus 1000plus	ct0-0	750 kW	747 kW
avus 416plus	ct0-0	600 kW	581 kW

Extremely versatile. And quiet

2G power plants can be installed in various ways – depending on local conditions and the requirements for sound insulation. They can therefore be incorporated in existing buildings or heating systems or can be set up separately in a container or engine room. With the appropriate sound insulation package, noise emission can be as low as 35 dB (A) at a distance of 10 m.



Container Compact



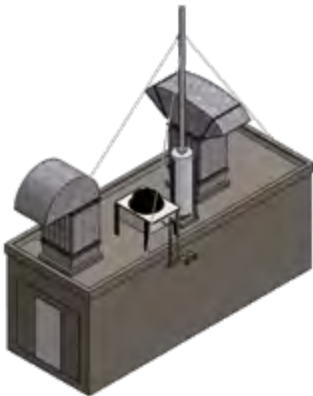
Container Basic



Container Heavy



Container Basic High Line



Basic Concrete Acoustic Enclosure



High Line Concrete Acoustic Enclosure



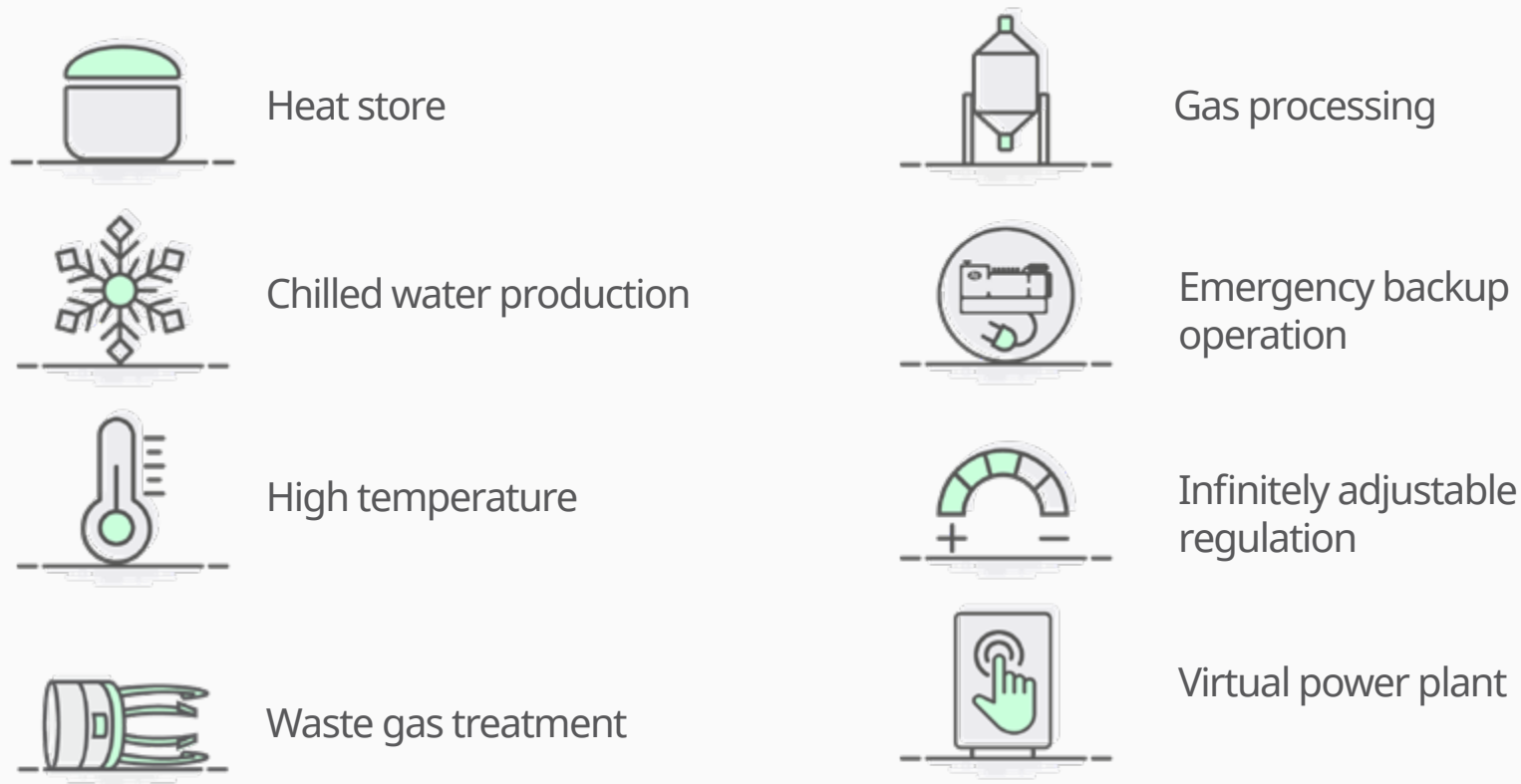
Sound Capsule



Outdoor Sound Capsule

	Sizes available (LWH)	Acoustic emissions**	Information
Container Compact	6.00 m x 2.44 m x 2.90 m	Standard: 65 dB (A) Super Silent: bis 55 dB (A)	Easy installation due to complete pre-assembly in the factory and compact design, integrated electrical installation
Container Basic	7.00 m x 3.00 m x 3.00 m 9.60 m x 3.00 m x 3.00 m	Standard: 65 dB (A) Super Silent: bis 52 dB (A)	Made of sheet steel, lined internally with fleece and galvanized perforated sheet metal, integrated electrical installation
Container Heavy	12.00 m x 3.00 m x 3.00 m 15.00 m x 3.00 m x 3.00 m 17.00 m x 3.00 m x 3.40 m 18.00 m x 6.00 m x 3.70 m	Standard: 65/70 dB (A) Super Silent: bis 55 dB (A)	Made of sheet steel, lined internally with fleece and galvanized perforated sheet metal, integrated electrical installation
Container Basic High Line	9.00 m x 3.00 m x 3.70 m	Standard: 52 dB (A) Super Silent: bis 45 dB (A)	Like container basic, optimized design, cooler in addition to supply and return air ducts integrated in the container roof
Basic Concrete Acoustic Enclosure	11.00 m x 4.30 m x 3.70 m* 12.00 m x 4.30 m x 3.70 m 13.00 m x 4.30 m x 3.70 m	Standard: 65 dB (A) Super Silent: bis 45 dB (A)	Complete concrete enclosure of the 2G power plant, wall thickness 160 mm, integrated electrical installation
High Line Concrete Acoustic Enclosure	9.60 m x 3.60 m x 3.75 m	Standard: 65 dB (A) Super Silent: bis 35 dB (A)	Like basic concrete acoustic enclosure, optimized design, cooler (size-depend-ent) in addition to supply and return air ducts integrated in the container roof
Sound Capsule	Produktabhängig	Standard: 65 dB (A)	Encapsulation of the entire 2G power plant using sheet steel cases, easily accessible through doors and maintenance flaps, outside 1.5 mm galvanized sheet steel, inside 1.0 mm galvanized perforated sheet metal
Outdoor Sound Capsule	Produktabhängig	Standard: 65 dB (A)	Encapsulation of the entire 2G power plant, easily accessible through doors and maintenance flaps, made of stainless aluminium

* Also available in 35 db (A) | ** At a distance of 10 m | *** At a distance of 1 m



Innovative energy concepts

Air-conditioning of offices, generating hot steam for industry and being the pointer on the scales when it's all about a stable decentralized energy supply of the future. All of this is what cogeneration generally does – especially a highly efficient power plant by 2G.

Storing heat

By incorporating a heat store, it's possible to decouple heat production from electricity production and to use the 2G power plant flexibly.

Cooling with heat

The heat arising during cogeneration can be converted into chilled water by means of an absorption chiller and can be used, for example, for environmentally-compatible air conditioning.

Raising the temperature

Incorporated in steam, hot water and thermal oil applications, 2G power plants can provide customized solutions for such as the food industry.

Treating waste gas

By installing catalyst technology in a 2G power plant, it is possible to remove small amounts of pollutants that are still present in the exhaust gas and to achieve values below the limits of the TA-Luft [Technical Guidelines on Air Quality Control].

Processing gas

After the natural fermentation process, biogas often still contains residues of undesirable substances, such as sulfur. The biogas is upgraded by using activated charcoal filters and gas cooling systems.

Operating as a backup in an emergency.

It is not always possible or practical to connect to a stable power grid. 2G power plants are capable of operating in isolated networks and may guarantee a backup supply in an emergency.

Regulating with continuous adjustment

Unlike large power plants, CHP plants can regulate their output within a very short time. 2G power plants are infinitely adjustable in the power range between 50 and 100 percent and adjust to the actual energy demand with the help of modern control technology.

Virtual power plant

2G power plants are equipped with a special interface enabling them to be integrated easily in virtual power plants and also enabling them to participate in the energy market.



2G service. Efficient and fast

2G offers a leading edge service concept so that every 2G power plant runs permanently and with maximum efficiency. Service is supported by the 2G Power Plant System for automated remote diagnosis, control and maintenance.

2G Power Plant

Automated remote diagnosis

2G has expanded servicing via remote access to the plant control system by adding an innovative module: 2G Power Plant. The key to this concept is automated remote diagnosis of all the plant parameters. If a technical disruption is looming in a 2G power plant, it is automatically reported online to the 2G service center without delay. This is carried out without the operator needing to take any action. With the relevant system parameters, the system also reports a suggested solution. An employee in the 2G service center initiates the appropriate measures immediately to ensure that the plant continues to operate. Fast and efficient!

Premium service contract.

Complete cost control

Every operator of a 2G power plant is well protected with a premium service contract. No additional costs arise as a result of maintenance and repair work (including all spare and wear parts). As a result, the operator retains full cost control.

2G service team.

On site worldwide

A worldwide service network and a comprehensive spare parts warehouse form the basis for a professional on site maintenance and repair service. Hundreds of 2G service vehicles and a large number of specially trained service partners operate across the world.





2G 2G Locations  2G Partners

Would you like to produce power and heat yourself in future and sustainably reduce the energy costs in your business? **Then just get in touch with us.**

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