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The Evaluation of Coal Qualities for Circulating Fluidised Bed Boiler Technology for an IPP project at Delmas, Mpumalanga

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South Africa is experiencing a power crisis. In 2008 the South African government finally called for Independent Power Plants to be built, and this led to Eskom inviting the private sector to get involved on a Build, Own and Operate basis. Companies involving themselves in these new ventures are commonly known as Independent Power Producers (the IPP programme).

Kuyasa Mining became involved as an IPP and opted for a multi-phased, mine mouth, coal-fired power project. The first phase of the Kuyasa Mining's KiPower project would consist of a 600MW (gross) power project which comprises of four 150MW units.

The technology which Kuyasa opted to utilise for this power station is Circulating Fluidised Bed Combustion (CFBC) technology. Currently South Africa is not using this type of boilers, therefore when operational, KiPower will be the first of its kind in the country. CFBC can utilise lower quality coal, use less water and comply with the new stringent environmental legislations.

Kuyasa Mining owns an underground coal mine, Delmas Coal Mine, which will directly supply coal to the proposed power station. Three mining seams will be blended together and the coal will then be fed into the boiler. This research will determine whether blending the coal from the different coal seams will influence the combustibility of the coal, the efficiency of the power station, and the operating conditions of this boiler. The coal qualities from the Delmas Coal mine will be studied to completely understand the makeup of the coal from the different seams and the coal's combined combustibility.

