

**Biogas from Palm Oil Mill Effluent (POME): Recovery to Electrical Energy in Sawira
Biogas Plant, Muadzam Shah, Pahang**

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ABSTRACT

Biogas from Palm Oil Mill Effluent (POME): Recovery to Electrical Energy in Sawira Biogas Plant, Muadzam Shah, Pahang

The era of palm oil mill effluent (POME) along with the production of crude palm oil has formed environmental issue for the palm oil mill industry in Malaysia due to its polluting qualities. POME with its secondary natural substance is a basis for incredible possibility for biogas production. However, POME is ordinarily treated utilizing open ponding framework only to go along with legislature regulation without catching biogas discharged that harmful to environment at the time it been release from mill. Biogas created from anaerobic digestion of POME can be used in gas engine to generate electric. These case study was carried out at Sawira Biogas Power Plant, Muadzam Shah, Pahang. The case study were focus on an amount of biogas utilization, total energy production and percentage of chemical oxygen demand (COD) removal. The data was collected in four weeks observation. Total amount of biogas utilization for four weeks is 208212 m³, total energy production is 491380 kWh and percentage COD removal is 90%.

Keyword: POME, biogas, environment problems, electric generation

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Malaysia is the second largest country in export of oil palm after Indonesia. According to Basiron, (2011), he said that during 2010, RM60 billion was earned from oil palm industry and this value increased about RM10 billion from the year before. Oil palm industry, either cultivation or processing, has a big effect toward the country and the citizen itself in terms of economic, agriculture technologies and also social and environment.

Based on Figure 1, the assembly of palm oil superseded soybean oil starting with simply 13% in 1990 to 28% of total fats and oil processing in 2011. This may be in view that oil palm has a higher twelve-month oil yield for every hectare contrasted with different oil seed crops including soybean. Furthermore, palm oil has a generally lower price as contrasted with the real edible vegetable oils. With the higher global interest about palm oil, Malaysia's palm oil business has turned a standout amongst those biggest palm oil exporters and makers in the reality. Malaysia's palm oil exports accounted for 46% of the world's total palm oil production. Also, 37% of the world's palm oil production is generated in 2011. In spite of the fact that the expansion from the palm oil business has helped the country-wide financial system, it has also concurrently created a number of by-products, such as palm oil mill effluent.