

2 MWe Oxy-CFBC에서 공기 모드에서
순산소 연소 모드로 전환 시 연료 성분 변화에 따른
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To reduce carbon dioxide, thermal power plants develop and apply carbon capture and storage (CCS) technology. Among many CCS technologies, the oxyfuel combustion is the process of burning a fuel using pure oxygen instead of air as the primary oxidant. During oxy-combustion, nitrogen in the air is replaced by carbon dioxide and water vapor, so that the nitrogen oxide concentration in the boiler is lowered and the efficiency of desulfurization in the furnace is increased.

In this study, to obtain the design data for modification of 2 MWe CFBC of air combustion condition installed at Korea Institute of Energy Research to oxyfuel combustion condition. In order to cope with the diversification of fuel, we predicted the change of gas concentration based on the mass and energy balance during oxyfuel combustion according to the change of the fuel composition for biomass, low grade coal of 5,000 kcal/kg or less, and municipal waste.