

ABSTRACT

Due to a decline in thermal efficiency and the rising costs of fuel during the last few years the energy economy of Jamaican sugar factories is poor. With the need to develop by-product industries any improvements in energy economy which can result in the saving of bagasse (above that required for factory energy requirements), and an elimination of oil burning will be of great benefit.

This thesis attempts to look at the energy utilization pattern in the factories with emphasis on boiler plant performance. The present state of the industry from an energy viewpoint is also analysed along with the major considerations for optimum efficiency.

Because of the scattered locations of the factories the collection of data from all factories was not feasible, hence an attempt was made to examine the boiler plant at two of the larger factories and to draw conclusions from the information gathered which are representative of conditions elsewhere. As necessary, data from other factories is referred to.

The recommendations for improvements in energy economy are centred around higher efficiencies in energy production and utilization, thus providing a bagasse surplus. An attempt was also made to analyse some benefits from modifications to existing facilities.

As discovered it is the boiler plant improvements which are central to improved energy economy within the industry.