

**8th Cofiring biomass with coal workshop, Copenhagen,
Denmark, 11-13 September 2018**

Synopsis of presentation by Doosan Lentjes

Authors: Frank Leuschke, Damian Goral, Heike Hünchen

Aspects of biomass co-firing for utility-sized CFB boilers

Electricity generation based on biomass incineration is about to become a substantial element of the total energy mix and will play an increasing role in the decarbonization of the energy sector. Biomass as a fuel has a variety of forms and a wide range of physical and chemical characteristics that must be addressed correctly before selecting a combustion technology.

The reduction of the CO₂ footprint is a critical issue for power utilities. This is why circulating fluidized bed (CFB) solutions have become the technology of choice to fulfil governments' targets on environmental performance and efforts to grow the share of renewables in the context of the energy transition. Against this background, the number of biomass projects will increase with a strong competition between developers leading to a consistent application of best available technologies (BAT) and highest efficiencies of the plants. Incentives set to steer the biomass market, such as, Feed in Tariffs (FiT) are expected to decrease in future. A CFB inherent combination of highest possible plant performance, acceptable investment cost and operational flexibility is available now.

This paper presents the design aspects of CFB boilers, co-fired with biomasses, by considering the selection of steam conditions, process design and specifics of boiler auxiliary equipment selection, as well as, the emissions control systems for those biomass co-firing applications. In this context, the experience with CFB boilers working with high steam conditions will be presented.