

International Conference on Agricultural and Food Engineering for Life (Cafei2012)
26-28 November 2012

ZERO DISCHARGE STRATEGY FOR THE PALM OIL MILL

Mohd Ali Hassan, Yoshihito Shirai

Universiti Putra Malaysia, Malaysia

Email: alihak@biotech.upm.edu.my

ABSTRACT

Currently palm oil mill effluent (POME) - the main waste stream from the palm oil mills - is treated mainly to remove its high biological oxygen demand (BOD) in order to meet discharge standards prior to disposal. The most common treatment system presently employed for POME is the anaerobic ponding system whereby the biogas produced is released into the atmosphere, causing environmental pollution due to the greenhouse effect. However, with biogas capture projects as suggested in the Economic Transformation Programme under Palm Oil Sector EPP5, in each mill the scrubbed biogas can be fed into a gas engine to generate easily 1MW of green renewable electricity for grid connection. The project qualifies for Clean Development Mechanism (CDM), with a payback period about 5 years. With the availability of this constant energy, the treated POME with a low BOD which is conventionally discharged can be aerated for recycling into the mill. The anaerobic sludge can be co-composted with biomass such as empty fruit bunch to produce organic compost. With these strategies in place, the palm oil mills can improve their operations towards achieving a zero discharge system.

Full paper is Not Available during time of printing