Metso & UPM Develop Biomass Based Bio-Oil Production

Metso and UPM have developed a new concept for the production of biomass-based bio-oil to replace fossil fuels in heating and power generation. Test production will begin at Metso's test plant in Tampere, Finland, in June 2009.

Bio-oil can be manufactured by UPM's renewable energy power plants which are equipped with a suitable boiler and functional raw material management. The raw material of the bio-oil is wood biomass - harvesting residues and sawdust, which is a by-product of the forest industry. Combining bio-oil production to an existing biomass based power plant creates significant cost end efficiency advantages as well as new business.

Metso and UPM have developed the bio-oil production concept in cooperation with the Technical Research Centre of Finland (VTT) and with funding of the Finnish Funding Agency for Technology and Innovation (Tekes). Combined bio-oil and renewable energy production is a patented technology. It can be seen as continuation of the combined heat and power production concept developed in Finland.

The advantage of the CO2 neutral bio-oil produced from renewable raw material is its remarkable impact to the reduction of greenhouse emissions. Currently several parties around the world are researching possibilities to further process bio-oil into traffic fuel.

"Metso has recently announced two significant bioenergy projects: the license of biomass drying technology and the acquisition of the LignoBoost technology related to lignin removal. Developing bio-oil technology is an important continuation of these earlier announced bio energy projects. It further strengthens Metso's growth as a supplier of energy and environmental technology solutions, and opens up new business opportunities with regard to bio fuels," comments Kari Kuukkanen, General Manager, Technology, at Metso's Power business line. "Bio-oil will be produced with a new method out of solid biomass that is liquefied in a pyrolysis equipment integrated with the fluidized bed boiler of the power plant. In it, the biomass is heated in an oxygen-free atmosphere in a high temperature and vaporized as gases. The cooled gases are condensed into bio-oil."

UPM is one of the world's leading forest industry groups. UPM consists of three Business Groups: Energy and pulp, Paper, and Engineered materials. The Group employs around 24,000 people and it has production facilities in 14 countries. In 2008, UPM made sales of EUR 9.5 billion. UPM's shares are listed on the Helsinki

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