



# Natural Gas Cogeneration Unit

Professional Natural Gas Cogeneration System Provider...



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Choose Powerlink, Choose Clean Energy

More Information



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Sep.2019 NO:20190920

# POWERLINK

## ABOUT US

In the field of distributed energy system, Powerlink is a professional supplier for distributed CHP system of natural gas and biogas, related products. Business scope includes to provide CHP equipment, power generator sets, heat management system, biogas desulfurization system, biogas holders, automatic engineering control systems, project life cycle management software; transmission and distribution agent service, power plant construction and EPC project management. Application fields are in hotels, hospitals, schools, gym and fitness centers, commercial buildings, greenhouses etc. We provide independent and efficient distributed energy systems, with overall efficiency over 82%, providing the heat and power to customers. Biogas sources are from paper mills, food industry, large scale breeding, and municipal solid waste, sewage areas etc. Biogas from anaerobic treatment will be the fuel for cogeneration CHP system, the heat generated will be used for anaerobic digestion and the power can be transmitted to city grid.

Worldwide, with full experience for CHP system design, operation and maintenance, Powerlink is happy to provide the equipment of CHP, power generator sets, heat management system, biogas desulfurization system, biogas holders, automatic engineering control system, project life cycle management software; transmission and distribution agent services, power plant construction and EPC project management, investment budget analysis for investors; training on products application and engineering, after-sale services training, customized distributed CHP system solutions, as well as cogeneration new energy system solution and turnkey solutions. The business model of Powerlink is full integration of products sales, energy performance contracting, EPC projects management, Operation and maintenance management.

We strive for providing our customer valuable green energy products which are advanced, environmental protective, safe. We pride ourselves on the high standards we set as efficient, professional, honest, innovative, and responsible and win-win strategy and happy to work together with global investors, projects contractors to provide efficient and clean energy.



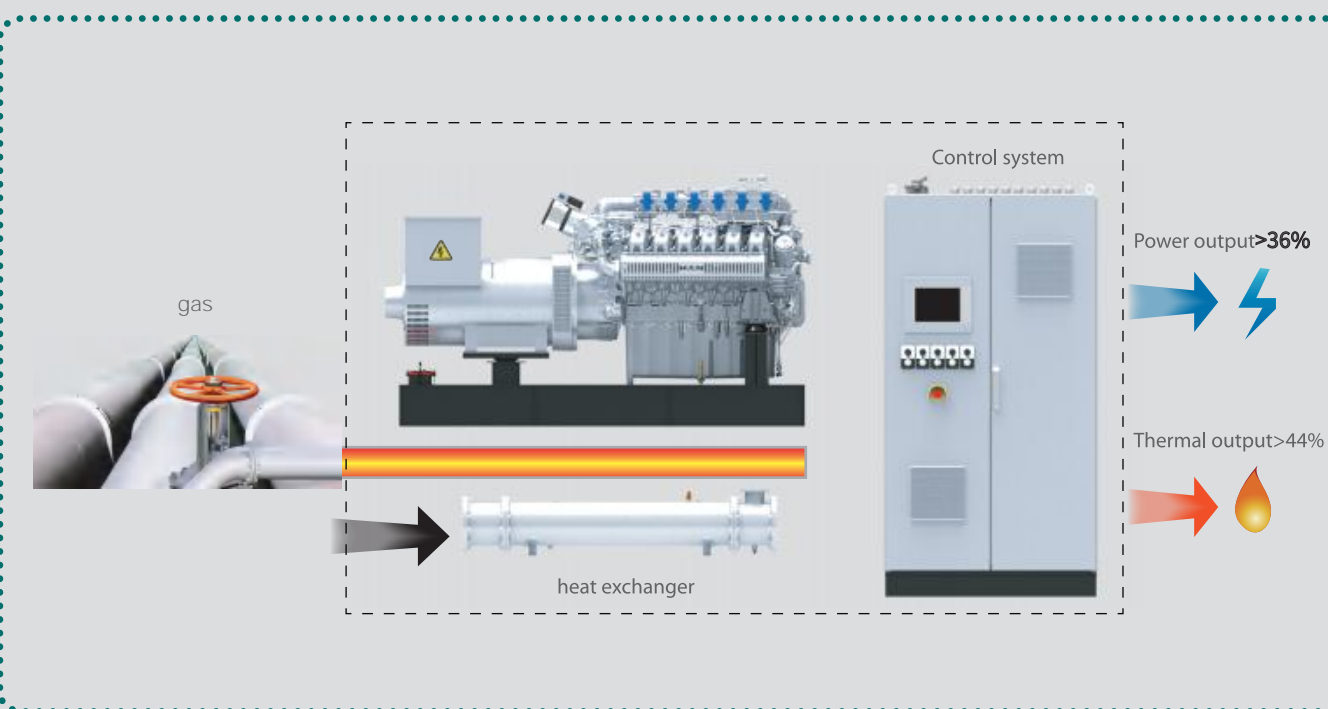
## PowerLink Natural Gas Cogeneration Unit

The energy supply equipment not only provides electricity, but also heat too. This is named CHP. The heat provided can be used for hot water, heating facilities and steam. Additionally, it can also be used to generate cold. The combined utilisation of heat and power can increase the comprehensive efficiency to more than 90% in the process of power generation. It can save as much as 40% of the primary energy and reduce carbon dioxide emissions by 60%. This is the reason why CHP is highly efficient and environmentally friendly.

## PowerLink Natural Gas Cogeneration Unit —efficient and environmentally friendly energy utilization technology

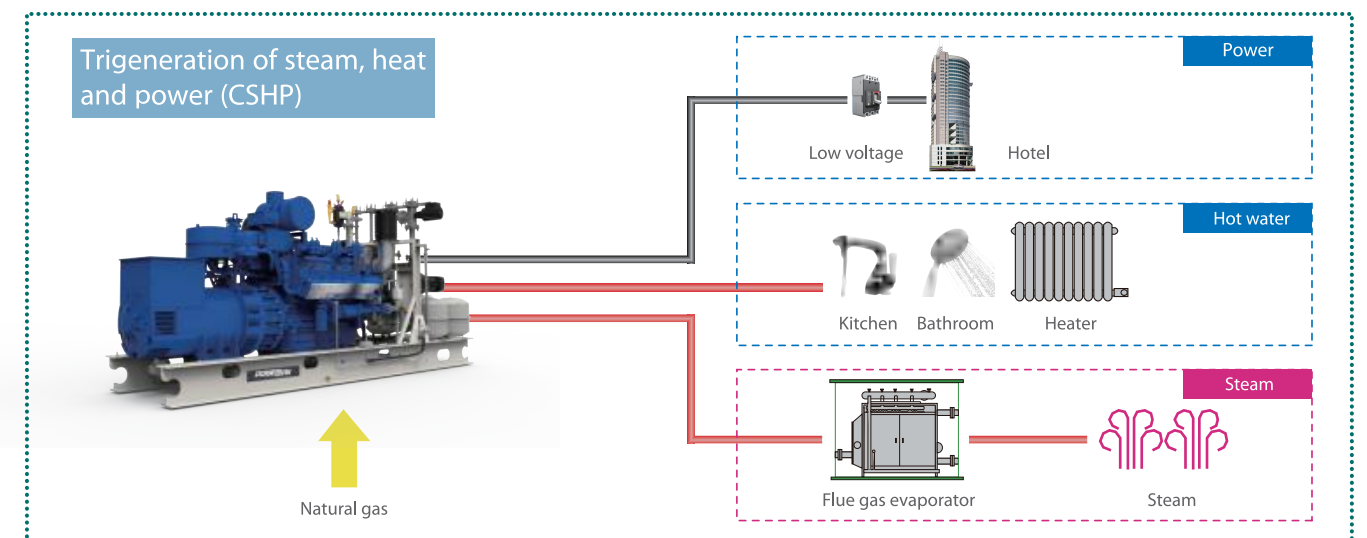
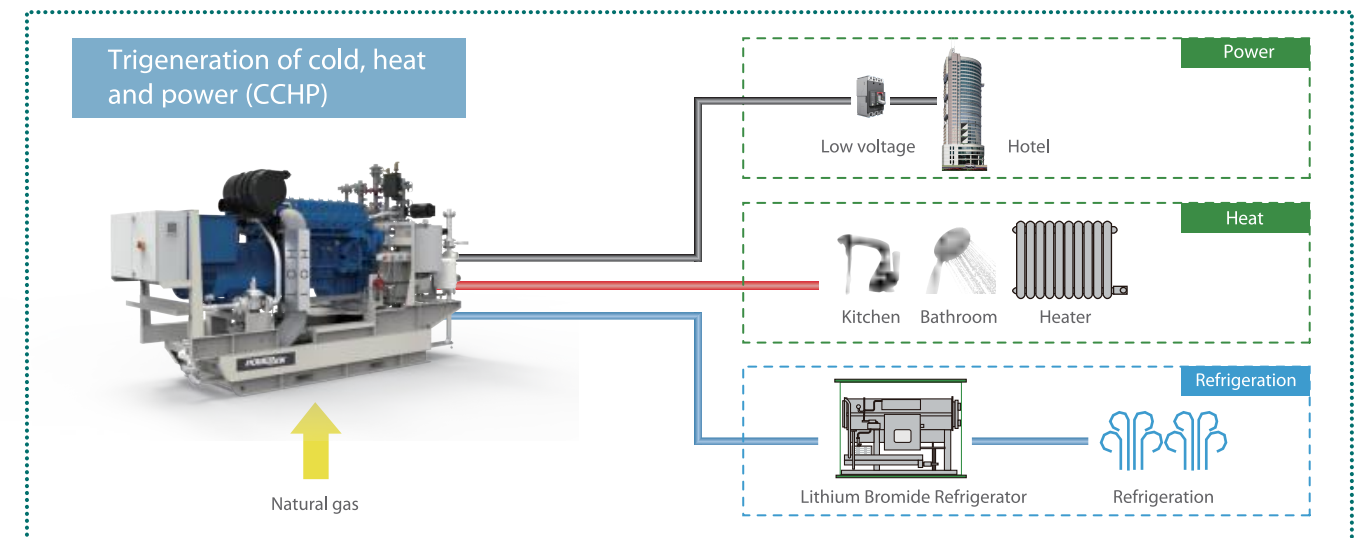
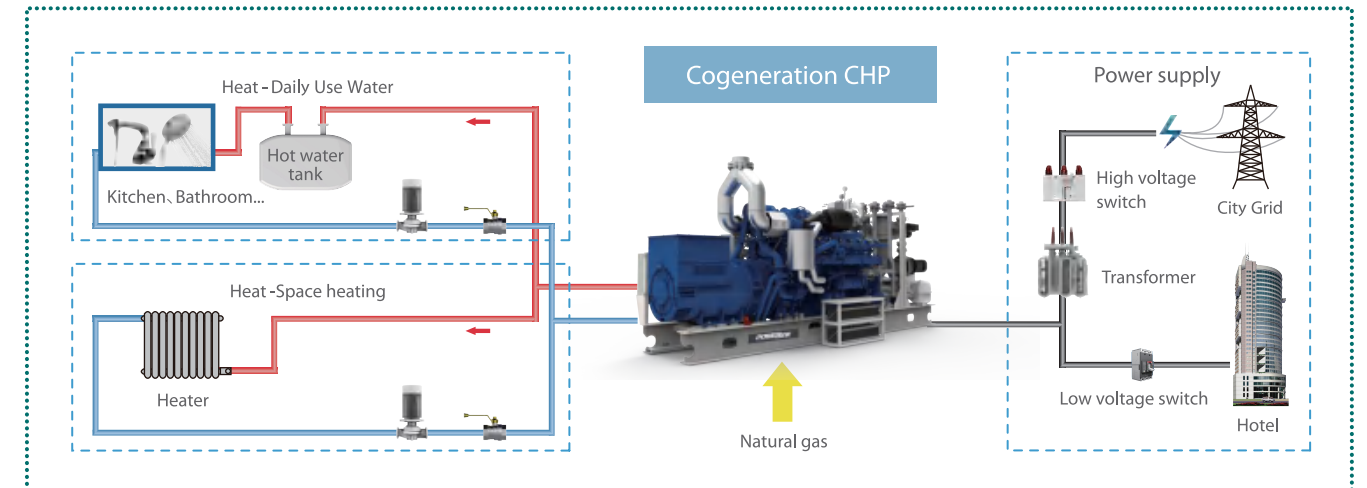
- Natural gas as a clean energy, more than 90% of its components are methane, and no purification is needed when it is used.
- To achieve the cascade utilization of heat and power, cold and power, steam and power, PowerLink natural gas cogeneration in the process of generating the heat generated in the process of generating the energy, to increase the energy efficiency to more than 80%;
- Compared with traditional coal and fossil fuels, PowerLink gas thermoelectric cogeneration uses thin combustion technology and uses NOx and CO2 emission to reduce 60%-80%, and the dust emission is close to zero.

### Efficiency of cogeneration





## Three types of distributed energy utilization



## Application Field

Hotels, Schools, Fitness Clubs, Apartments,  
Swimming Pools, Commercial Institutions,  
Hospitals, Nursing Homes, Airports, Data Centre,  
Greenhouse.



## Open set

Electric power: 50kWe-2000kWe  
Thermal power: 73kW-2077kW



## Soundproof

Electric power: 50kWe-560kWe  
Thermal power: 73kW-716kW



## Container

Electric power: 50kWe-2000kWe  
Thermal power: 73kW-2077kW







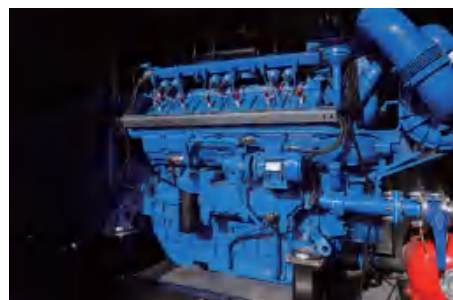
#### Modular design

The fuel input system, the power output system and the heat output system are designed with modular structure, which is convenient and fast to install and can quickly be put in operation. The access door is removable, and the outdoor unit can be dismantled at any time. It can be used outdoors without the computer room.



#### Ultra low noise, does not affect the surrounding environment

Industrial muffler can reduce the noise value by 12-20dB (A). The unit is equipped with noise-proof cotton, which can effectively reduce the noise of the unit too.



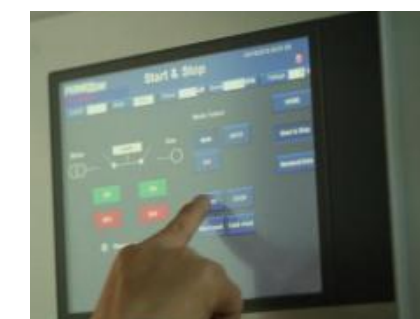
#### Low emissions, comply with environmental protection requirements

Lean combustion technology improves CO<sub>2</sub> emissions, and the thermal efficiency can be increased by more than 8% compared with the general equivalence ratio of the engine. It can effectively reduce the CO and HC in the emission, and inhibit the high temperature conditions for NO<sub>x</sub> production.



## Technical characteristics of POWERLINK Natural Gas cogeneration

Modular design can be quickly installed, put into use, with ultra-low noise and low emission levels, meeting the environmental requirements. Grid connection is also available.



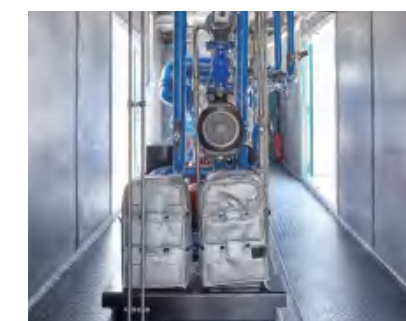
#### Flexible grid connection technology

The PCC300 control system has flexible grid connected control technology, which can be used to switch from the island mode and the synchronising mode freely.



#### Fan frequency conversion control technology

In the low temperature environment, the fan would remain on standby mode, and it will only start when the surrounding temperature reaches a certain extent. The speed varies depending on the temperature. This would ensure the generator is running at its most efficient condition whilst reducing the fuel consumption.



#### Advanced waste heat recovery and utilisation system

The unit operation generated electricity can meet user demand, meantime, engine jacket water and discharged a lot of waste heat, through the heat exchanger and the waste heat boiler, refrigerant equipment such as full recovery and utilization, to provide users with heating and cooling.



# POWERFUL ENGINE

## High Durability

### • Coupling connection

The engine and alternator are elastically connected by couplings, which bear the torque and load fluctuation, and limit the torque to the actuator overload

### • Integral lubricating oil filtration system

The engine is equipped with high performance filters to remove dust, metal particles, carbon deposits and other components in the engine oil, effectively slowing down the wear of crankshaft and other parts, and extending the service life of the engine

### • High strength chassis

The engine and alternator base made of the whole steel structure have high strength and good endurance

### • Damping rubber pad

A high performance damping pad is installed between the engine and generator and chassis. The new vibration proof capability of the unit meets the requirements of GB/T2820.9

### • Elastic ripple management

Installed in the engine exhaust manifold and muffler, the entire exhaust system has elastic connection, damping, noise reduction, effectively extends the life of the generator



Professional air intake and exhaust design, good cooling effect



Low noise, does not affect the surrounding environment



Fully automatic unattended, automatic start and stop



the unit has stable and reliable operation statuses, also able to run continuously.

- 1 Gas inlet safety valve group
- 2 Exhaust louver
- 3 Gas leakage protection device
- 4 Lubricating oil filtration system
- 5 Air filter





# NATURAL GAS COGENERATION

## High Safety

POWERLINK Natural Gas cogeneration is equipped with a variety of sensors, safety valves, set control, measurement and safety Functions all in one

- **control system**

The detonation controller sends the signal sent by the sensor, and sends the analog signal to the ignition system after processing to adjust the ignition timing, and reduces the load or stop, and avoid the occurrence of detonation

- **Gas leakage protection device**

If gas leakage occurs, the gas pipeline will be automatically cut off and alarm will be sent out

- **Lightning protection device**

The lightning is introduced to protect the equipment and personnel from lightning stroke

- **Smoke alarm system**

Timely detection of smoke concentration inside the unit, once detected excessive smoke, immediately send out an alarm to prevent fire spread or explosion

- **Electric inlet and exhaust louver**

Automatic control exhaust, automatic shutdown when the unit is not applicable, automatically open when using, realize automatic adjustment, put in the unit when not in use, small animals enter. When the gas leakage occurs, the automatic closing will prevent the air from being isolated in the unit and prevent explosion

## Intelligent Control

### Advanced control unit

Micro processing electronic ignition control system and speed control system, omni directional detection, control and protection;

Local or remote login detection and control unit;

Scalable input / output control to meet customer local requirements;

The whole life cycle of the Internet of things IoT management system, understanding of CHP related information.



### Automatic filling oil system

The oil level controller monitors the oil level of the engine. When the setting value is lower than the set value, the auxiliary oil tank will automatically refuel and stop fueling after the set value is reached. Oil level controller with large size inspection window, easy to check the oil level.



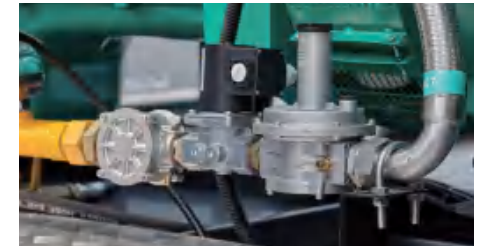
# GXC series

High Performance to Price



## Product features

- A highly cost effective product, power ranges from 50-1000kWe
- Lean combustion technology is adopted for high efficiency and low emission
- Modular structure design, can be quickly installed and put into use
- It has three design structures, open, soundproof and containerised types, to meet different application use.
- PCC300 control system, advanced intelligence, reduce labour cost
- Automatic refilling of the oil system to ensure long operation duration of the unit.
- Continuous operation up to 6000h, overhaul cycle 30000h



## GXC series type spectrum

Model	Electric power/kWe	Thermal power/kWt	Electric efficiency	Thermal efficiency	Total efficiency
GXC50-NG	50	70	32.3%	45.2%	77.5%
GXC100-NG	100	133	35.5%	47.3%	82.8%
GXC150-NG	150	203	35.6%	48.2%	83.8%
GXC200-NG	200	271	35.7%	48.4%	84.1%
GXC250-NG	250	320	36.2%	46.3%	82.5%
GXC350-NG	350	429	38.8%	47.6%	86.4%
GXC550-NG	550	672	38.4%	46.9%	85.3%
GXC800-NG	800	970	38.2%	46.3%	84.5%
GXC1000-NG	1000	1223	38.1%	46.6%	84.7%

Notes:

1) The above data only for reference, the actual data please take the technical single page as the standard; 2) Based on the data of methane value: MN>100, low thermal value: LHV = 21.6MJ/Nm<sup>3</sup>;

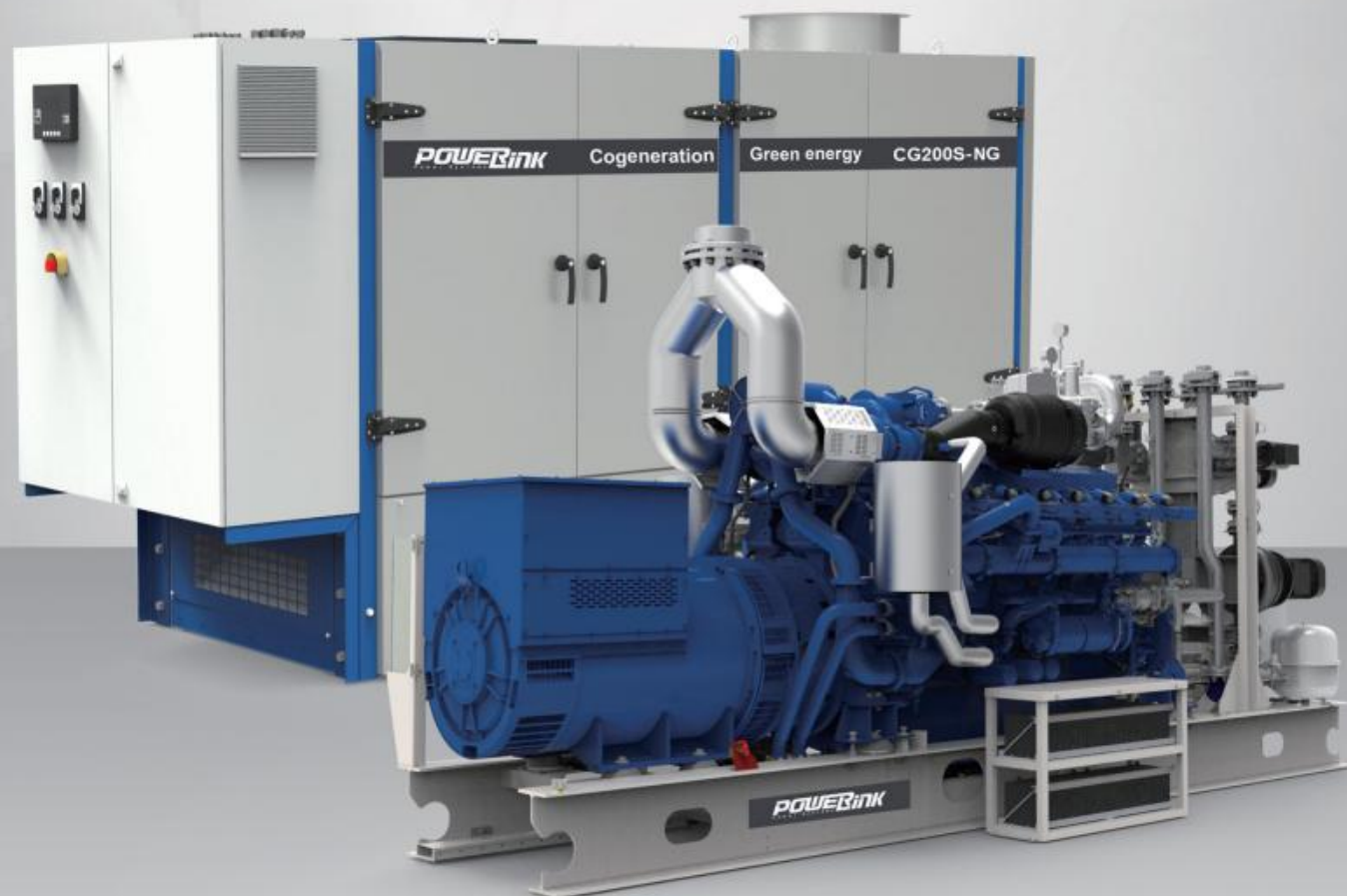
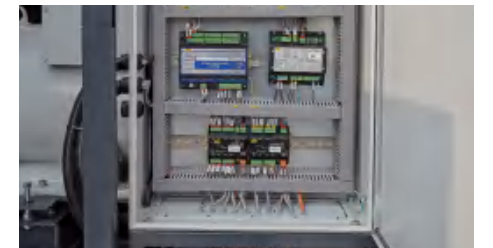


# CG series

High value

## Product features

- A high value product, power ranges from 50-1000kWe
- Lean combustion technology is adopted for high efficiency and low emission
- Modular structure design, can be quickly installed and put into use
- It has three design structures, open, soundproof and containerised types, to meet different application use.
- PCC300 control system, advanced intelligence, reduce labour cost
- Automatic refilling of the oil system to ensure long operation duration of the unit.
- Continuous operation up to 8000h, overhaul cycle 50000h



## CG series type spectrum

Model	Electric power/kWe	Thermal power/kWt	Electric efficiency	Thermal efficiency	Total efficiency
CG50-NG	50	73	36.5%	53.5%	90.0%
CG66-NG	66	82	37.0%	46.0%	83.0%
CG75-NG	75	109	37.0%	46.0%	83.0%
CG100-NG	100	132	38.0%	46.0%	84.0%
CG150-NG	150	207	38.3%	52.8%	91.2%
CG200-NG	200	263	37.2%	48.9%	86.1%
CG220-NG	220	237	43.4%	46.8%	90.2%
CG270-NG	270	368	39.6%	54.0%	93.6%
CG350-NG	350	439	41.9%	52.5%	94.4%
CG430-NG	430	490	39.6%	44.6%	84.2%
CG520-NG	520	647	38.8%	48.3%	87.0%
CG1000-NG	1000	1090	38.7%	42.2%	80.9%

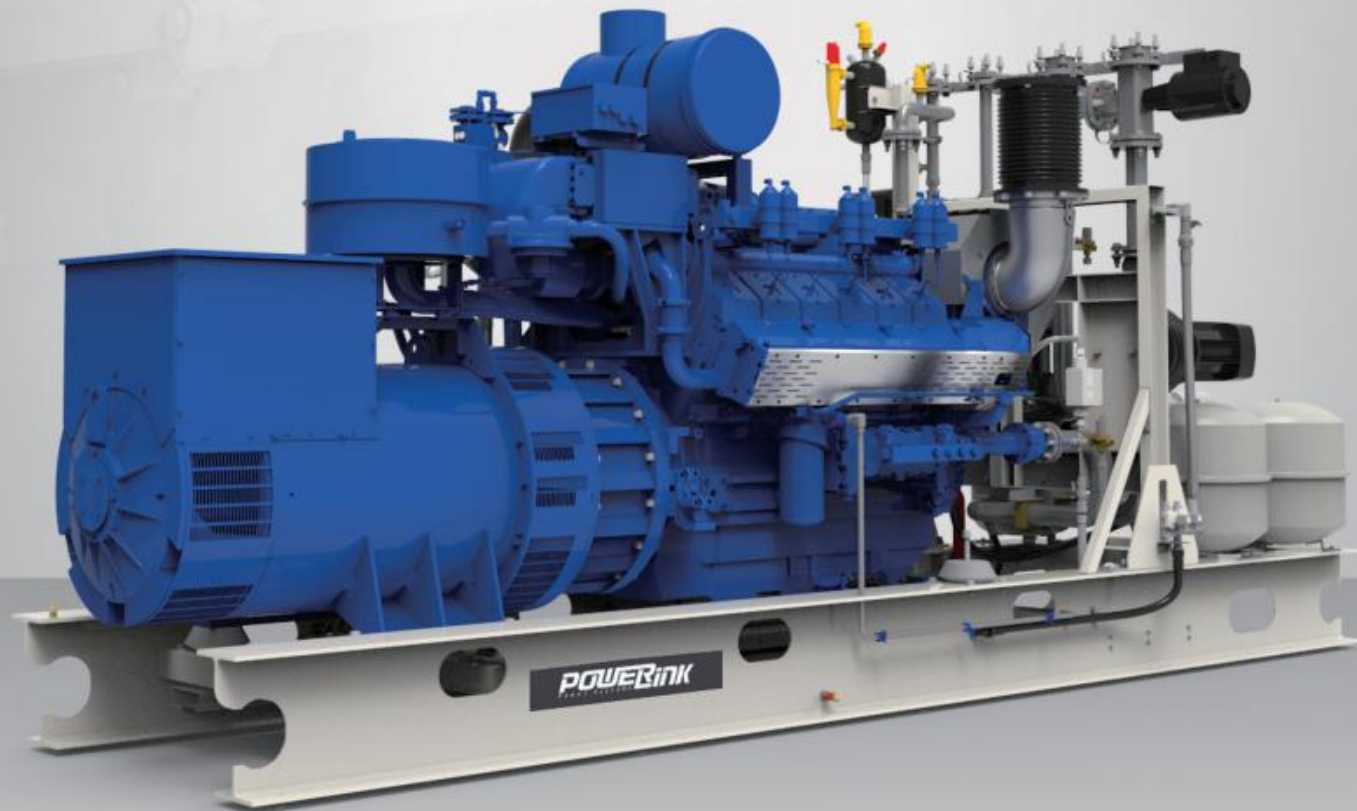
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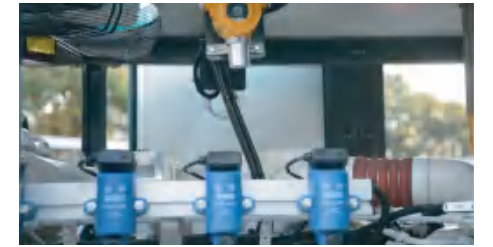
# TCG series

High Performance



## Product features

- A high performance product, power ranges from 600-2300kWe
- Lean combustion technology is adopted for high efficiency and low emission
- Modular structure design, can be quickly installed and put into use
- There are two kinds of open and outdoor design structures, which can meet different application environments
- PCC300 control system, advanced intelligence, reduce labour cost
- Automatic refilling of the oil system to ensure long operation duration of the unit.
- Continuous operation up to 8000h, overhaul cycle 64000h



## TCG series type spectrum

Model	Electric power/kWe	Thermal power/kWt	Electric efficiency	Thermal efficiency	Total efficiency
TCG600-NG	600	618	43.3%	44.6%	87.9%
TCG800-NG	800	821	43.5%	44.6%	88.1%
TCG1000-NG	1000	1057	43.0%	45.4%	88.4%
TCG1200-NG	1200	1190	43.6%	43.3%	86.9%
TCG1560-NG	1560	1580	43.2%	43.8%	87.0%
TCG2000-NG	2000	1912	44.4%	42.5%	86.9%
TCG2300-NG	2300	2162	45.0%	42.3%	87.3%

Notes:

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#### A hotel and club project in Czech

- Natural gas cogeneration unit: GXC200S-NG
- Mode of electric output: low voltage 400V Internet
- Field / fuel: Hotel Club / gas
- Total output power: 200kW

#### A Russian thermal power plant project

- Natural gas cogeneration unit: CG250S-NG
- Mode of electric output: low voltage
- Field/fuel: Urban distributed power supply heating/natural gas
- Total output power: 250kW



## Case of Natural Gas Application



#### A Russian boiler plant project

- Natural gas cogeneration unit: CG400S-NG
- Mode of electric output: low voltage Internet
- Area / fuel: Urban distributed power supply, heating, and natural gas.
- Total output power: 400kW

