GTP

gas to power

Design and manufacturing
of CHP systems

Natural gas
Landfill gas
Biogas

The Company

highly motivated

wide ranging know-how

GTP Solutions GmbH is an independend owners leaded company and busy in the fields of Engineering and plant manufacturing for gas engine CHP including auxiliary components.
Based on existing modular standard solutions tailor made solutions for the customers are created.
Which scope of services will be supplied by GTP is totally dependent by the customer needs. Starting from engineering services up to turnkey deliveries everything is possible.

In all supplied services quality is the highest priority for GTP. That means for engineering and design works as well as for the choice of all plant components.

long term experience

flexible solutions

power

Overview of GTP Services

Engineering and Design for CHP plants

Plant manufacturing

Biogas treatment systems

2nd hand and RECON CHP units

power

Engineering and Design for CHP plants

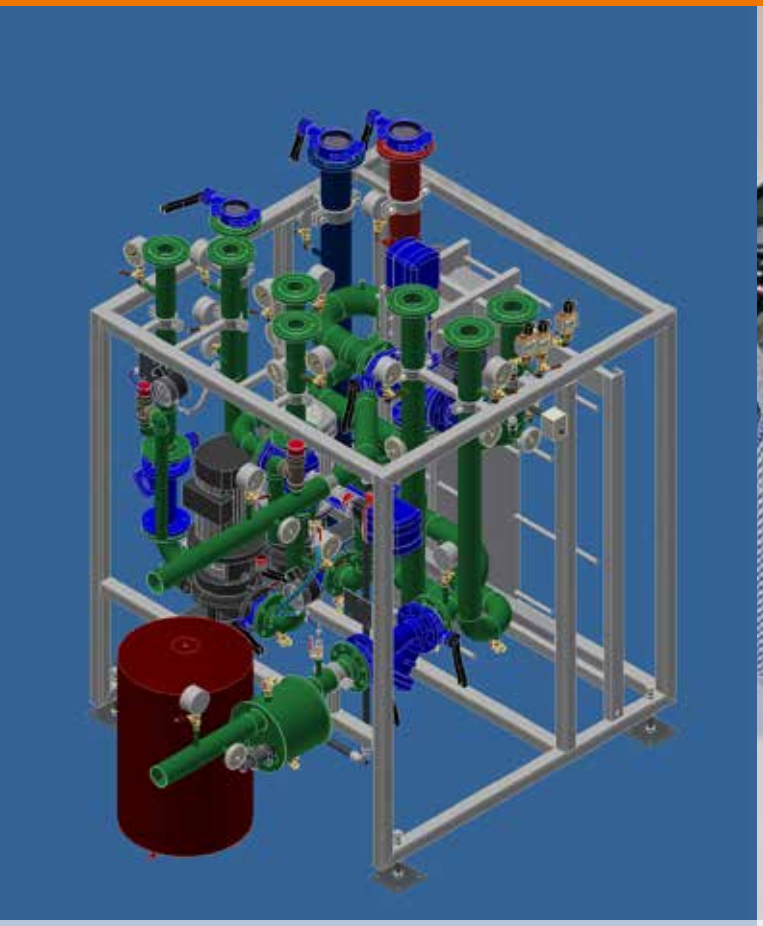
detailed construction and design works

CHP Container installed on customer site

The GTP pallet of engineering services contents the entire spectre from the gas supply up to the gas valorisation. Normally everything starts with the general flow diagram of the plant. The next steps are the detailed design engineering and the construction of the plants. GTP is also doing the design of the electrical control panel and components.

GTP is able to include the entire scope of supply:

- **Gas treatment systems**
- **Biogas booster**
- **Gas flares**
- **CHP systems**
- **Heat recovery systems, hot water, steam, chilled water**
- **Electrical systems, transfo**



3D and 2D modeling for production

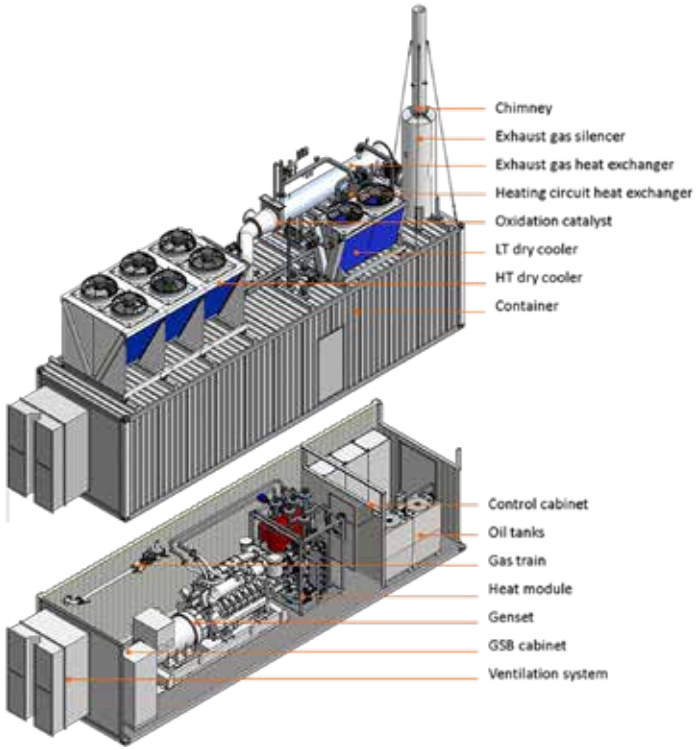
process engineering works

Plant manufacturing

After the careful design of the entire plant the manufacturing process is started. The customer also can do personal contributions in order to receive the maximum cost efficiency. With modular pre-fabricated systems the plant will be finished on site quickly, professional and finally commissioned.

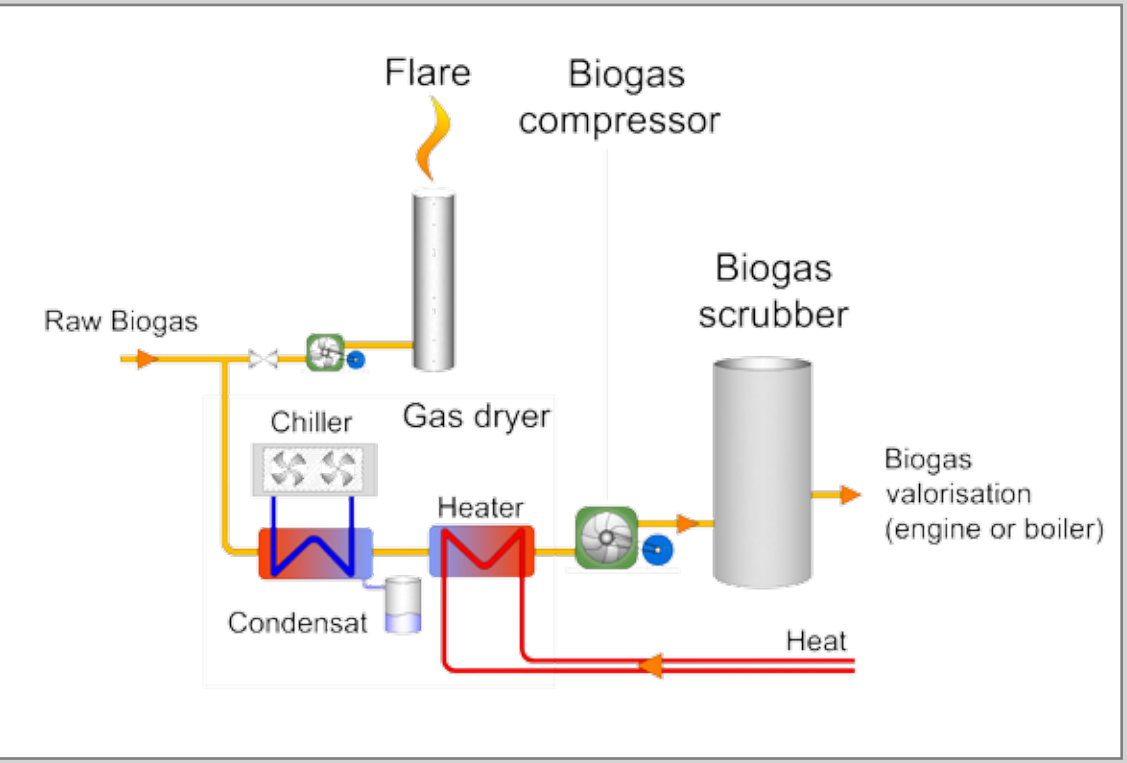
The GTP Scope contents the following:

- **Mechanical manufacturing and turnkey assembly of plants**
- **Pipeline construction of black and stainless steel.**
- **Electrical cable assembly for power and signal cable**


Chimney
Exhaust gas silencer
Exhaust gas heat exchanger
Heating circuit heat exchanger
Oxidation catalyst
LT dry cooler
HT dry cooler
Container
Control cabinet
Oil tanks
Gas train
Heat module
Genset
GSB cabinet
Ventilation system

power

Biogas Treatment systems



Biological desuphurisation

To ensure a long-term and secure CHP operation also with biogas as energy source, it is highly important to design a biogas treatment system which fits to the selected engine mark. It is mandatory to keep the inlet conditions of the biogas to the gas engine according to the manufacturer rules. For example the accepted inlet pressure or the H_2S condition are only 2 of multiple possible questions.

GTP is able to deliver adapted systems mainly for the following 3 engine marks:

- **MTU Onsite Energy**
- **Caterpillar/MWM**
- **GE Jenbacher**

Activated carbon filters

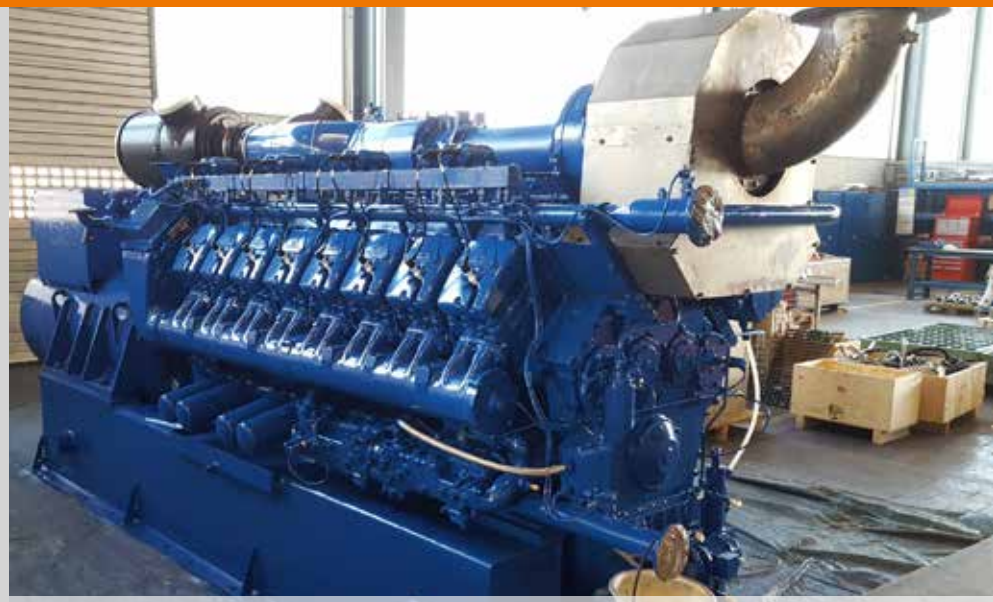
Gas drying executed as combinated cooling / re-heating and gas booster for the pressure increase to feed the gas engine

power

2nd hand and RECON CHP units

2nd hand CHP plants are usually in container design because of their flexibility, modular design and as alternative cost effective solution.

Overhauled CHP Container after installation onsite



MWM gas engine after E70 general overhaul

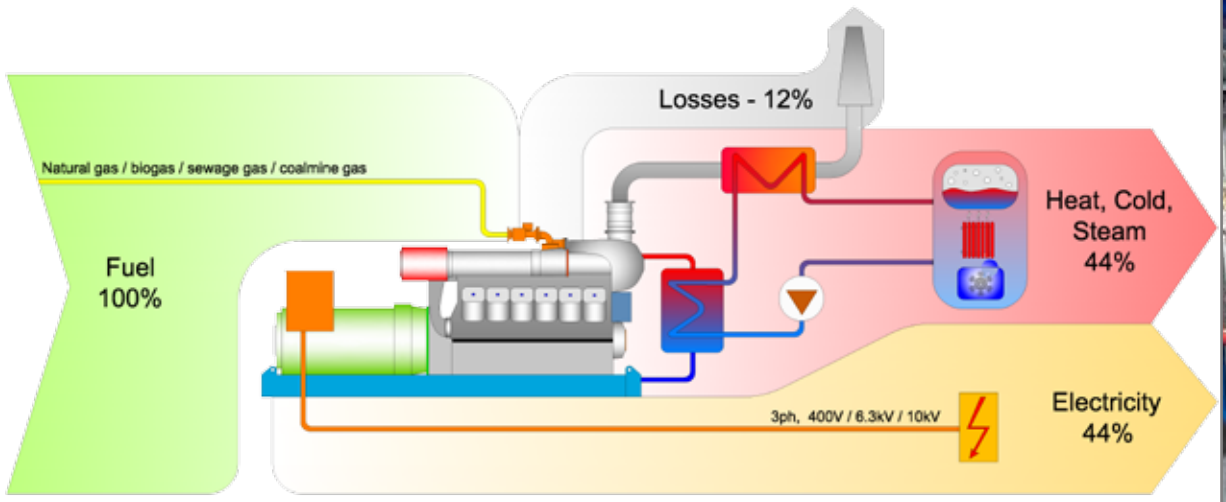
According to customer wishes the plants can be delivered in different conditions

- actual condition
- partly overhauled according to necessity
- as complete overhauled plant

2nd hand container during pick-up on customer site

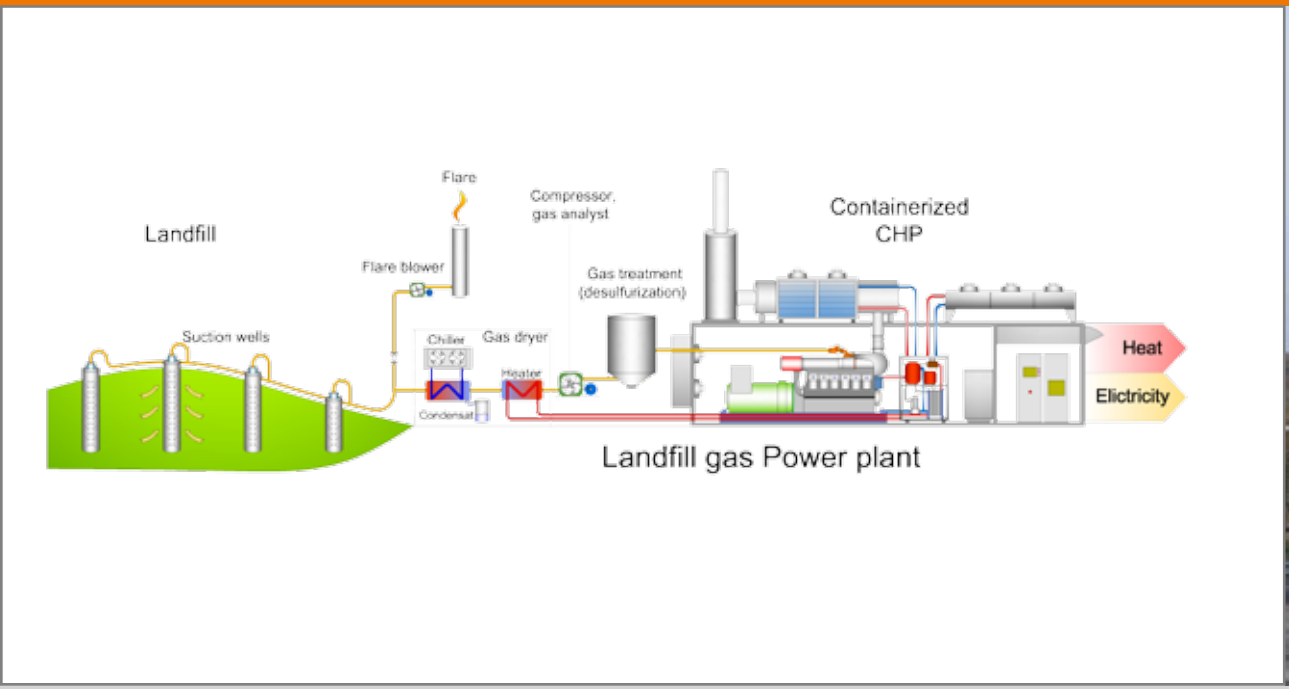
inside view MWM container after overhaul

Natural gas CHP



Decentralised cogeneration plants (CHP) are using natural gas with the highest efficiencies to produce electrical power and thermal heat in parallel. Depending on the customer requirements for the utilisation of thermal heat, adapted technical solutions are created to produce hot water, steam or chilled water.

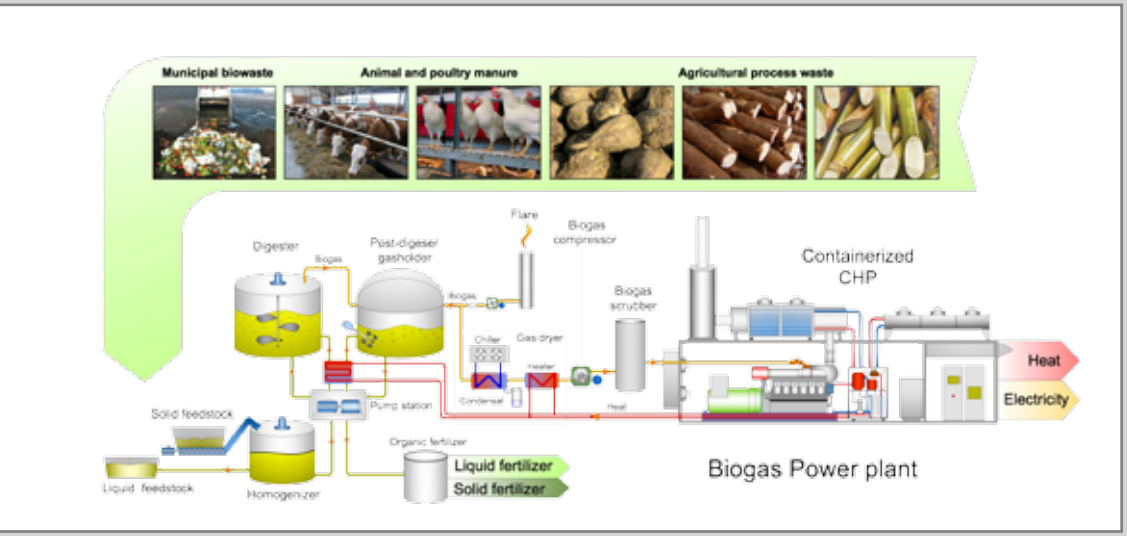
Landfill gas CHP



The biogas which is produced inside a landfill must be collected and should be useful valorised. The valorisation of the methane rich gas reduces on the one hand side the greenhouse gas effect. On the other hand side the produced electrical power and thermal heat can be used in parallel.

GTP is designing and manufacturing gas valorisation plants based on modern gas engines incl. the necessary gas treatment like booster, flare and gas cleaning systems

Biogas CHP plants



Biogas plants are feed with different organic raw materials. With the anaerobic digestion process a methane rich gas is produced to be valoristed useful. Normally modern gas engines produce decentralised electrical power and thermal heat.

GTP is designing and manufacturing gas valorised plants based on modern gas engines incl. the necessary gas treatment like booster, flare and gas cleaning systems

power

International - GTP in Thailand

RETECH ENERGY
ENERGY & ENVIRONMENTAL SOLUTIONS

GE engine in commissioning process

Designed and developed in Germany

For the Asian market GTP designs and manufactures CHP plants with local manufacturing facilities in Thailand.

The whole plant design is done in the German headquarter. After the design is finished GTP purchases and exports the main components with high quality from Europe mainly Germany.

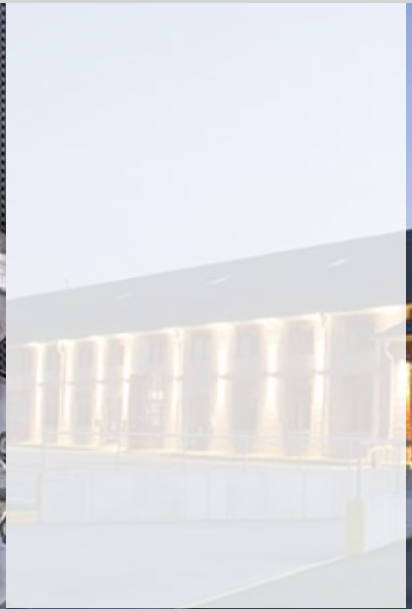
To house the CHP system enclosure or container systems are produced in Thailand. After the arrival of the European components a turnkey CHP plant is assembled. GTP is leading all that process with an own team and send a supervisor from Europe to ensure a correct execution.

Sales and the local support for GTP products is done by our local Thai partner company Retech Energy Co., Ltd.

Manufactured locally

Container CHP manufacturing facility Thailand

power



gas to power

power

GTP Solutions GmbH

An der Beek 255

D-41372 Niederkrüchten

Fon. **+49 (2163) 579 829 - 0**

Fax. **+49 (2163) 579 829 - 1**

www.gtp-solutions.com

Email: **info@gtp-solutions.com**