



## **P. T. PINDO DELI PULP & PAPER MILLS**

### **Water Conservation in Paper Mills to Reduce Paper Sludge**

#### **SUMMARY OF THE OPTION**

PT. Pindo Deli Pulp & Paper produces photocopy paper, specialty paper and tissue paper with a production capacity of 1,465,000 tons per year. The GERIAP project focused on machine number 8 (PM# 8) that produces mainly photocopy paper with a production capacity of 240,000 tons per year.

At Pindo Deli's Waste Water Plant, 1000 to 1500 tons of paper sludge are collected at the Belt Press. Until the year 2003, 40% (~300 – 400 tones per month) of the sludge produced on site was given away, at no cost, to the local mushroom and cassava growers for use as compost. At this time Pindo Deli II produced fiber in waste to a level of about 3.7 %.


In the year 2005 Pindo Deli has a target to reduce water consumption in the whole of the Pindo Deli II plant from about 10 m<sup>3</sup> to 5 m<sup>3</sup> per ton product. Reducing water consumption automatically reduces the fibers that run off into the effluent. The target of water consumption efficiency on PM8 and PM9 is reducing average water usage from 11.2 m<sup>3</sup>/ tons in the year 2004 to 7.5 m<sup>3</sup>/ tons in March 2005.

To achieve this target, some activities are done are as follows:

No.	Project Item	Action Plan
1.	Chemical Dilution	Replace fresh water with white water for chemical dilution
2	Sealing Water	Install sealing water recovery to recover water from dryer drainage (make sump pit of concrete) Reduce sealing water for pulper agitator, stock pumps, chest agitators, refiners, etc. Install rotameter for sealing system Study possibility for use white water for nash pump deculator sealing system
3.	Cooling Water	Use cooling tower water for Turbo blower cooling system, dry end oil, heating/cooling roll kuster thermal oil and chilling water for pan.
4.	Shower for Press	Study possibility for using white water for Uhle Box shower & felt Roll Doctor Shower.
5.	Make Up Water	Reduce make up water for white water system (make SOP and implement) Improve efficiency of water circulation system (make SOP and implement)
6.	Others	Reduce fresh water usage when machine cleaning and boil out (make SOP and implement) Fix leaking in water piping line, tank, toilets, etc.

These activities will save water consumption in PM 8 and PM 9 by about 888,000 m<sup>3</sup> per year. The cost of producing water is Rp. 900/ m<sup>3</sup> (US \$ 0.1/ m<sup>3</sup>), therefore this project will give an annual cost saving of about US\$ 88,800 (Rp. 799,200,000\*) as the cost of producing water is Rp. 900/ m<sup>3</sup> (US \$ 0.1/ m<sup>3</sup>\*).

Environmental benefits are reducing electricity consumption for (1) producing process water, (2) transport reduced process water, (3) transport waste water to the waste water treatment plant and also the potential to reduce greenhouse gas emissions.



In this project, waste water is screened before reuse, and then the fibre which is retained on the screen, can be put back to the process. Therefore, reducing water consumption will also automatically reduce fiber run-off into the effluent. But the amount of fiber reduced cannot be predicted at this time.

## **KEYWORDS**

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Indonesia, Pulp & Paper, Paper Sludge, Water, Cooling Water

## **FOR MORE INFORMATION**

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