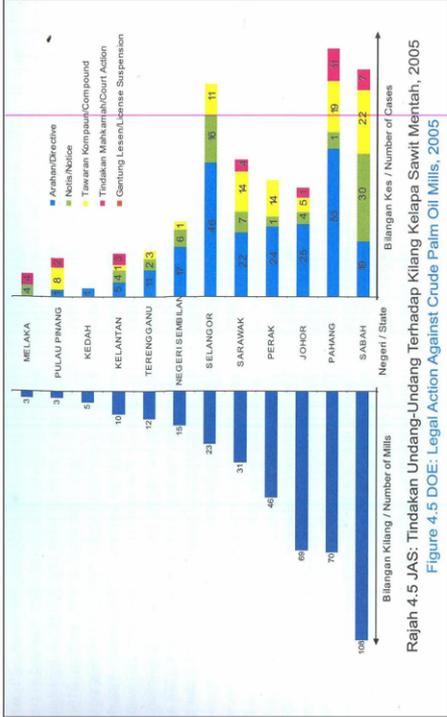


<div style="text-align: center;">  <p>Department of Environment, Malaysia</p> </div> <p style="text-align: center;">WORKSHOP ON “RESEARCH ON THE WORSENING URBAN ENVIRONMENTAL PROBLEMS IN ASIA TO MAKE AN INTELLECTUAL STRATEGIC BASE”</p> <p style="text-align: center;">KITAYUSHU, JAPAN 18-19 FEBRUARY 2009</p> <p style="text-align: center;">ROSMAH MOHD. YUSOF DEPARTMENT OF ENVIRONMENT MALAYSIA STATE OF TERENGGANU</p>	<div style="text-align: center;">  <p>Department of Environment, Malaysia</p> </div> <p style="text-align: center;">INDUSTRIAL ACTIVITIES CONTRIBUTE TO ENVIRONMENTAL POLLUTION PROBLEMS (KEMAMAN DISTRICT)</p> <ul style="list-style-type: none"> ● Crude Palm Oil Mill ● Steel Mill ● Oil & Gas and Petrochemical Industries
<div style="text-align: center;">  <p>Department of Environment, Malaysia</p> </div>  <p style="text-align: center;">Rajah 4.5 JAS: Tindakan Undang-Undang Terhadap Kilang Kelapa Sawit Mentah, 2005 Figure 4.5 DOE: Legal Action Against Crude Palm Oil Mills, 2005</p>	<div style="text-align: center;">  <p>Department of Environment, Malaysia</p> </div> <p style="text-align: center;">CRUDE PALM OIL MILL</p> <p>Being the largest producer of palm oil in the world, Malaysia has to face with the consequences of the:</p> <ul style="list-style-type: none"> ● Huge accumulation (app. 30 million tons per year) of undesired solid biomass such as empty fruit bunch, fibers and shell. In order to reduce these waste, the solid biomass are incinerated or combusted in incinerators/boilers. ● Effluent discharge if not properly treated will pollute watercourse ● Disludging activities of effluent treatment system which sometimes not properly manage will pollute the water course

EFFLUENT TREATMENT SYSTEM IN CRUDE PALM OIL INDUSTRIES



Sludge pits



Mixing pond



Aerobic open digesters

Treatment may not be sufficient to reduce pollution discharged into water course and will contribute to ground water problems. Methane also being produced that contributes to global warming.



Facultative ponds



Palm Oil Mill Effluent (POME)



GAMBAR BERSEKUTU



ENVIRONMENTAL MANAGEMENT STRATEGIES

However, the good news is that:

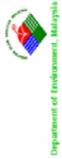
- i. The natural digestion of the effluent that takes about three months produces a large quantity of biogas containing about 65% methane. This gas can be burnt in a boiler to produce steam that can drive a steam turbine coupled to an electricity generator or it can be used in a gas engine coupled to the generator for producing electricity (Biogen Project)
- ii. The fertilizer produced from oil palm ash and effluent sludge was found to be comparable to those available in the market and can be used in the palm oil plantation, reducing the cost of fertilizer.



Emission from Palm Oil Mills which does not comply to emission standard will contribute to air pollution and the haze problems



Biomass Power Generation and Cogeneration in Malaysian Palm Oil Industry (BioGen)



A collaboration among :

- PTM (Malaysia Energy Centre , MPOB (Malaysia Palm Oil Board) & Financial Institution

Funded by :

- UNDP/GEF
- GoM
- Private sector

Implementation : October 2002 - 2004 (2 years)
PTM (Implementing Agency)

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Biomass Power Generation and Cogeneration in Malaysian Palm Oil Industry (BioGen)



Department of Environment, Malaysia

This project is nearing completion and Renewable Energy (RE) enthusiasts in Malaysia are going to have a field day when it is commissioned by the end of 2008. This mill certainly can furnish sufficient data to convince would-be investors on the great potential for RE development in Malaysia.

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BIOGEN WEB PORTAL



Department of Environment, Malaysia

www.ptm.org.my
Malaysia Energy Centre

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NOT MUCH EFFORT IS DONE TO BENEFIT FROM THIS ABUNDANT SOURCE OF FERTILIZER



Department of Environment, Malaysia



A mountain of EFB Left to rot and pollute the Environment.

STEEL MILL



Department of Environment, Malaysia

THREE MAIN POLLUTIONS:

- i. DUST
- ii. WASTE OIL
- iii. CONTAMINATED WATER

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SOURCE OF POLLUTION



Department of Environment, Malaysia

- i. Dust from furnace due to insufficient/ failure of suction system
- ii. Dust from stock pile area
- iii. Lubricant oil used on machinery

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WHY?

