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Bright ideas

Alstom's Bill Miller and Nuon Energy's Adriaan Temmink discuss how technological upgrades are not the only path to power plant optimisation

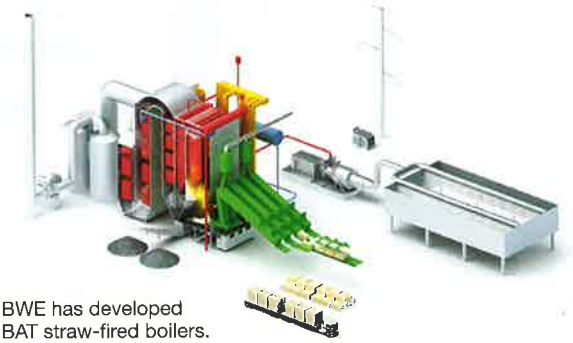
Burning success

Burmeister & Wain Energy (BWE) has been a true pioneer in the field of straw-fired boilers for power production since the late 1980s. The company has developed the best available technology (BAT) in the market, optimised to deliver high boiler efficiency, steam parameters, low maintenance and operation costs, high availability and long lifetime.

BAT has become a common request made to key technology providers from the stakeholders of renewable energy projects (authorities, politicians, power plant owners and investors). Sustainable energy is in marked demand, and renewable energy production using photovoltaic, wind and hydro sources has grown substantially under government-subsidised schemes throughout the UK and beyond.

Because the use of fossil fuels must be reduced to a minimum, biomass is the obvious solution, compensating according to sustainable energy requirement. Straw is one of the most sustainable energy resources available in Europe, and it can be used without major impact on the environment.

The Sleaford plant in Lincolnshire, UK, will have a heat input of up to 120MW, equivalent to a straw consumption of 240,000t/year, generating up to 38.5MW, which corresponds to approximately 65,000 households and businesses. By replacing coal, the plant will reduce CO_2 emissions by more than 150,000t/year.



BWE has developed BAT straw-fired boilers.

The core of the plant is a vibration-grate-fired drum boiler. The water-cooled vibration grate represents BAT for straw combustion and provides a reliable operation with little maintenance.

The straw is delivered as rectangular bales and stored in two 3,200m² barns, supplied via a long-term contract with local farmers. The project will produce a benefit for the local economy of approximately £10 million each year as well as 80 jobs during plant operation.

Sleaford is equipped with a flue-gas cleaning system that fully meets the required limits in terms of emissions and particulate.

Further information: Burmeister & Wain Energy www.bwe.dk

Unmanned solutions

Hibbard Inshore is an internationally focused engineering services company specialising in the use of remotely operated vehicles (ROVs) and the latest in marine survey equipment. The company's fleet of unmanned vehicles can operate in flooded, partially flooded and dry environments, while marine surveys can be completed using traditional boat-based methods or unmanned robotic vehicles. The variety of vehicles and methods allows inspection, survey and construction tasks to be performed in low or zero visibility, in currents, during short outage periods or in many areas that would otherwise be unsafe or economically restrictive for human access.

Close inspection

Underwater structural inspections for dams and power facilities' water systems are critical to identify any signs of degradation or loss of functionality. With more than 30 years of experience, Hibbard Inshore's inspections have included long tunnels, penstocks, face of dam, lower outlets, toe of dam, intakes, head gates and seals, trash racks, turbines, cooling and process water systems, and turbine shut off valves. Inspections of flooded tunnels can be performed at more than 20km from a single access point. Hibbard Inshore can equip each of its ROVs with cameras, lighting, multiple types of sonar and

Hibbard Inshore: specialists in unmanned and remotely controlled operations.

additional non-destructive testing sensors such as ultrasonic thickness gauges, in order to provide the best possible look at each underwater portion of a dam. Hibbard Inshore often performs these services while working with the customer to manage the project to a strict outage, reduce overall outage time or eliminate outage time altogether.

With the help of Hibbard Inshore, clients are able to decrease outage times while obtaining data to inform maintenance decisions, increase safety by using robotics for tasks dangerous to divers, increase diver efficiency by using ROVs to survey work areas and reduce maintenance costs by permitting some inspection services to be performed while units are running.

Further information: Hibbard Inshore www.hibbardinshore.com