

## GENERAL DESCRIPTION

### Type: Coal-fired Power Plant



### Location: Western Europe

This thermal power plant with a combined coal-fired or heavy-fuel-oil-fired boiler and steam turbine is designed for power generation at approx. 54 MW<sub>e</sub> gross capacity.

If optimally operated with heat extraction of 10 MW<sub>th</sub>, the generation capacity will be reduced to 50 MW<sub>e</sub>.

Backdating from 1969/ 1970, the unit had a major retrofit in 1986 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, is preserved, in good condition and ready for dismantling.

### Offering

<b>item / type</b>	#> hard-coal-fired power plant #> condensation plant with fresh water cooling #> optional heat extraction possible
<b>typical usage</b>	#> base load to medium load production
<b>special features</b>	#> dual-fuel boiler: hard coal and heavy fuel oil are possible #> retrofit in 1986
<b>status</b>	#> mothballed since 2013 (currently in long-term preservation)
<b>availability for dismantling</b>	#> any time, after sales deal has been concluded
<b>sales prices</b>	#> negotiable, quotes welcomed
<b>new build cost</b> (for comparison)	#> Euro 130 Mio. (approx., for the entire unit)

**new build time** (for comparison) #> 3 years (approx.)

## Key Figures

<b>main fuel type</b>	#> main supply: hard coal #> support supply: heavy fuel oil
<b>electrical output</b>	#> 54 MW <sub>e</sub> gross capacity (approx.)
<b>thermal output</b>	#> 10 MW <sub>th</sub> optional gross capacity (approx.)
<b>efficiency</b>	#> information will be provided on request
<b>flue gas filter technology</b>	#> fly ash filter ( max. 30 mg/m <sup>3</sup> dust ) #> desulphurisation ( max. 200 mg/m <sup>3</sup> SO <sub>2</sub> ) #> denitrification #> exhaust gas volume 260,000 m <sup>3</sup> /h (at full capacity)
<b>plant size</b>	#> information will be provided on request
<b>year of commissioning / year of last retrofit</b>	#>1969-70 / #>1986 major overhaul with fuel conversion to hard coal
<b>major upgrades / events</b>	flue gas cleaning systems added from 1985 onwards

## Operating Figures

<b>max. generation capacity</b>	#> 54 MW <sub>e</sub> (approx., at full load)
<b>min. generation capacity</b>	#> information will be provided on request
<b>cold start time:</b>	#> information will be provided on request
<b>fuel quality</b>	#> information will be provided on request
<b>fuel consumption at full load</b>	#> information will be provided on request

**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** #> information will be provided on request

### Technical Figures of Main Components

This power generation unit for sale comprises a lightweight construction boiler, a 54 MW condensing type steam turbine, an air-cooled 55 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

**mills** #> 2x beater mills for hard coal, 9 t/h capacity each  
#> 4x bowl mills for auxiliary fuel transport

**boiler** #> double pass natural circulation, once through boiler with refractory walls (lightweight construction) with 4-layer pulverized coal combustion system  
#> 12 steam atomising burners for oil combustion  
#> high pressure output 210 t/h steam, 530°C, 90 bar  
#> No. of starts (total, cold, warm): 675, 179, 496

**air and flue gas fans, preheaters** #> primary air fan, 9.0 m<sup>3</sup>/s  
#> forced draught fan  
#> Ljungström-air preheater  
#> induced draught fan

**steam turbine** #> one casing condensing turbine with single reheating and district heating take-out (optional)  
#> capacity approx. 54 MW (at full load)  
#> rated speed 3,000 rpm  
#> live steam flow 190 t/h  
#> live steam inlet pressure 90 bar at 525 °C

**generator** #> three phase synchronous generator with air cooling  
#> rated output: 156 MVA, 50 Hz

	<ul style="list-style-type: none"> <li>#&gt; rated speed 3,000 rpm</li> <li>#&gt; nominal voltage: 10.5 kV</li> <li>#&gt; nominal current: 3440 A</li> <li>#&gt; water cooling</li> </ul>
<b>water / steam cycle</b>	<ul style="list-style-type: none"> <li>#&gt; 2x feed water pumps, 5 stages, each 254 t/h</li> <li>rotational speed from 1,500 to 4,530 rpm</li> <li>engines: 1.25 MW (approx.), 6.3 kV</li> </ul>
<b>cooling water supply</b>	<ul style="list-style-type: none"> <li>#&gt; 2x vertical speed controlled full load centrifugal pumps</li> <li>rotational speed from 575 to 736 rpm</li> <li>5,100 m<sup>3</sup>/h each</li> <li>engines: 0.45 MW (approx.), 6.3 kV</li> </ul>
<b>main transformer</b>	<ul style="list-style-type: none"> <li>#&gt; step-up oil transformer with step switch</li> <li>#&gt; capacity 60 MVA</li> <li>#&gt; voltages 10.5 / 125 kV</li> </ul>
<b>service transformer</b>	<ul style="list-style-type: none"> <li>#&gt; step-down oil transformer with step switch</li> <li>#&gt; capacity 5.5 MVA</li> <li>#&gt; voltages 10.5 / 6 kV</li> </ul>
<b>flue gas cleaning</b>	<ul style="list-style-type: none"> <li>#&gt; DeDust: 2-stage electrostatic precipitator</li> <li>dedusting level 99,8%</li> <li>#&gt; DeNO<sub>x</sub>: two stage nitrogen oxide reduction (1993)</li> <li>by urea injection and SNCR, efficiency &gt; 90%</li> <li>#&gt; DeSO<sub>2</sub>: wet FGD (limestone system), efficiency &gt; 95%</li> <li>with gypsum for building materials industry</li> </ul>
<b>control and communication system</b>	<ul style="list-style-type: none"> <li>#&gt; modernised in the 1990ies</li> </ul>

### Additional Information

<b>spare parts</b>	<ul style="list-style-type: none"> <li>#&gt; included, if available</li> </ul>
<b>documentation</b>	<ul style="list-style-type: none"> <li>#&gt; full set of equipment documentation</li> <li>#&gt; full set of operating instructions</li> </ul>
<b>marketing fee</b>	<ul style="list-style-type: none"> <li>#&gt; fee will be borne by the seller</li> </ul>
<b>dismantling of unit</b>	<ul style="list-style-type: none"> <li>#&gt; costs shall be borne by buyer</li> </ul>

**Impressions**



*coal mill*





*steam turbine – power generator set*



*feedwater pump*



*air inlet fan*



cooling water supply system (water derived from river)

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**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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