

Can the use of biomass and Co-gen help Eskom keep the lights on?

At a time when South Africa is critically short of electricity, it is vital that every source available in the short-term is used. The Department of Energy has said that it plans to procure 800 MW of electricity from cogeneration sources arising from biomass, industrial waste and combined heat and power.

On 22 July the "Optimisation of Industrial Boilers & Co-generation Conference" hosted by the Fossil Fuel Foundation takes place at the Gen Hove Conference Centre in Johannesburg.

This conference aims to provide information on boiler choice, operation, monitoring, maintenance and emissions measurement and control. The reduction of fuel costs and the increased production of electricity through the concepts of co-firing fuels and co-generation of steam and electricity will also be explored.

Biomass and coals are considered either as stand-alone fuels or used in co-fired applications. Biomass fuels continue to be a mainstay in many co-fired boilers but agricultural wastes have also proven to be another valuable source, says Daniel D. Hill, Director of Engineering of the Detroit Stoker Company.

Cogeneration is a highly efficient form of energy conversion and can achieve significant primary energy savings compared to the purchase of electricity from the national electricity grid and a gas boiler for onsite heating.

Optimising the performance of a boiler and its associated steam distribution system reduces running costs and improves site operations. Unfortunately more energy is lost in industry through steam wastage than through any other medium.

Coal used by Eskom in the past was mostly raw coal which only required crushing before being supplied directly to power stations by conveyor belt. This has changed in recent years and current supplies of coal to Eskom are mostly by road and rail. The coal is supplied from numerous small coal mines and most of these mines require processing of their coal to get it up to Eskom specification.

In March, Eskom had to implement load shedding for 14 hours after wet coal affected four generating units. (Business Day 14 July 2014)

The quality of raw coal being mined today is gradually declining as the better coal reserves in the central basin are reaching the end of their lifespan. Processing of the coal is therefore becoming more difficult.

CSIR's Johan de Korte and one of the presenters at the conference expressed his concern from the environmental perspective. "The impact that coal processing has on the environment is receiving more and more attention. The disposal of discards and coal slurry as well as the use of water are issues that contribute to the debate.

To counter these pressures, the coal processing industry is conducting research into methods that will reduce costs and reduce the impact of coal processing on

water resources. Coal processing plays an important part in the coal supply chain and is expected to play an ever increasing role in the future.'

Increased efficiency and reduced slagging as well as reduced maintenance and increased up-time are other critical objectives in coal fired boilers.

Industry needs to find answers increasingly urgently in the impending low carbon 'Green' economy. This conference may go a long way in providing solutions.

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All wishing to attend this conference should contact the conference secretariat:

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