

**THE EVALUATION OF ENERGY USAGE IN PALM OIL MILL AND
GREENHOUSE GAS EMISSION**

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DECLARATION

This final year project is a partial fulfilment of the requirement for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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ABSTRACT

THE EVALUATION OF ENERGY USAGE IN PALM OIL MILL AND GREENHOUSE GAS EMISSION

Oil palm plantation industry is a major sector in Malaysia which uses an intensive amount of energy. The number of palm oil mill will increase in the future since the total planting area keeps rising year by year. This situation will contribute to the greenhouse emission because the processing of crude palm oil requires lot energy and it will lead to the carbon dioxide release. There are two type of energy that commonly being use in a mill which is non-renewable energy resources (diesel) and renewable energy resources (biomass). The mill located at Muadzam Shah, Pahang was selected in this study and the historical data about the energy consumption in the mill was collected and evaluated. From the result, the mill that dependent more on boiler indicate the high energy consumption compared to the mill that use biogas as their power generator. The burning of fossil fuel indicates the major contribution to the greenhouse gas emission compared to the renewable energy resources such as palm residue and biogas. The use of renewable energy resources to generate electricity indicates the reduction to almost 70% of greenhouse gas emission compared to non-renewable energy resources which is diesel. This research shows the optimum utilizing of oil palm residue and biogas from water waste will help in reducing the greenhouse gas release by replacing the usage of fossil fuel to generate electricity. It also shows the reducing in total energy consumption when using a biogas is not affecting the CPO production.