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Directions of improving efficiency and reducing CO₂ emission in coal-fired supercritical power units

Abstract: They presented capabilities of increasing the efficiency of coal-fired power units. Possibilities of utilising the boiler outlet flue gas heat to warm up the condensate in the regeneration system or to dry coal were analysed. There was considered the possibility of generating electrical energy in the organic cycle of Rankine supplied with the flue gas waste heat. There was also presented an analysis of adapting the power unit to CO₂ removal. A scope of indispensable changes to the turbine and regeneration systems was indicated. Indicators of the hard and brown coal-fired power units' efficiency were analysed.