

GENERAL DESCRIPTION

Type: Coal-fired Power Plant



Location: Western Europe

This thermal power plant with a combined coal-fired or oil-fired boiler and steam turbine is designed for power generation at 140 MW_e gross capacity and for heat generation with 28 MW_{th} thermal output.

Backdating from the late 1960ies, the unit was retrofitted in 2007 to significantly extend its operating life span and to meet state of the art efficiency targets.

The unit is fully equipped with modern flue gas cleaning systems.

Depending on market conditions, this power plant can be operated as base load or medium load power producer.

This power plant is on offer as a complete unit.

Offering

item / type	fully operational coal-fired boiler and steam turbine-generator set (heat extraction from boiler possible)
typical usage	base load to medium load production
special features	retrofit in 2007
status	mothballed since 2015
availability for dismantling	now
sales prices	Euro 9.000.000 € for all re-usable components
new build cost (for comparison)	Euro 220 Mio. (approx., for the entire plant)
new build time (for comparison)	2 years (approx.)

Key Figures

main fuel type	main supply: hard coal support supply: light fuel oil, heavy fuel oil, biomass residues
electrical output	140 MW _e gross capacity (approx.)
thermal output	28 MW _{th} optional gross capacity (approx.)
efficiency	35.5 % (if operated as power generation unit without heat extraction)
flue gas filter technology	- fly ash filter (<20 mg/m ³ dust) - desulphurisation (<200 mg/m ³ SO ₂) - denitrification (<200 mg/m ³ NO _x) exhaust gas volume 420,000 m ³ /h (at full capacity)
plant size	72,000 m ² (approx.)
year of commissioning / year of last retrofit	1968 / 2006/2007 (duration: in total 5 months)
major upgrades / events	flue gas cleaning systems added from 1985 onwards

Operating Figures

max. generation capacity	140 MW _e (approx., at full load)
min. generation capacity	65 MW _e (approx., at min. load)
cold start time:	720 minutes (to reach max. capacity) 240 minutes (to start grid synchronization)
fuel quality	hard coal; avg. 25 MJ/kg calorific value (also possible: light fuel oil and heavy fuel oil)
fuel consumption at full load	38 t/h hard coal
fuel consumption at min. load	25 t/h hard coal
fuel storage capacity	(not included)
type of cooling	river water circulation
amount of cooling water	20,000 m ³ /h (approx., at full load)

Technical Figures of Main Components

This power generation unit for sale comprises a Benson type tower boiler, a 140 MW steam turbine, a 156 MVA generator and selected components of the water / steam cycle:

coal mills and fans	3x 18 t/h capacity
boiler	MAN steam generator / Benson type boiler 12 coal-dust burners; 8 oil burners high pressure output 111 kg/s steam, 535°C, 182 bar superheating output 535°C, 42 bar
steam turbine	AEG, condensing turbine capacity approx. 145 MW (at full load) rated speed 3,000 rpm steam inlet pressure 180 bar at 530 °C total operating hours 298,000 (approx.) total No. of starts 3,400 (approx.) retrofit 2006
air and flue gas fans	air inlet fan system, flow rate 140 m ³ /s flue gas draft fan system, flow rate 233 m ³ /s De-SO ₂ fan system, flow rate 200 m ³ /s
generator	FKWS 156 MVA, cos phi 0.8 H ₂ cooling
water / steam cycle	amongst others: 3x feed water pumps, each 200 t/h, 275 bar, 3.1 MW (approx.) 4 low pressure and 2 high pressure pre-heaters
main transformer	BBC capacity 160 MVA voltages 17 / 10.5 kV
flue gas cleaning	DeNO _x : selective catalytic reduction / high-dust-mode DeDust: electro filter DeSO ₂ : lime based wet scrubbing
control and communication system	Siemens Simatic P7, PCS7 Maul-MEDAP

Additional Information

spare parts	not included
marketing fee	will be borne by the seller
dismantling of unit	dismantling costs shall be included in price quote

Impressions



turbine generator set



feedwater pumps



flue gas draft fan system

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.

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