

## **Biomass power plant efficiency improvement**



**At present, rice husk- and bagasse-fired power plants have the largest number and production capacities among biomass power plants. With low outstanding biomass, it is rather difficult to build new rice husk- or bagasse-fired power plants due to raw material constraint.** Therefore, enhancing efficiency of bagasse-fired power plants would promote production and usage of biomass power in accordance with targets set in the country's Alternative Energy Development plan.

Sugar plants have ultimate potential as alternative energy sources because all its wastes can be used for energy production. For instance, bagasse can be boiled in the boiler and the steam can be used to produce power while molasses can be used to make ethanol, a raw material for gasohol production.

Under the 10-year Alternative Energy Development plan, the efficiency enhancement of biomass power plants will initially start with power plants within sugar refiners before expanding to other types of biomass power plants, fueled by rice husk and palm.

The Joint Graduated School of Energy and Environment (JGSEE), in collaboration with the Energy Policy and Planning Office (EPPO), have conducted a study at 2-3 sugar refiners on revamping their boilers to High Pressure Boilers and found that the boiler change would create additional 2,000 megawatts out of the same biomass volume.

However, power produced by sugar refiners may not be able to transmit through the existing grid due to its massive volume that exceeds the transmission capacity of the grid that links to the central region. Therefore, the Electricity Generating Authority of Thailand (EGAT) will discuss with the Department of Alternative Energy

Development and Efficiency (DEDE) to quickly resolve the grid connection problem and seek ways to cope with projects that were granted power production quota but have not been able to commence operations. EGAT will purchase additional power only after it has assessed grid capacity for the current production capacity the capacities that were granted quota.



There have been training courses for operation and maintenance of boilers that run for around 3-4 years. The sugar industry has proposed to sell power to EGAT using the over booked method before the EGAT can speed up its plan to expand grid capacity in the Northeastern region to 500kv prior to its original schedule of 20016-2017.