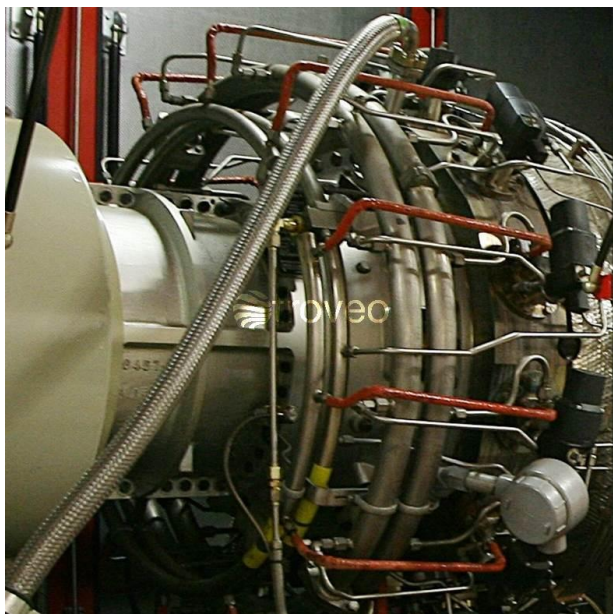


GENERAL DESCRIPTION

Type: Combined Heat and Power Plant

Location: Western Europe



This set of boilers and gas turbine generators originates from a combined heat and power plant being in operation at an industry site in Western Europe. The set of equipment resembles two power generation sub-units with total electric capacity of 14 MW.

Sub-unit **A** can be regarded as a small size CCGT unit with sufficient spare steam capacity to add at least one further steam turbine in order to increase electric output and overall efficiency. The heat recovery steam generator has supplementary gas firing and steam output is at 60 bar.

Sub-unit **B** is a typical CHP gas-turbine with a subsequent heat recovery steam generator and steam output at 20 bar.

Units **A** and **B** can be operated separately. This well maintained, operational plant will be available due to site restructuring in autumn 2018.

This quite new second-hand plant will be ideal for industry sites in need of flexible supply with both, electricity and heat.

Offering

item / type	2 gas-turbine-generator-HRSG sets with auxiliary systems
typical usage	combined head and power generation
status	operational, fully serviced, very good condition
availability for dismantling	autumn 2018
sales prices	1.8 Mio Euro ask price
cost of new (for comparison)	8 Mio. Euro (approx., for the entire set as offered)

new build time (for comparison) 12 months (approx.)

Key Figures

main fuel type natural gas or light fuel oil

electrical output 14 MW_e gross capacity (approx.)

thermal output 70 MW_{th} gross capacity (approx.)

plant size 500 m² (approx., depending on HRSG setups)

year of commissioning between 2004 and 2012

Operating Figures

max. generation capacity 14 MW_e (approx., at full load)

fuel quality natural gas, light fuel oil

fuel storage capacity (not included)

type of cooling air cooling

Technical Figures of Main Components

This power unit for sale comprises two gas turbines, one steam turbine, three power generators, two HRSGs and selected components of the water / steam cycle.

Sub-unit A

gas turbine GT-A	<p>industrial gas turbine (dual fuel) electrical capacity approx. 7.2 MW (at full load) thermal capacity approx. 25 MW thermal efficiency 34 % rated speed 15,200 rpm exhaust flow rate and temperature 26 kg/s at 490 °C total operating hours 95.000 approx. year of commissioning 2005</p>
generator GT-A	<p>approx. 8.4 MVA rated speed 1,500 rpm rated voltage 6.3 kV air cooling year of commissioning 2005</p>
HRSG A (heat recovery steam generator)	<p>steam volume 40 t/h steam pressure 60 bar steam temperature 490 °C supplementary gas firing of 34 MW (2 gas or LFO burners) optional hot water extraction 3 MW flue stack height 25 m bypass stack - yes total operating hours 76.000 approx. year of commissioning 2004</p>
steam turbine ST-A	<p>Industry backpressure steam turbine capacity approx. 1.4 MW (at full load) automated start-up and shut-down operation steam inlet volume and pressure 10.5 t/h, 60 bar at 490 °C heat extraction pressure 3.5 bar at 190 °C total operating hours 16,000 approx. year of commissioning 2012</p>
generator ST-A	<p>approx. 1.5 MVA rated voltage 0.4 kV air cooling year of commissioning 2012</p>

Sub-unit B

gas turbine GT-B	<p>industrial gas turbine, dual fuel electrical capacity approx. 5.2 MW (at full load) thermal capacity approx. 20 MW exhaust flow rate and temperature 21 kg/s at 510 °C total operating hours 34.000 approx. year of commissioning 2005</p>
Generator GT-B	<p>approx. 5.9 MVA rated voltage 6.3 kV air cooling year of commissioning 2005</p>
HRSG B (heat recovery steam generator)	<p>steam volume 13 t/h steam pressure 20 bar steam temperature 212 °C flue stack height 25 m bypass stack - none total operating hours 34.000 approx. year of commissioning 2005</p>

Additional Information

auxiliary systems	some equipment available on request
spare parts	some spare parts included
marketing service fee	will be paid by the seller

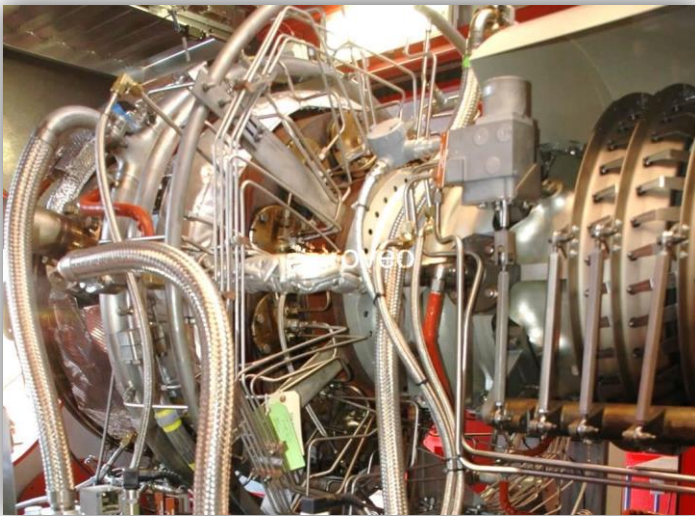
Disclaimer

Although the statements and technical information contained herein are believed to be materially accurate, no representation or warranty is given as to the accuracy of any of the information provided.

Contact

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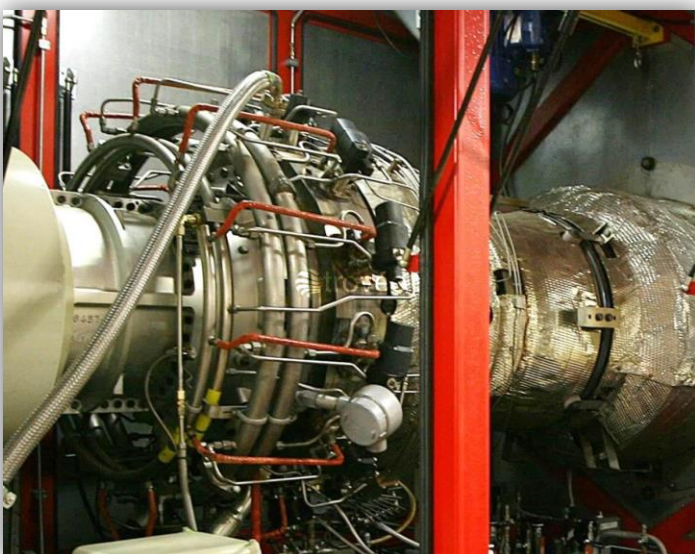
Impressions



GT-A, 7.2 MW, YoC 2005



ST-A, 1.4 MW, YoC 2012



GT-B, 5.2 MW, YoC 2005