

## POSTER SUMMARY

**INDICES FOR ENERGY INTENSITY MONITORING  
AND BENCHMARKING**FOXON KM<sup>1</sup>, DAVIS SB<sup>1</sup> AND STOLZ HNP<sup>2</sup><sup>1</sup>*Sugar Milling Research Institute NPC, c/o University of KwaZulu-Natal, Durban, 4041, South Africa*<sup>2</sup>*Tsb Sugar, PO Box 47, Malelane, 1320, South Africa*  
*kfoxon@smri.org sdavis@smri.org stolzn@tsb.co.za***Abstract**

As an industry that is energy self-sufficient, sugarcane processing has an opportunity to create additional income through co-generation from burning bagasse. Bagasse may also be diverted towards creation of higher value products in downstream processing. In either scenario, efficient energy use in the factory will translate into additional profits through increased availability of bagasse for co-generation or downstream processing. Similarly, factories that currently burn coal to raise steam can realise savings by reducing energy use.

In current mill operation, there are a variety of indices used to monitor energy consumption, including GJ/ton sugar produced, GJ/ton cane crushed, HP steam % cane and exhaust steam % cane. However, there are no widely accepted benchmarks for good performance in terms of these indices, due to differences in factory configuration, and because of differences in opinion regarding achievable energy efficiency.

In the petroleum refining industry, the Solomon Energy Intensity Index (EII) for process units and for the refinery as a whole are calculated and compared to internationally established benchmarks. A local petroleum refinery has reported that routine monitoring of energy intensity has resulted in significant savings through identification of inefficient energy use, and through rational assessment of the sensitivity of energy intensity to changes in process operation.

This poster reviews current sugar industry energy indices, examining factors that impact on the value and sensitivity of the indices to changes in factory operation. The concept of developing a monitoring and benchmarking system similar to the Solomon approach is proposed.

*Keywords:* energy, bagasse, energy efficiency, energy intensity