

Coal to Wood Pellets - Biomass Conversions

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Abstract

During recent years the boundary conditions for large scale energy generation has changed completely in Europe. The political interest to support renewable energy and the threat of global warming also resulted in a support of biomass generated electricity which is now more and more in the focus of operating companies of large steam generators. Ørsted, the largest energy company in Denmark has announced in February 2nd, 2017, that by 2023 they will phase out coal from their power plants. With the competition at the energy market with solar and wind power the flexibility to low operation is becoming more and more relevant.

Mitsubishi Hitachi Power Systems Europe GmbH conducted various biomass conversions of existing pulverized fuel firing systems. All projects had wood pellets as biomass fuel and were converted from bituminous coal firing to 100 % biomass firing keeping possibility of 100 % coal firing. Exemplary some major topics from the conversion of Studstrup PS (Studstrupværket) Unit 3 and Avedøre PS (Avedøreværket) Unit 1, both run by Ørsted in Denmark are addressed within this report.

One focus is on the achievable maximum and minimum load of the plants.