

# Indo-Dutch Project on Cleaner Production Technologies in Large Integrated Pulp and Paper Mills - An Over View

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As a part of on going Indo-Dutch Project in various technologies of both social and economic significance, the Ministry of Foreign Affairs, Netherlands took up execution of the Mission with the task to prepare the Cleaner Production programme in large integrated pulp and paper section in India in general and selected THE MYSORE PAPER MILLS LIMITED, BHADRAVATI in particular as the pilot unit. This collaboration was started in 1987. In the first phase in 1987 - 89, a Dutch Mission team of TNO-DHV Consultants visited India and defined the industrial and environmental, energy, water and waste management in MPM.

In the second phase in 1990-92, MPM was provided with assistance with DHV and Canadian expert in order to priorities the actions which also defined the probable solutions.

However, the progress was very slow because of the various reasons. Despite the slow progress, initiation of the 3 phase was commissioned by the Ministry of Foreign Affairs and Royal Netherlands Government by the formulation in Autumn of 1993. The formulation Mission defined the so called ISOPLUS programme. This was a 31 part action plan to be carried out in MPM and dissemination of the results on the Indian pulp paper section formed an important part. These suggestions were aimed at improving the resource efficiency and environmental performance of MPM.

Going through the vigorous Governmental procedures, Ministry of Royal Netherlands Government decided in 1995 that ISOPLUS programme should continue to upgrade the programme instituted on Applied Environmental economics was appointed. The terms of reference forced on THE MYSORE PAPER MILLS LIMITED, BHADRAVATI. and also laid emphasis on the consideration of -

- a) Sectoral interests and policy in India,
- b) Training and exchange of experiences;
- c) Technology up-date of inventions at MPM.

The Dutch Mission of November - December 1995 held discussions with MPM and also with 30 other Indian experts. Based on this programme called 'Cleaner Production Technology in pulp and paper mills' or '3 Ps' was evolved and to carry out this Cleaner 3P programme, Royal Netherlands Government signed an agreement with the Ministry of Finance making available the financial assistance grant to an extent of Five Million Seventy Thousand Netherlands Guilders (NLG 50,70,000) equivalent to Indian rupees 10.65 crores. The objective of the project was to implement environmentally sound and cost effective solutions at MPM.

The Cleaner 3 P programme is not one issue oriented like an investment in forestry, boiler or in waste treatment, but it is a comprehensive project on Cleaner Production. TMI defined the following areas of work in Cleaner 3 P which forms part of the Indo-Dutch Project.

1. Extention of raw materials: Social forestry, extension of forestry research, setting up of experimental plots on marginal (waste) lands to assess the planting of different trees for pulp and paper.
2. Good water house holding covering in process

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water saving and effluent treatment plant to reduce colour and meeting the environmental standards;

3. Energy savings both electrical energy as well as thermal energy and better fuel use.
4. Alternative chemicals which includes the bleaching alternatives, using more environmental friendly bleaching chemicals.
5. Handling of waste materials with special reference to exploring the various use of fly ash, etc.
6. Good House keeping so as to minimise waste generation and training activities and proper maintenance schemes.
7. Monitoring equipment for both pollution and product quality.
8. Bench Marking includes conducting an inventory of environmentally cleaner production technologies available based on the experiences in the mills in Europe and south east Asia, collecting information in Indian pulp and paper sector and incorporating them in a manual on cleaner production technologies in large integrated pulp and paper mills.

MPM has taken up these activities and Dutch assistance also stipulated that there should be financial contributions from MPM itself and in the total cost of project of Rs. 15.25 crores, MPM's contribution is Rs. 460 lakhs.

As a part of Indo-Dutch project, we have taken up on top priority the following areas which are under active implementation:

1. Upgradation of the present ETP;
2. Having better fly ash handling system;
3. Various energy conservation measures;
4. Use of hydrogen peroxide in the alkali extraction stage of bleaching of both chemical bamboo-wood pulps and chemical bagasse pulps;
5. Inventory of environmentally cleaner production technologies, Bench Marking of process and environmental parameters and preparation of MANUAL containing all these details.

The project was commenced on March 1, 1997 and it will last for four years i.e., up to March 1, 2001.

The dissemination of information collected is an important part of the project. In this seminar we would like to cover the results of the following:

1. Details of the upgradation of ETP;
2. Energy conservation measures taken up or going to be taken up in the next immediate future.

We also like to inform the august gathering that we are at a very advanced stage of preparation of the MANUAL on Cleaner Production Technology and Bench Marking is in a advanced stage and we hope that this will be completed soon and the MANUAL as well as results of the Bench Marking studies will be sent to the various Organisations who have responded to our Questionnaires and also copies of the same will be provided to all the industry associations namely, IPPTA, IPMA for distribution among their members.