A Focus on Cost Reduction Measures in Indian Pulp & Paper Industry

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Probably Indian Pulp and Paper Industry is only Industry where the excess capacity is credited by the end of sixth plan targeted fixed for seventh plan. Paper manufacturing target capacity is 23.0 lacs Tons by 1990, whereas country is already having 25.0 lacs Tons Capacity mainly due to mushroom growth of small and medium size paper Industries in India in a short span of time.

Analysis shows that in last decade, there is no appreciable capacity addition by the large sector, on the other hand some of the large paper mills become sick and closed down their shutters. The small and medium size paper mills are responsible for the comfortable capacity situation and contribute about half of the total capacity. The paper production capacity had grown at encouraging rate but demand has not increased at stipulated rate per year, may be due to plastic and other substitute. If the demand had grown at the required rate the paper industry would not have faced any problem in marketing the present capacity, though there is a tremendous resistance from consumer's side due to higher price rate of production which has been brought about by steep rise of input cost and unsatisfactory capacity utilization where it has declined from 75 percent in 1981 to 60 percent in 1985-86.

Presently the cost reduction measure and maximum capacity utilization is only survival of the paper Industry not only in India but in world.

Now question comes, what are the ways and means for effective cost reduction in pulp and paper industry for marketable product strictly depending upon its end use, and it is obvious that cost of production is bound to reduce at highest capacity utilization level within the acceptable parameters at different points.

1. Generally two types of cost are involved in project as well as in running industry like direct cost which must be controlled from the very beginning of project stage and to avoid the project over run which ultimately reflect on the direct cost of product in later date and for that efficient project monitering system to be implemented at a single point.
2. Firstly it will be wise enough for each pulp and paper Industry to observe two types of costs like budgeted and actual and that is to be monitered on day to day basis at shop floor for any deviation in implemented parameters and thereby analysing, the cause of deviation and immediate rectification.
3. In recent past few years, due to steep rise of input of Raw Materials cost, the production cost has been increasing steadily, but selling price remained unchanged caused the tremendous financial weakness in the industry where the day to day cost auditing at different points can certainly give financial relief to the industry.

The variable cost as involved in pulpmill could be summerized as follows—Firstly by making an allowance of the semichemical and chemimechanical pulping by which available hardwoods have supplemented and substituted for soft woods. The inherent high yields also have resulted in reduction in the wood cost. These pulps have also contributed materially to the advancement of short fibered pulp technology and certain unique advantages in pulp properties have been realised in the course of the Industry. Thus with the development in refining technology the semichemical and chemimechanical pulping goes a long way to cover up the costing of usual costly cooking agent (NaOH).

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with relatively less costlier Na_2SO_3 buffered by Na_2CO_3 and some times ammonium sulphite.

Also as a means of energy conservation of the heat carried by the flash steam from blow tank can be recovered by suitable designing of direct/indirect heat exchanger depending upon the end use of recovered heat. So far vigrous efforts have not been made for the chemical recovery system on non-conventional Raw Materials by the small and medium size paper mills due to certain inherent constraints involved in it which can also help in the cost reduction in cooking chemicals and reduction of effluent load in disposals there by overall cost of reduction in the final product.

For efficient conservation of energy in all electrical items pertaining to stock preparation and beater section, higher capacity motors must be avoided and motors must not run idle and similarly the stock chest agitators must be provided with timer as per the operation riquirement. Presently belt technology has also improved from 'V' belt to flat belt where substantial power saving is envisaged from the belt driving section. Improved power factor always benefical to plant in saving power energy as a whole.

In paper machine steam and power being the two vital variables which make allowance for the cost reduction. At least 50% of the total steam consumption in paper mill is in paper machine section observed by the mill based on non-conventional raw materials. Though condensate recovery systems are installed most of the times provisions for collecting flash steam are neglected. By studying the operational conditions, layout etc, suitable scheme can be designed to recover and to utilize the flash steam in paper machine drying cylinders.

The disc refiner as distinct from other refiners has had a dramatic impact in paper industry during recent years. For a given refining area higher horse power can be accommodated without compromising stock quality and thus enabling an efficient energy utilization. Also better refining control invariably results in greater proven stability of quality in the final sheet and also appreciable saving in power cost can be achieved while maintaining equivalent sheet properties. Normally increase in productivity are found to be the most significant benefit economically, particularly if paper machine speed up is achievable as a result of the greater stability achieved.

The paper industry now must give immediate attention for rehabiliation of existing capacity and make up suitable modernisation and expansion scheme and go in for an innovative style of management and marketing rather than asking for fiscal concession and other reliefs from Government for this application of control system in pulp and paper industry for improving productivity and efficiency is direly needed.

During the last few years the cost of production has been increasing steadily with the unprecedented escalation in the cost of input, however the selling price has remained more or less stagnant and due to the market stagnency, the financial condition of paper industry is in real bad shape. The only solution to this problem is that the paper industry must be modernised to increase the production by minimising losses due to machinery break down, preventative maintenance in the engineering section plays a vital roll in this aspect. Therefore a combination of modernisation and expansion have to be viewed in totality.

It is imperative that better co-ordination of the operating procedures and equipments are made possible only by adequate process control system which in turn minimise the overall energy usage while keeping the production at planned level.

Now to bring home, the relevance of under control system let us consider a mill producing 50 TPD, by retaining 1% higher moisture in the final product, the mill gets a profit of something like Rs. 15/16 lacs of rupees per annum, then why should we not think of going in for a microprocessors based system for moisture control which will have very less pay back period.

Paper making still far from being used to adjust an ever increasing number of critical paper making variables. There are a few simple feed back loops that appear again and again in a paper mill system like consistency control, flow control, temperature control, moisture control, basis weight control, refining control, wet end control etc. All these control systems provide tighter limits on important variables respond rapidly to equipment on process variation, change control strategies as directed by process conditions, generate operating alarms as messenger and also provide feedback to the management.