

# Prospects of Manufacture of Paper Machines-Large Size

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To be able to justify the subject choosen by us today, we shall have to take a peep in the history of paper production, consumption in the country in the recent past.

## Paper Production—Past

Per Capita consumption of paper in India in 1950-51 was 0.6 kg. which rose to 1.2 kg. in 1967-68 and is approximately 1.4 kg. today. Not only in consumption, but also in paper production we have made substantial strides from 155,000 M. T. in 1954 to 608,000 M. T. in 1967 and 780,000 in 1971. This means there has been substantial growth in paper demand in past two decades. Although the growth was not uniform throughout this period, it was 13.5% per annum between 1956 and 1961 and gradually declining to 6.5% per annum in 1967, but the demand and indigenous production had again registered a rise to 9.5% in 1968 and 1969.

Not comparing our paper demand with countries having the per capita consumption of 200 times our present consumption, the average world paper consumption is 20 times our consumption. Therefore we have reasonable grounds to think that the trend of growth in paper demand is bound to be there and can be

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assumed to be 5 to 7% annually. For making the future Demand Forecast, a 5 % growth in National income and paper consumption has been considered.

## Paper Production—Future

While making forecast for future demand we shall have to take population forecast into consideration.

The population projections are :—

Table I

Year	population in Million
1965-66	494.74
1970-71	559.62
1975-76	630.20
1980-81	695.00
1985-86	800.00

Based on the above forecast, the demand of paper in three major catagories should be.

Table II

Variety	Year				'000 M.T
	1965-66	1975-76	1980-81	1985-86	
Writing & Printing	349.0	611.5	1006.5	1600.0	
Industrial Paper	213.0	399.8	693.9	1400.0	
News-print	115.0	280.0	400.0	550.0	
Total	677.0	1291.3	2100.4	3550.0	

Assuming that through proper planning of our raw material resources, the indigenous production can be achieved to meet the demand, the installed capacity of the industry, with 90% operating efficiency, the

capacity for future should be :—

Table III

Variety	Year		'000MTs.
	1975-76	1980-81	1985-86
WP	680.0	1120.0	1780.0
IP	444.0	772.0	1555.0
NP	312.0	444.0	612.0
Total...	1436.0	2336.0	3947.0

The forecast has been worked out upto 1985-86 to act as a long range guide for future planning, however, in this paper our further observations shall be restricted upto the year 1980-81.

To achieve 2,336,000 M. T. installed capacity by the years 1880-81 from 800,000 M. T. present. is a herculean task. The difference being 1,536,000 M. T. per annum or 4650 M. T./Day capacity. Before deciding on the type of equipment that could be employed for this higher production, we way take a brief look at the potentialities.

## Site Selection

Ours is a vast country. Development of all regions has to be simultaneous, but a pulp and paper intigrated mill can best be situated in the proximity of raw material and perennial water resources. Therefore, selection of site should be made in such a way that if a 200 M. T./D, mill is set up today, it becomes a nucleus for future growth to 400 to 500 MT/D, in time to come. The advantages of this approach are :—

- 1) Simultaneous development of large cross section of the country.
- 2) While the industry is being set up, the yield of raw material per hectare to be augmented by methodical plantation programme in the intervening period.
- 3) In view of limited availability of trained personnel, number of new centres to be developed to meet the ever growing demand.

#### Mill Size

Now the question is on what size of mills can we achieve the projected production? 100 MT/D, 200 MT/D, or 300 MT/D. From the study of economics of production cost in different size mills it can be seen that cost per ton is drastically reduced from Rs. 2022/- to Rs. 1766/- and Rs. 1686/- on 100 MT/D, 200 MT/D and 250 MT/D, plants respectively. There is a wide gap in production cost between 100 MT/D and 200 MT/D and marginal in 200 MT/D and 250 MT/D plant.

In the context of rising cost every day, the economics of the magnitude stated above have to be considered. But keeping in view our observations on site selection, etc. we recommended that not only the new pulp and paper plants be set up of 200 MT/D capacity, but also the paper machines to come up should be of 200 MT/D capacity each. This capacity has been selected by us keeping in view to strike a balance between economic viability and the employment potential it offers to our ever increasing populace.

We shall restrict our approach to the projection of demand to the paper machines-large size only, leaving the other aspects of machi-

nery production (including small size paper machines for special variety-low demand papers) for pulp and their related subjects of raw material, chemicals and recovery to other learned speakers (who have already very ably dealt with the subject).

#### Paper Machines-Large Size

To achieve an increase in the installed capacity of 4650 MT per day, if done on 50 MT/D machines, we need 93 machines, 100 MT/D, 47 machines 200 MT/D is 24 machines in next years.

Paper machine with production capacity of 200 MT/D, is a sophisticated equipment, not yet manufactured in the country, but for reasons given earlier, we should go in for new machines in this capacity range.

The cost of these paper machines alone would be of the order of Rs. 1000/- to Rs. 1100/-million and to be produced in next six years. To the best of our knowledge none of the indigenous pulp and paper machinery manufacturers are geared today to manufacture machines beyond 150 MT/D, or even 250 MT/D, but given a chance, some of them may be able to produce paper machine components of 200 MT/D or even 250 MT/D machines. But the vital question still remains-can they meet the total demand indicated above? From the past experience the answer would be whereas the P & P machinery manufacturers are heard complaining of lack of orders for equipment, the picture from the industry is:—

- i) They have been quoting long and protracted deliveries and

making, more often than not, delayed deliveries.

- ii) Costwise they compete most unfavourably with their own foreign principals.

- iii) Qualitywise lot left to be desired.

#### Suggestions for Future

In our view, correct approach to the whole issue will be :—

1. Governments' realisation of the problems facing this basic industry in near future and taking effective steps to set it going without losing much time.
2. A thorough study of the capabilities of the P & P machinery manufacturers and to fill the balance gap by allowing liberalised imports. Particularly paper machine with high production capacity being sophisticated equipment, it would be in the fitness of things to allow imports of its major components.
3. A consortium of P & P machinery manufacturers, heavy engineering industry and heavy electrical industry if formed, could go a long way in sorting out the problem of manufacture to suit the projected delivery schedules.
4. **Engineering Research & Development**—At present there is only one imported paper machine in the country of the production capacity envisaged for future. None of indigenous origin, therefore the experience in the country for manufacture shall have to be built up by initially placing reliance on the experience of principals of indigenous manufacturers, but it is of prime importance that a systematic approach is made on Engineering Research

and Development of equipment for the industry keeping in view the local problems. This is possible if the above said Consortium takes a lead to which liberal technical and financial guidance/assistance

is given by the industry and the Government.

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1. Pulp & Paper Prospects for 1975.

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