

GENERAL DESCRIPTION

Type: Coal-fired Power Plant



Location: Western Europe

This hard-coal-fired thermal power plant with supporting firing by heavy-fuel-oil or biogenic-surrogate-fuels is designed for max. power generation at 175 MW_e capacity. Up to 17 MW_{th} heat extraction is possible, if needed.

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.

Commissioned in 1986, this unit had two major retrofits in 1993 and 2013 to significantly extend its operating life span and to meet state of the art efficiency targets. Total operating hours are just 124,000.

This power plant is on offer as a complete unit. It is preserved, in excellent condition and ready for dismantling and relocation.

Offering

item / type	<ul style="list-style-type: none"> ● hard-coal-fired power plant ● condensation plant with river water cooling ● optional heat extraction if required
typical usage	<ul style="list-style-type: none"> ● base load to medium load production
special features	<ul style="list-style-type: none"> ● hard-coal-fired boiler with heavy fuel oil and biomass support firing ● partial retrofits in 1993 and 2013
status	<ul style="list-style-type: none"> ● mothballed since mid-2016 ● currently in long-term preservation
availability for dismantling	<ul style="list-style-type: none"> ● any time, after sales deal has been concluded
sales prices	<ul style="list-style-type: none"> ● negotiable, quotes welcomed

new build cost (for comparison) ● Euro 300 Mio. (approx., for the entire new unit)

new build time (for comparison) ● 3 years incl. permissions (approx.)

Key Figures

main fuel type ● main supply: hard coal
● support supply: heavy fuel oil
● supplementary supply: biomass

electrical output ● 175 MW_e max. capacity (approx.)

thermal output ● 17 MW_{th} max. capacity, optional (approx.)

efficiency ● information will be provided on request

flue gas filter technology ● fly ash filter (28 mg/m³ dust)
● desulphurisation (181 mg/m³ SO₂)
● denitrification (203 mg/m³ NO_x)
● flue gas volume 700,000 m³/h (at full capacity)

plant size ● 22,000 m³ buildings (approx.)
● 210,000 m³ total (approx.) incl. roads, coal yard, ash deposit

**year of commissioning /
year of retrofits** ● 1986 commissioned
● 1993 complete retrofit of firing system
● 2011-13 retrofit of steam turbine controller

major upgrades and events ● 2001 optional supplementary biomass firing added
● 2005 extension to the existing DeNO_x catalyst filter
● 2006 new generator control and protection system
● 2006-09 entire control system replaced

Operating Figures

max. generation capacity ● 175 MW_e (approx., at full load)

min. generation capacity ● information will be provided on request

cold start time: ● information will be provided on request

fuel quality ● information will be provided on request

fuel consumption at full load ● 40 t/h (approx.)

fuel consumption at min. load ● information will be provided on request

fuel storage capacity ● not included

type of cooling ● river water circulation

amount of cooling water ● 13,000 t/h (approx.)

Technical Figures of Main Components

This power generation unit for sale comprises a triple-fuel boiler, a 175 MW condensing type steam turbine, a H₂-cooled 200 MVA generator, selected equipment of the water / steam cycle and a complete set of flue gas cleaning facilities.

coal handling yard ● conveyors from railway siding, 250 t/h
● conveyors from coal yard, 300 t/h

mills ● 4x bowl mills for hard coal, 2x 13 and 2x 18 t/h each
● 2x beater mills for supplementary fuel supply and as reserve

boiler ● one-way forced-circulation flow boiler with intermediate super heater
● designed for pulverized coal firing with 4-layer pulverized coal combustion system
● additional 12 steam atomising burners for oil combustion
● steam high pressure output 443 t/h, 535°C, 180 bar
● steam super heater output 535°C, 38 bar

air and flue gas fans, preheaters ● air inlet fan
● forced draught fan
● air preheater

steam turbine ● two casing condensing-type turbine with single reheating and district heating take-out (optional)
● capacity approx. 175 MW (at full load)
● rated speed 3,000 rpm
● live steam flow 440 t/h

	<ul style="list-style-type: none"> ● live steam inlet pressure 180 bar at 535 °C ● last major overhaul 2005, 124,000 operating hrs
generator	<ul style="list-style-type: none"> ● three phase synchronous generator with hydrogen cooling ● rated output 200 MVA ● rotation speed 3,000 rpm ● nominal voltage 15.8 kV ● nominal current 3.33 kA ● H₂ cooling
water / steam cycle	<ul style="list-style-type: none"> ● 2x main feed water pumps, 450 t/h each rotational speed 1,500 rpm engines 5.8 MW each (approx.)
cooling water supply	<ul style="list-style-type: none"> ● 2x cooling water pumps, 11,500 m³/h each rotational speed 530 rpm engines 0.6 MW each (approx.)
main transformer	<ul style="list-style-type: none"> ● step-up transformer ● capacity 200 MVA ● voltages 15.8 / 120 kV
service transformer	<ul style="list-style-type: none"> ● step-down transformer ● capacity 27 MVA ● voltages 15.8 / 6.8 kV
flue gas cleaning	<ul style="list-style-type: none"> ● DeDust: electrostatic precipitator, dedusting level 99,8% ● DeNO_x: two-stage nitrogen oxide reduction using urea injection and downstream SNCR catalyst layer, efficiency > 90% ● DeSO₂: wet desulphurisation with limestone, efficiency > 95% with gypsum output for building materials industry
control and communication system	<ul style="list-style-type: none"> ● completed modernised between 2006 and 2009

Additional Information

spare parts	<ul style="list-style-type: none"> ● included as available
documentation	<ul style="list-style-type: none"> ● full set of equipment documentation available ● full set of operating instructions available
marketing fee	<ul style="list-style-type: none"> ● fee will be borne by the seller

dismantling and relocation of unit

- costs shall be borne by buyer

Impressions



steam turbine – power generator set



feedwater pump



electric heat exchanger



modernised control centre



main step-up transformer

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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