

ENERGY CONSERVATION IN THE INDIAN PULP AND PAPER INDUSTRY

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Most paper and board mills are concerned to reduce their energy cost. A significant difficulty, however, has been the ability with which they can set meaningful savings target and monitor achievement of these targets.

The Malaysian paper and board mill make use of waste paper instead of logs to produce paper. The reason is mainly because good quality logs are more expensive and couldn't be easily found locally.

In Malaysia most of the mills use waste paper which more economical and electrical power is largely needed to run the machine. There are various difficulties that mills have trying to monitor energy use. Poorly positioned metering has meant a lack of accountability for energy use failure to reconcile cumulative meter readings with energy supplied has led to false assessments because of meter faults. The normal way to perform energy analysis for an existing mill is to construct energy balances, including all processes and departments in the mill. These balances form the basis for a detailed judgement regarding different ways of saving energy, by applying:-

- (a) Heat up as small a flow as possible in a temperature interval as small as possible.
- (b) Evaporate as little as possible.
- (c) Insulate hot surfaces.

Based on an energy balance for the mill, energy conservation measures was proposed of the mill considerably with a reasonably short pay-of time as long as it was saved. Due to limited turbo-generator capacity, steam corresponding approximately to what is generated with oil must by-pass the turbines.

Energy saving potential were expressed as oil saving or the equivalent oil saving, although only a few measures really saved oil. Benefits were calculated as simple pay off time. This is the ratio between investment and yearly net operational income.

For many pulp and paper mills, great saving can be made through the proper design. The Malaysian government has announced plans for a second pulp and printing papers mill. The mill will be in Kelantan and will cost an estimated of \$ 360 million. Scheduled for the completion is by 1987, the mill's planned capacity is 100,000 tpy of pulp and 130,000 tpy of printings and writings.

The project involves the Heavy Industries Corporation Of Malasia (HICOM) which will have a 70% share and French Consortium Of Logee, Creasot-Loire and Fougierolle. The mill will be financed partly by a soft loan from the french government.

The first Malaysian project is at Sipitang in South Sabah. This mill will have a Sulphate pulp capacity of 100,000 tpy and will make up to 125,000 tpy of printings and writings. The consortium is led by Klockner Stadler Hurter of Canada, it is due to start up by the end of 1986.