

FORBES GOKAK LTD
(TEXTILE DIVISION)
GOKAK FALLS
KARNATAKA

(i) Unit profile:

Gokak mills is a leading spinning mill in India and one of the largest exporters of yarns, was established in the year 1885, is situated at Gokak falls in Belgaum district of Karnataka state. It is a sub unit of Forbes Gokak limited and comes under textile division and contributes for over 80% of turn over of the company and around 63% of the employment.

Although Gokak is a unit of Forbes Gokak limited for all practical purpose, it is an independent unit. We refer to corporate office for guidance in policy matters, Gokak is a manufacturer of textile yarns, canvas, belting ducts and terry towels, which has no relation to the activities of other division in the company.

A Gokak mill is an ISO 9002 certified company since July 1994. One of our export oriented unit has been awarded with environmental management system certification (ISO 14001) in September 2000. It has always stood as a leader in developing organization, culture and quality system. It has well defined machine, vision, goals guiding values, business policy etc. Hence Gokak could always stand as a leading exporter from India.

Gokak has specialized itself in coarse and medium cotton and PC blended yarn, double and multifold yarns and canvas fabrics. In the dyed yarns Gokak is in picture for last 10 years and now has earned a name as quality dyers.

(ii) Energy Consumption.

Mills total power consumption is around 617 lakhs kwh per year including all operations of our unit like manufacturing of grey yarn, multifold yarn and dyed yarn. Though the mills have taken several measures to conserve energy, the power consumption figures have gone up due to modernization process and increased connected load. But specific energy consumption in terms of kwh/kg of yarn produced has come down consistently since last 3 years as shown below. Also increasing trend in energy savings as % age of annual sales turn over.

Description	Unit	2001-02	2002-03	2003-04
Electrical energy	Units/kg	2.55	2.51	2.34
Average count	Number	17.18	17.61	17.63
Annual sales turnover	Rs.Lakhs	23608	25418	27240
Energy savings	Rs. Lakhs	33.04	55.17	66.6
Savings as % age of annual turnover	%	0.14	0.22	0.24

(iii) Energy conservation policy and set up

Energy conservation policy:

“ We commit to save energy by means of systematic and scientific approach on identifying real opportunities, which are economically viable.

Ultimate objective is to reduce cost/unit of production and also to save fuel,water and compressed air.”

(Copy of the energy conservation policy which is already displayed in all the departments is enclosed for your reference)

Management and staff are highly energy conscious, efforts are being made on a continuous basis for energy conservation. Energy audits also been carried out by external consultants and recommendations have been implemented.

The unit is having a set of engineers headed by General Manager (Engineering) supported by energy conservation engineer with necessary equipments for testing and measuring. Motor diagnostic laboratory is installed for testing the efficiency of the motors. Defective and less efficient old motors will be discarded after testing.

This team is conducting energy conservation meeting every 15 days to generate the ideas from individuals and to execute the same. The points discussed in the meeting will be evaluated by G.M (Engg.) and minutes of meeting will be sent to Director Operations Textiles(DOT) for any remarks. For implementing the energy saving measures a separate sanction note is prepared along with worked out cost and payback period will be sent to DOT for approval. After getting approved from director the team will chalk out the programme for implementation.

Energy, compressed air audit is done by energy conservation engineer regularly and any abnormalities found in the machines were informed to concern departmental heads to set right the machines.

Installed Energy meters for individual departments/sections. All the mills production heads are collecting and tabulating the daily power consumed.

(iv) Energy conservation achievements.

During last three years the mills have implemented 40 major energy conservation measures and achieved the savings of 37.52 lakhs kwh and Rs. 154.82 lakhs by energy savings with the investment of Rs.100.7 lakhs..

Following are the innovative approach of our mills in reducing the power and the cost during 2003-2004.

- 1) Replacement of inefficient water pumps in humidification
- 2) Replacement of defective water pumps in ETP
- 3) Replaced old raw water pumps with new energy efficient pumps
- 4) Old motors replaced with energy efficient motors
- 5) Installed Automatic Power Factor Controllers at load points
- 6) Air compressors replaced with energy efficient compressors

(v) Energy conservation plan and targets.

Following are the major projects considered in future for 2004-2005

Sl	Energy conservation measures planned	Savings in Lakhs kwh/Yr.	Savings in Rs. Lakhs	Investment in Lakhs
1	Installing digital energy meters	0.00	0.00	10.00
2	Replacement of copper chokes with electronic chokes	1.00	4.30	5.00
3	Installing automatic power factor controlling units at load point.	2.50	10.75	14.00
4	Installing water flow meters	0.00	0.00	15.00
5	Replacement of V belts with flat belts	0.62	2.67	4.98
6	Installing energy saving unit with inverter for Autoconer winding machines	6.34	27.26	63.00
	Total	10.46	44.98	111.98

(vi) Environment & safety.

Health and safety of the employees are considered as an integral part of planning and development activities. Gokak has a separate safety committee headed by General Manager Production (GMP), take needs in work areas on regular intervals to ensure compliance of safety regulations. In addition a separate 4 members team conduct safety audit every week covering one section in rotation and report to GMP. The safety committee reviews the accidents, fires and discrepancies observed on monthly basis in which all department heads take part. The internal quality auditors conduct quality audit on safety systems under the ISO 9000 scheme. The chronicle problems are attacked by forming a cross functional teams.

Gokak mills have demonstrated the management commitment and conviction by developing 650 acres of rocky terrain lands to a beautiful man made forest thereby influencing climatic conditions at Gokak falls area and it has been awarded with “G.P.GOENKA MEMORIAL” national award for improvement of environment.

The success story of Gokak mills plantation was mentioned in the proceedings of World Earth Summit held at RIO.

Major projects implemented during the year 2003-2004 are listed below:

1) Replaced/down sized inefficient raw water pumps in humidification:

- Number of pumps replaced = 21 No`s
- Power consumption of old pumps in KW = 158.91
- Power consumption with new pumps in KW = 93.08
- Savings with new pumps in KW = 65.83
- Average working hours per annum = 16 Hrs/day x 363 days = 5808
- Savings in kwh per annum = 3,82,340
- Savings in Rs. Per annum = 382340 x 4.3 = 16,44,062

2) Replaced/down sized defective water pumps in ETP plant:

- ❖ Number of pumps replaced = 7 No`s
- ❖ Power consumption of old pumps in KW = 73.27
- ❖ Power consumption with new pumps in KW = 42.03
- ❖ Savings with new pumps in KW = 31.24
- ❖ Average working hours per annum = 20 Hrs/day x 363 days = 7260
- ❖ Savings in kwh per annum = 2,26,802
- ❖ Savings in Rs. Per annum = 226802 x 4.3 = 9,75,248

3) Replaced old raw water pumps with new energy efficient pumps:

- Number of pumps replaced = 4 No`s
- Power consumption of old pumps in KW = 209.66
- Power consumption with new pumps in KW = 186.20
- Savings with new pumps in KW = 23.46
- Average working hours per annum = 16 Hrs/day x 363 days = 5808
- Savings in kwh per annum = 1,36,255
- Savings in Rs. Per annum = 136255 x 4.3 = 5,85,899

4) Old motors replaced with energy efficient motors:

- Efficiency of old motors average from 68 to 85 %
- Efficiency of new motors average from 84% to 94 %
- Savings achieved in KW from total of 32 motors = 38.72
- Savings in Rs. per annum = 38.72 x 16 x 363 x 4.3 = 9,67,008

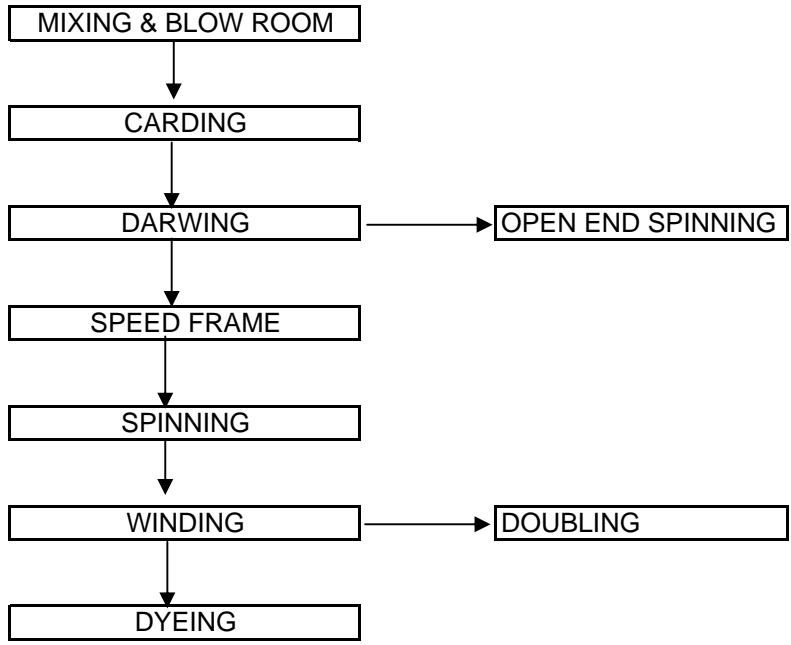
5) Installed Automatic Power Factor Controllers at load point:

- **Total installed KVAR = 1500**
- **Savings achived in kwh per kvar – 0.01**
- **Savings in kwh per annum = 1500 x 0.01 x 8600 Hrs = 1,29,000**
- **Savings in Rs. Per annum = 5,54,700**

6) Old air compressors replaced with energy efficient compressors:

Sl	Description	New	Old
1	Connected KW	280	368
2	Actual KW (Measured)	276	359
3	Output in CFM	1500	1500
4	KW/CFM	0.184	0.219
5	Savings in KW/CFM	0.0353	
6	Savings in kwh/day	450850	
7	Savings in Rs/annum	19,38,655	

A SPINNING PROCESS BLOCK DIAGRAM:



B DYEING PROCESS BLOCK DIAGRAM:

