

Biomass Energy Production: Prospects and Potential in Myanmar

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Abstract

Energy utilization in the residential sector of Myanmar accounts for more than 60 percent of total energy supply and the sector mainly depends upon traditional energy in the form of fuel wood, charcoal and raw biomass which are inefficient, wasteful and environmentally degradable process. Most raw material – based factories rely on the non-renewable energy sources although some of the factories could be made partially self-sufficient in energy through the bio-fuel conversion process of the recycled byproducts. Sound technologies are now available to better harness the biomass energy in terms of efficiency, conservation, and environmental sustainability.

The poster presentation from Myanmar highlights the pilot production of molasses- based gasohol production, potential bagasse-based power generation, and rice-husk as a promising candidate for biomass energy development model in the agriculture sector.

The yearly output of molasses from sugar industry of both state and private sectors are presently 122,500 MT . If 30 % of total molasses could be diverted to ethanol production, the total outturn of liquid fuel per year could be expected about 1,650,000 gallons. Azeotropic dehydration process is employed in producing gasohol by the efforts of Myanmar chemical engineers. The present pilot plant had started with the production capacity of 500 gallons of 99.5 % V/V anhydrous alcohol per day and unit product cost was almost equal to the domestic market price of the gasoline (petrol) and the gasohol usage was found to be 30 miles per gallon. Sugarcane and sweet sorghum are suitable energy crops in Myanmar. If sugar mills are upgraded and boiler efficiency are improved, the bagasse-based power generation could lead to co-generation (electrical supply) to the nearby villages of the factories. Total bagasse output was about 875,000 MT in the state sector. If the small and medium scale sugar mills of private sector could be redesigned and rehabilitated, there could be a large scope of improvement in energy- use efficiency.

About 20 percent of 22 million MT of national paddy production is available for rice - husk year round. Some medium to large scale rice mills use rice- husk as fuel to generate steam for steam engines. Small scale rice mills uses motors or diesel engines and these mills produce surplus rice - husk. This existing system could be improved by the technology of rice- husk gasification for power generation. According to the proposed

scheme of NEDO (New Energy and Industrial Development Organization of Japan), the compacting machine is designed to turn the surplus rice-husk into compacted rice-husk which could be generated into power by gasification furnace and the power could then be harnessed into the gas engine for running the rice milling machines. Thus rice-husk could be recycled back to the mills tapping the energy in much efficient way. Initial investments are needed in both state and private sectors for extensive use of biomass energy in Myanmar.

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