

# Do you have the following problems?

- ELECTRICITY SHORTAGE
- HEAT DEFICIENCY
- HIGH COSTS
- COMPLEX INFRASTRUCTURE CONSTRUCTION



[www.bscgroup.eu](http://www.bscgroup.eu)

ARE YOU WANT  
PREDICTABLE COSTS  
AND ENERGY  
BENEFITS?

THE SOLUTION TO  
THESE PROBLEMS IS  
COGENERATION



## WHAT IS COGENERATION?



Cogeneration (combined electrical and thermal energy) is the joint production of thermal and electrical energy that is used in work. The main and fundamental principle of cogeneration is that in order to maximize the many benefits, it is necessary that the system is based on work related to heat loss. This can be an individual building, a squandered enterprise or a city/town served by district networks (heating/air conditioning). Thanks to heat recovery, the efficiency of an enterprise with cogeneration can reach 90% or more.

## COGENERATION OPTIMIZES ENERGY SUPPLY AND HAS THE FOLLOWING ADVANTAGES:

- Improved energy conversion and operation efficiency. Cogeneration is the most efficient form of energy generation.
- Fast efficient and relatively small investments to restore power supply to vast residential areas and factories.
- Allows autonomous internal supply of power grids in case of large breakdowns of external supply lines.
- Reduced emissions into the environment, especially CO<sub>2</sub>, of the main greenhouse gas. Cogeneration is the only global solution to the goals of the Kyoto Protocol.
- Significant economic benefits that provide additional benefits for industrialists and entrepreneurs, and offer inexpensive heat to private consumers.
- Potential for transition to more decentralized forms of electricity generation, where plants are designed to meet the needs of local consumers, offering greater efficiency, avoiding transportation losses and increasing the flexibility of the operating system. This is especially noticeable if natural gas is used as a source of energy.
- Improved local and general service - local generation + cogeneration can reduce the risk of consumers being left without electricity/heat supplied. In addition, dependence on fuel imports will decrease - assistance in finding a solution for the European energy future.
- Capacity to increase the diversification of generation enterprises, increase competition. Cogeneration provides liberalization of the energy market, which is one of the most important engines of promotion.
- Increase in jobs. Development of CHP systems - generator of workplaces.
- Cost reduction  
The cost of 1 kW produced with the help of a gas power plant can be 2 or more times lower than the cost of network electricity. The electrical efficiency of the GPU, depending on the capacity of the installation, is 35-42%.
- Transportation  
The production of electricity and heat in close proximity to the consumer reduces the cost due to the absence of a network tariff, the cost of connecting capacities and reducing losses in centralized energy supply.
- Energy independence  
The optimal mode of operation of the mini-CHP allows not only to provide autonomous power supply, but also to achieve additional stability when working in parallel with the power system.
- Cost-effectiveness  
Cogeneration saves up to 60% of energy compared to separate power generation in power plants and the use of heating boilers.
- Payback of mini-CHP  
The reduction of the payback period is also achieved through the use of mini-CHP to cover the base load in parallel operation with the network.



## STAGES OF PROJECT IMPLEMENTATION /TYPICAL EXAMPLE/

### Energy audit

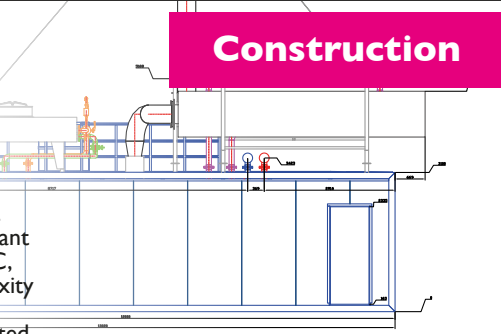


BSC Technical specialists will make an assessment of economic efficiency, calculate the approximate payback period of investment.

### Construction

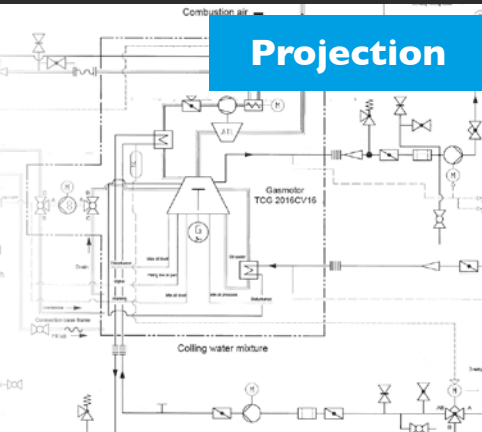
The general contract is concluded directly with BSC GROUP Ltd which has fixed assets, the company offers a quick way to deploy a power facility on the customer's territory - by supplying equipment in containers. At the plant of metal structures BSC, modules of any complexity are produced.

Containers are automated and equipped with internal systems (fire, security alarm, heating, ventilation). At the place of operation, it is necessary to prepare the foundation and conduct communications.



### Projection

The BSC Engineering Center will select the equipment, design the facility and develop a connection scheme for the energy center. The advantage of BSC is a large selection of manufacturers with whom the company works directly. At one capacity, the company makes several offers so that the client chooses the optimal one.



### Installation supervision and commissioning

BSC engineers will check the correct installation of the equipment, connect, launch and conduct a briefing on the operation of the equipment.



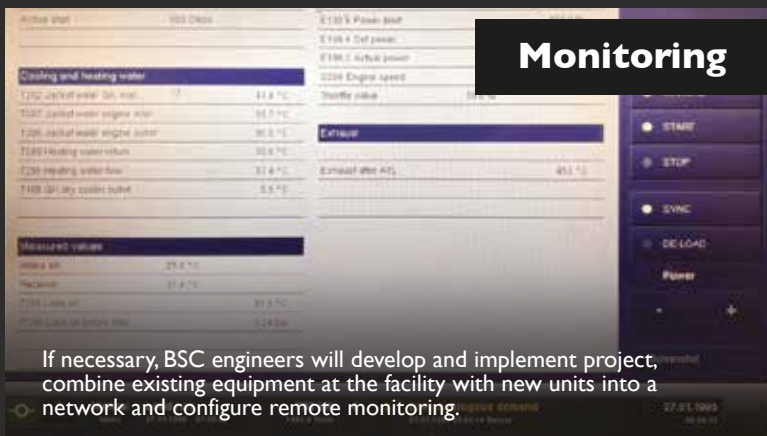
### Coordination

There is coordination with design institutes, with authorities, supervisory bodies, natural monopolies



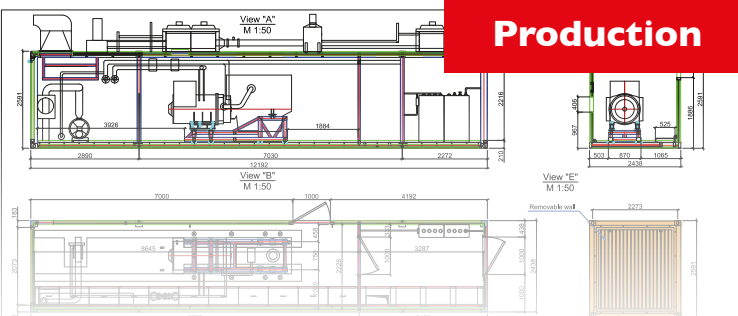
### Monitoring

If necessary, BSC engineers will develop and implement project, combine existing equipment at the facility with new units into a network and configure remote monitoring.



### Production

BSC has one of the most modern production facilities in Baltia for the assembly of power plants on diesel and gas engines. The plant is certified in accordance with ISO 9001:2011 standards.



### Service

BSC offers flexible conditions for the maintenance of power facilities: from one-time contracts to long-term service contracts for diagnostics and repair, maintenance, overhaul of engines, operation (constant presence of BSC engineers at the facility for equipment management, adjustment and current repairs).



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## BSC GROUP (LATVIA) PRODUCT OVERVIEW 2023 GENSET and CONTAINER TYPE, PLUG & PLAY COMBINED HEAT AND POWER PLANTS (CHP) FOR NATURAL GAS, BIOGAS, SEWAGE AND LANDFILL GAS APPLICATIONS

Model	Engine type	Output, kW		Efficiency, %			CHP container*, L x W x H (m)
		Electrical	Thermal	Electrical	Thermal	Total	
BSC 50 NG	MAN	50	80	34.7	55.6	90.3	3.20 x 1.20 x 2.30
BSC 65 NG	MAN	63	95	35.6	53.7	89.3	3.20 x 1.20 x 2.30
BSC 100 NG	MAN	104	148	36.9	52.6	89.5	3.20 x 1.20 x 2.30
							6.00 x 2.50 x 2.80**
BSC 130 NG	MAN	130	190	36.5	53.4	89.9	6.00 x 2.50 x 2.80
BSC 210 NG	MAN	210	280	38.0	50.5	88.5	6.00 x 2.50 x 2.80
BSC 260 NG	MAN	260	370	37.4	53.3	90.7	12.20 x 3.00 x 3.00
BSC 350 NG	MAN	353	436	39.1	48.3	87.4	12.20 x 3.00 x 3.00
BSC 430 NG	MAN	430	490	39.4	48.6	88.0	12.20 x 3.00 x 3.00
BSC 530 NG	MAN	529	630	39.1	47.5	86.6	12.20 x 3.00 x 3.00
BSC 600 NG	MWM/CAT	600	620	42.0	45.7	87.7	12.20 x 3.00 x 3.00
BSC 800 NG	MWM/CAT	800	855	42.3	45.5	87.8	12.20 x 3.00 x 3.00
BSC 1200 NG	MWM/CAT	1200	1197	43.7	43.5	87.2	14.00 x 3.30 x 3.40
BSC 1600 NG	MWM/CAT	1560	1592	43.3	44.0	87.3	14.00 x 3.30 x 3.40
BSC 2000 NG	MWM/CAT	2000	1990	43.6	43.4	87.0	14.00 x 3.30 x 3.40

\* Acoustic emissions 70 dB at a distance of 1 m and 65 dB at a distance of 10 m \*\* Available as optional solution