

- **Biomass**

Demonstrating the Successful Implementation of a Biomass Renewable Project

Project Description

Owner	MHES Asia Sdn Bhd
Location	Bahau, Negeri Sembilan
Power Plant capacity	13 MW
Export to National Electricity Grid	10 MW
Fuel Type	Empty Fruit Bunch (EFB)
Total Project Cost	RM 79 Million
REPPA	RM 0.21/kWh for 21 years
Internal Rate of Return (IRR)	5.87% Without CDM
Pay Back Period	11.3 Years

Introduction

The demonstration project undertaken by MHES Asia Sdn Bhd to produce renewable energy for grid connection is a brave move. This is one of the first two Full Scale Model initiatives (FSM) of the Biomass-based Power Generation and Cogeneration in the Malaysian Palm Oil Industry (BioGen) project.

This project shows that it is possible to convert the energy stored in palm oil mill biomass into electricity thereby reducing an equivalent amount of fossil fuel that is fast depleting. A day will come when there will be no more fossil fuel for power generation. So we need a substitute fuel and the palm oil mill waste is one of the fuels that are readily available in abundance, coming to our rescue.

Technology Description

The collected EFB will be pressed in order to remove the moisture content from 65% to 55%. Pressed EFB will be ready to be combusted in the 2-stage burner. The ENVIROCYCLER technology from Canada burns wet biomass on a large grate converting biomass to burnable producer gas.

The producer gas is fully combusted in the 2nd stage of the ENVIROCYCLER to produce clean heat at approximately 1,010°C. This heat is channelled to the Heat Recovery Steam Generator to produce superheated steam to turn the turbine and generate electricity. The emissions from the ENVIROCYCLER are CO < 1ppm, NO_x < 15ppm and particulate < 100mg/Nm³

