ABSTRACT

The Sugarcane Solution is the increase in global energy demand and environmental concerns is calling for a shift towards using renewable energy sources. Biomass is one of the renewable and carbon neutral energy sources that is being given attention.

The slow process in the shift from fossil fuels to bioenergy is because of the bulky and inconvenient forms of biomass for storage and transportation. However, there is an increased interest to convert biomass into easy to handle forms of liquid and gas through the major technological conversion processes available:-thermal, thermochemical and biochemical.

Sugar cane is one major feedstock for bioenergy production. This literature survey is part of a PhD project that focuses on poly generation in sugar cane industry. The PhD project focuses on assessing the possibilities of employing the concept of poly generation with the aim of improving the energy efficiency of the sugar mills thereby increasing the services from it. Advanced power generation systems have a big potential to be integrated into sugar cane factories and thus help generate surplus electricity. Usually, sugar mills having mechanical steam turbines have higher steam consumption due to the poor efficiency of the mechanical steam turbines. Replacement of these turbines with electric drives will improve the electrical power generation since steam will be saved.

Keywords: Biomass, sugar cane, bioenergy, poly generation, modern, traditional, energy efficiency, operation parameters