

Tata Pigments Limited, Jamshedpur

Company Profile

For several decades the Tata Pigments Ltd., a wholly owned subsidiary of TISCO, has made its business to make this world a more colourful place to live in. The humble beginning made in 1927 keeping in mind the objectives of insuring a safe and secure environment to the Society by treating acid waste of Tata Steel and Indian Tube Company Ltd. Treatment of Acidic waste pickle liquor lead to production of value added products like Synthetic Iron Oxide Pigment, thus **creation of wealth from waste** and production of a material which was not produced till then in country, has now grown into the largest and most modern Synthetic Iron Oxide pigments producing plant of the company.

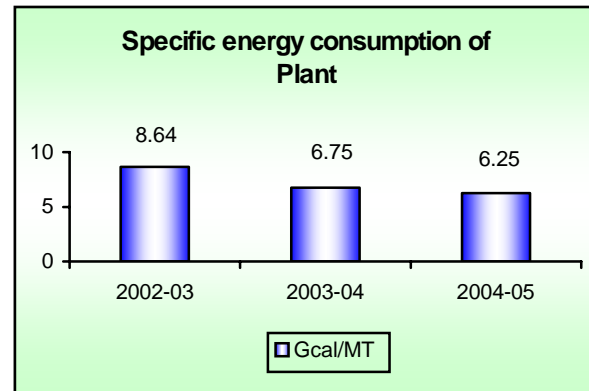
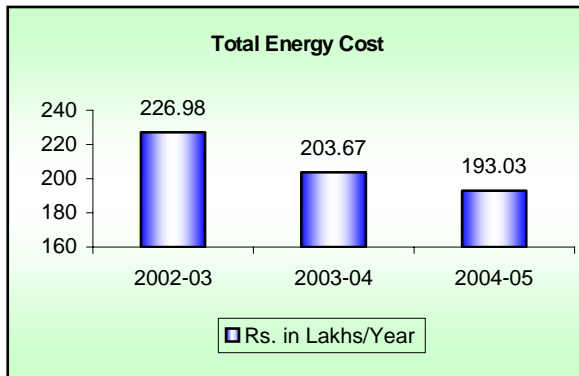
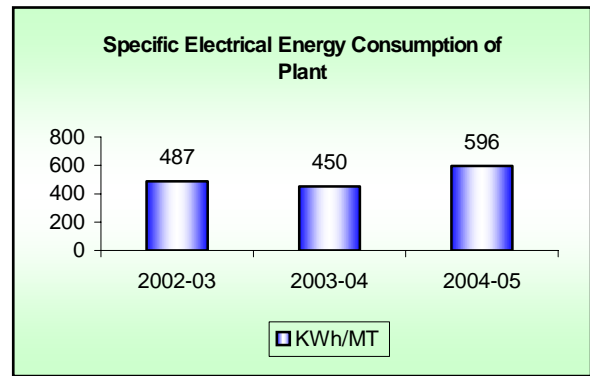
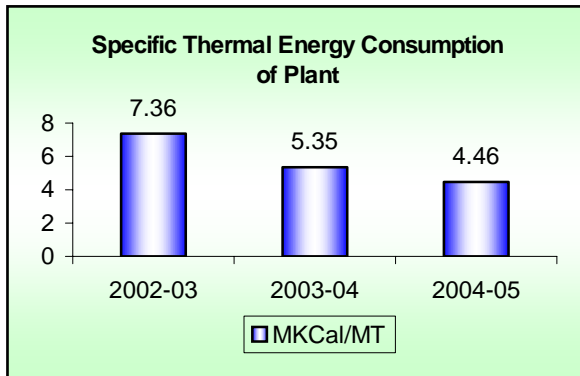
Today the Tata Pigments Limited stands foremost in India as sole manufacturer of Synthetic Iron Oxide Pigments – Red & Yellow bearing ISI mark. This unit is an ISO-9001 certified organization. TBEM developed on America's Malcom Baldrige Model of U.S.A. is practiced.

Until 1982, Synthetic Red Iron Oxides were produced at the Tata Pigments Ltd. through a dry process, but this process was discontinued gradually due to air pollution caused by the emission of Oxides of Sulphur during calcinations. Subsequently a wet process known as precipitation – cum – hydrolysis process was introduced in steps, which completely wiped out the problem of air pollution. However the acidic effluent generated during the process is neutralized by the conventional lime treatment method before disposal. In comparison with the dry process the wet process is more sophisticated and involves more number of unit operations and processing steps. Hence, this process becomes more energy intensive. To reduce the plant specific energy consumption, quality improvement, reduction of number of unit operations, company adopted Direct Red Precipitation – cum – Hydrolysis Process for manufacture of Synthetic Red Iron Oxide Pigments in the year 2003 for the first time in India. The company has now become most modern and eco-friendly plant in the country. The Tata Pigments Ltd had a turn over of Rs,22.52 cores during 2004-05.

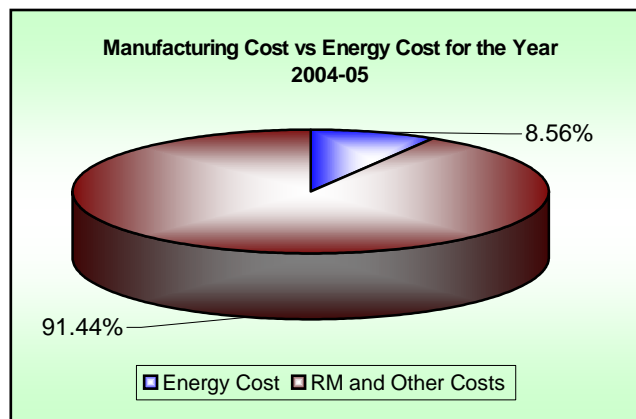
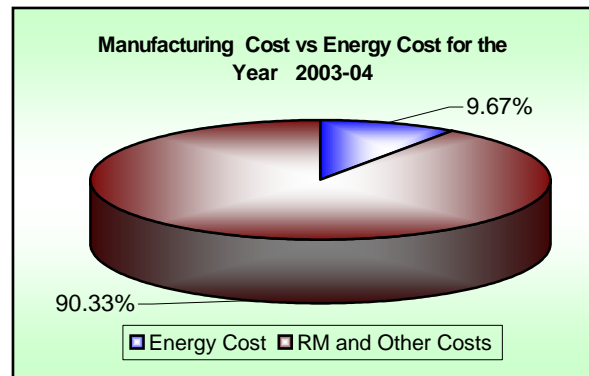
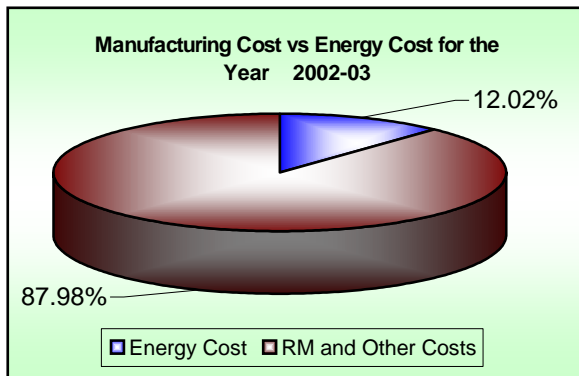
1.	Name of the Unit	The Tata Pigments Limited		
2.	The Sector	Paints & Pigments		
3.	Address & Other details	Sakchi Boulevard, Jamshedpur. Jharkhand. Pin- 831001.		
4.	Chief Executive's Name, Designation and contact number	Mr. B.P.S.Panwar, Managing Director Ph.No.- 0657-2433547/2426049/ 5515644 Fax No.- 0657 2425760 e-mail - jsr_pigtata@sanchrnet.in		
4.	Year of Establishment	1927		
5.	Details of the Contact Person	Mr. J.B.Gupta General Manager (Works) Ph.No.- 0657-2433547/2439857 Cell No.- 9835107857 Fax. No.- 0657 2434039 e-mail – gmwks@hotmail.com		
6.	Annual Turnover (Rs. in Thousands)	2002-03	2003-04	2004-05
		188158	206190	225251
7.	Energy cost as a % of manufacturing cost	12.02	9.67	8.56

Description	Unit	2002-03	2003-04	2004-05
Annual Production (Pigments & Flooring Colour)	M.T.	2923	2998	3312
Electric Energy	KWH/Ton of Prod.	487	450	596
Electricity Consumed	KWH/year	1131566	1140616	1473427
Total Cost of Electricity consumed	Rs. in Lakhs/ Year	53.32	62.04	77.64
Gaseous Fuel	MKC/Ton of Prod.	7.36	5.35	4.46
Gaseous Fuel	MKC/Year	16693	13565	11014
Total Cost of Gaseous Fuel	Rs. in Lakhs/ Year	192.60	140.27	113.70
Total Energy Cost	Rs. in Lakhs	226.98	203.67	193.03

Graphical Representation of Specific Energy Consumption



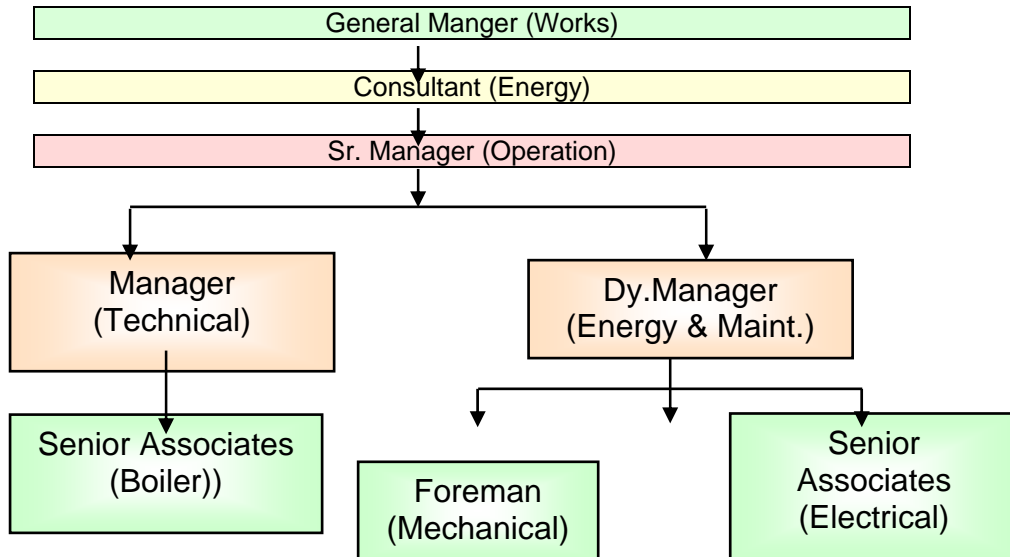
* There is increase in electric power consumption because of automation of a no. of unit operations. However, specific energy consumption per ton has gone down drastically because of a number of conservation steps taken by company.



Energy Conservation Commitment, Policy and Setup

Energy conservation is a Top management priority of the unit and energy policy is in place. The company has energy conservation committee headed by General Manager (Works) supported by the Consultant (Energy) for coordination the energy conservation in the plant. Unit is highly committed to continuous up-gradation of energy efficient process and equipment. Motivating the process owner to achieve the energy saving target, training of employees play a major role in achieving the energy saving target.

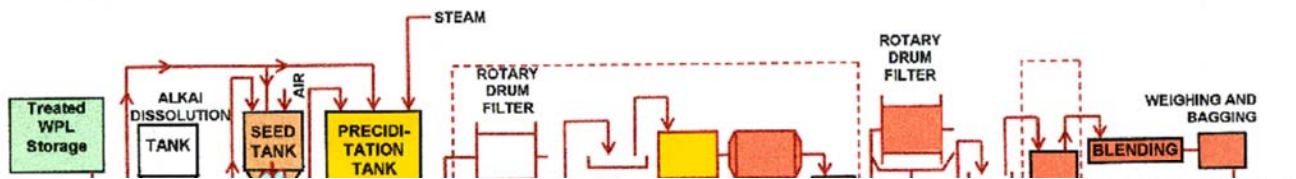
Energy conservation committee



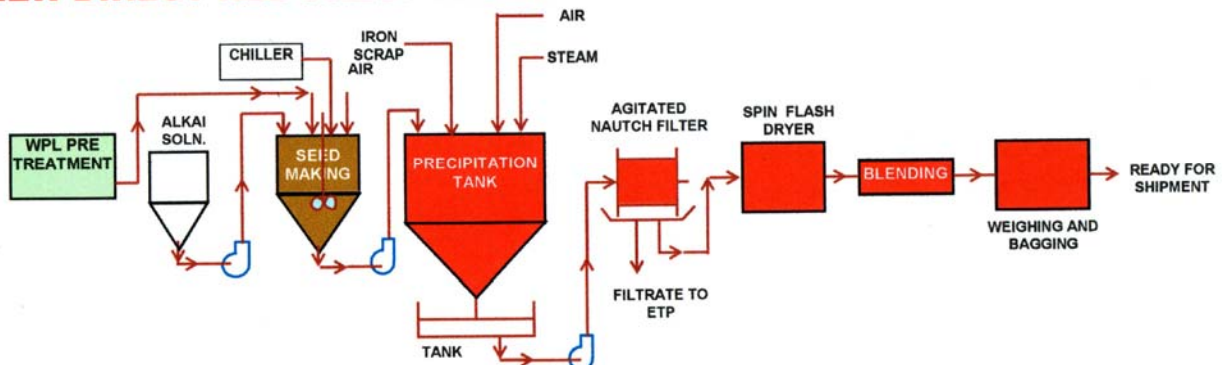
Energy Manager : In compliance with "Energy Conservation Act," company has taken steps to train one of its engineer as energy manager. Mr. P. K. P. Singh has been designated as Dy. Manager (Energy & Maint.) to look after energy related activities of the company. Mr. Singh is undergoing "Energy Manager's" exam organized by N.P.C. under the guidance of "Bureau of Energy Efficiency".

PRODUCTION PROCESS CHART BEFORE AND AFTER IMPLEMENTATION OF NEW TECHNOLOGY

OLD PRECIPITATION-CUM-HYDROLYSIS/CALCINATION PROCESS



NEW DIRECT RED PRECIPITATION - CUM - HYDROLYSIS PROCESS



The commercialization of the most advanced “Direct Red Precipitation-cum-Hydrolysis Technology” has resulted in significant reduction in energy consumption. In this process red iron oxide is produced directly in the reactor itself.

By installation of state of the art “Spin Flash Dryer” in Red Iron Oxide Pigment Plant there has been considerable reduction in fuel as well as power consumption. Since pulverization also takes place along with drying in Spin Flash Dryer the separate Pulverizer is not required to be operated for the red pigment produced through new process. This helps in considerable reduction in electric consumption.

1. Elimination of two numbers of unit operations by plant modernization

- ❖ Installation of Spin Flash Dryer for Red Iron Oxide Pigment Drying & Pulverizing.

Total Investment : Rs. 28,95,000/-

Capacity : 300 Kg/hr.

Fuel Consumption/Month: 105 MKC.

Earlier Fuel consumption in one no Red Iron Oxide drying furnace : 130 MKC/month.

Saving achieved @Rs. 1014/MKC : Rs. 3,04,200/annum.



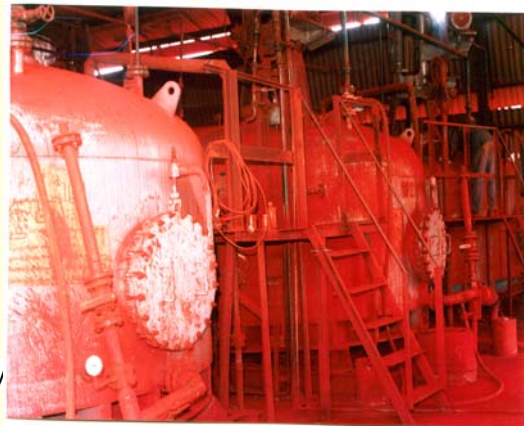
- ❖ Installation of three numbers of “Agitated Nautche Filter” for Red Iron Oxide slurry filtration and washing.

Total Investment : Rs. 64.47 Lakhs.

Electric power consumed 320 KWh/day

Earlier electric power consumed in Rotary drum filter 972 KWh/day.

Saving achieved 652 KWh/day @Rs. 4.58 /KWh : Rs. 8.60 lakhs / annum.



2. Elimination of three numbers of unit operation by

- ❖ Closure of three numbers open platform type Yellow Oxide drying furnaces, which were having ten nos. of Gas, fired burners.

Saving of fuel 337 MKC/month.

Total saving of fuel Rs. 41.00 Lakhs/ annum.

Saving of electric power 1440 KWh/day.

Total saving of electric power Rs. 18.99 Lakhs/annum.



- ❖ Closer of Grinder which was used for Grinding of Yellow Iron Oxide lumps.

Saving of electric power 67.5 KWh/day.

Total saving of electric power Rs. 0.89 Lakhs/annum.



- ❖ Closer of two numbers Rotary Calciner including two numbers gas fired burners, which were used for Calcination of hydrated Ferric (Yellow) powder to Ferric Oxide (Red).

Saving of fuel 85 MKC/month.

Total saving of fuel Rs. 10.34 Lakhs/annum.

Saving of electric power 180 KWh / day.

Total saving of electric power Rs. 2.37 Lakhs/annum.



Apart from the major projects many other Improvement projects implemented

- Modification and insulation of entire steam line network.
Amount spent Rs. 5.0 Lakhs
- Thermal insulation of Three numbers 90 KL Generation tanks.
Amount spent Rs. 2.56 Lakhs
- Replacement of two numbers thermally inefficient tray types steam operated dryers
Amount spent Rs. 4.5 Lakhs
- Re insulation of two numbers existing steam dryers to improve thermal efficiency
Amount spent Rs. 0.18 Lakhs
- Fixing of transparent sheets in place of G.C. sheet in different areas for naturally illumination of working areas.
- Installation of timers for street light operation.
- Atomization of steam injection system in generation tank.
- Rain Water Harvesting project implemented.

Up-gradation of yellow iron oxide pigment's seed making technology.

- Time reduced from 20 to 4 hrs.
- Surface area increased which greatly helped in seed multiplication factor.
- Improvement in quality

Energy Conservation Plans and Targets for the Year 2005-2006

- Installation and commissioning of 60 KVA electric energy saving system for lightning transformer in Yellow Oxide Plant – Project in commissioning stage.

Total investment Rs. 1.5 Lakhs
Likely saving 20%

- Installation and commissioning of 60 KVA electric energy saving system for lightning transformer in Red Oxide Plant – Unit yet to be supplied.

Total investment Rs. 1.5 Lakhs
Likely saving 20%

- Installation and commissioning of 9 KVA electric energy saving system for instrumentation transformer in Red Oxide Plant – Project in commissioning stage.

Total investment Rs. 0.25 Lakhs
Likely saving 20%

- Installation and commissioning of Steam Condensate recovery System with the help of M/s. Forbs Marshal Ltd. – System yet to be supplied.

Total investment Rs. 5.0 Lakhs
Likely saving 20%

- Invention of Zinc – Catalyst → Succeeded in establishing the technical visibility of use of a zinc – salt as catalyst on commercial scale during 2004-2005 itself, which greatly helps in reduction of reaction time particularly for darker shade like IS-473, resulting in considerable energy saving.