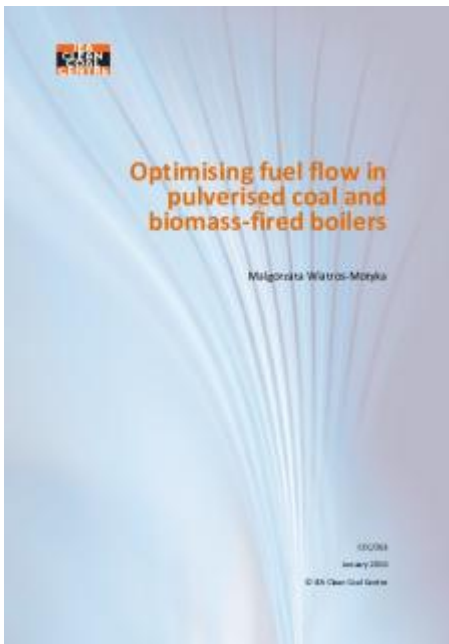


Optimizing fuel flow in pulverized coal and biomass-fired boilers_ccc263 ^[1]




Abstract

Poor pulverised fuel (PF) distribution to the burners has a significant, negative effect on combustion efficiency, wear of equipment and emissions, not to mention economics. The major areas of a power plant where improvements can be made are the mills, air/fuel ratio, pipework and boiler. However, before any optimisation can be achieved, measurements which are not only reliable and repeatable, but ideally in real time, must take place. Only then can accurate control and optimisation of the fuel flow be introduced. All of these are especially important in low NO_x burners which require precise fuel control in order to maintain uniform and efficient combustion.

The report looks at major areas where improvements can be made. It reviews recent developments in measurement and control systems for fuel fineness, combustion air streams, air/fuel ratio and the fuel flow distribution. Additionally, it briefly reviews advances in oxygen and carbon monoxide and carbon in ash monitoring and their usefulness in control and optimisation of air and fuel flow. Examples of the optimisation approaches and benefits that these can produce for both pulverised coal and biomass boilers are included.

[Attachment](#)

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 [Optimizing fuel flow in pulverized coal and biomass-fired boilers_ccc263](https://www.usea.org/publication/optimizing-fuel-flow-pulverized-coal-and-biomass-fired-boilers_ccc263)^[2]

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