



Kankroli Tyre Plant .



Unit Profile

JK Tyre & Industry Ltd. (Formerly known as JK Industries Limited), is the flagship company under the umbrella of JK Organization.

The Principal business of JK organization include Tyre, Paper, Cement, drugs, Agri-Genetics, Dairy & Food Products, Sugar, Cosmetics, Woolen Textiles, Steel, Engineering Files, International Trading, Hybrid Seeds, Industrial Rubber Products, Material Handling System etc.

Operations: JK Tyre was set up as a division of JK Industries Ltd. with manufacturing facility at Jaykaygram (Kankroli) near Udaipur, Rajasthan. This plant was set up in 1975 in Technical Collaboration with General Tire International Corporation of U.S.A. A second Tyre Plant was set up at Banmore, near Gwalior (M.P) in 1991. In 1997, JK Ind. Limited entered into Strategic Alliance with Vikrant Tyre Ltd., Mysore, (A Govt. of Karnataka undertaking), to improve its performance. Subsequently VTL merged with JK Industries Ltd. in 2002.

Organizational Environment - Product and Services

JK Tyre manufactures entire range of tyres for all four-wheeler vehicles being manufactured in India. JK tyre have pioneered Radial tyre technology in India in 1977 and still has largest market share. JK tyre has largest share of business with Maruti and Tata Motors, the largest vehicle manufacturers in India.

JK Tyre also provides compete range of technical services for Tyre care and warranty claims.



Kankroli Tyre Plant .



Beyond Business : **SOCIAL COMMITMENT** to the society has been the philosophy of JK Organization, which has been carried forward from the Founding fathers. Various institutions set up by the group throughout India in diverse fields of social welfare stand testimony to this philosophy Fig. O.1.

Health Care	Education	Auditorium & Sports
<p>Pushpawati Singhanian Research Institute for Liver, Renal and Digestive Diseases, New Delhi</p> <p>JK Institute of Radiology & Cancer Research, Kanpur</p> <p>Lakshmi Pat Singhanian Institute of Cardiology, Kanpur</p> <p>Sunitidevi Singhanian Hospital & Medical Research Center, Bombay</p> <p>Jaykaylon Women's Hospital, Kota</p> <p>Mother & Child Health Institute, Jaipur</p> <p>Kailash Pat Singhanian Institute of Medicines, Kanpur</p>	<p>Lakshmi Pat Singhanian Academy, Calcutta</p> <p>JK Institute of Applied Physics & Technology, Allahabad</p> <p>JK Institute of Sociology & Human Relations, Lucknow, attached to the Lucknow University.</p> <p>Lakshmi Pat Singhanian Public School, Jaykaypur, Orissa.</p> <p>Sulochana Devi Singhanian Higher Secondary School, Thane.</p>	<p>Lakshmi Pat Singhanian Auditorium at PHD Chamber of Commerce and Industry, New Delhi.</p> <p>Auditorium for Children Welfare Club at Calcutta</p>
		Temples
	Charitable Institutes	<p>Sri Radhakrishna Temple, Kanpur</p> <p>Sri Dwarkadhish Temple, Kanpur</p> <p>Sri Kamleshwar Temple, Kanpur</p> <p>Lakshmi Narayan Temple, Jaykaypuram, Sirohi</p> <p>Sita Ram Temple, Sripatnagar, Udaipur</p>
	<p>JK Trust, Calcutta</p> <p>Lakshmi Pat Singhanian Educational Foundation, New Delhi</p> <p>Lakshmi Pat Singhanian Medical Foundation, New Delhi</p>	



Lala Kamalpat Memorial

Lakshmi Pat Singhanian Medical Foundation, New Delhi

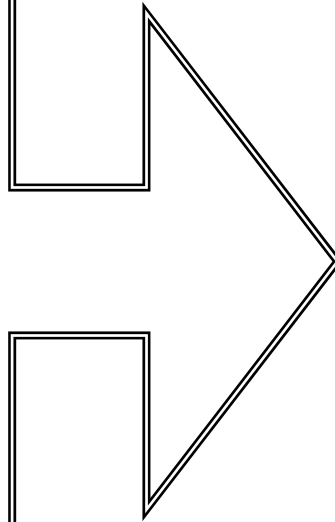


Kankroli Tyre Plant .
Temples at Vrindaban



Manufacturing Process

1. Mixing
2. Dipping
3. Calendaring
4. Tread Extrusion
5. SW Extrusion
6. Bead Preparation
7. Ply Cutting
8. Sq. Application
9. Assembling
10. Jamming
11. Painting
12. Curing
13. Finishing
14. Inspection



Kankroli Tyre Plant .



Energy Management Policy

We at J.K.Tyres are Committed to Conserve Natural Resources & Energy by

- Enhancing Equipment Efficiency
- Minimizing Waste & idle run
- Technology & Innovation
- Periodic Reviews and Skill Upgradation
- People Involvement

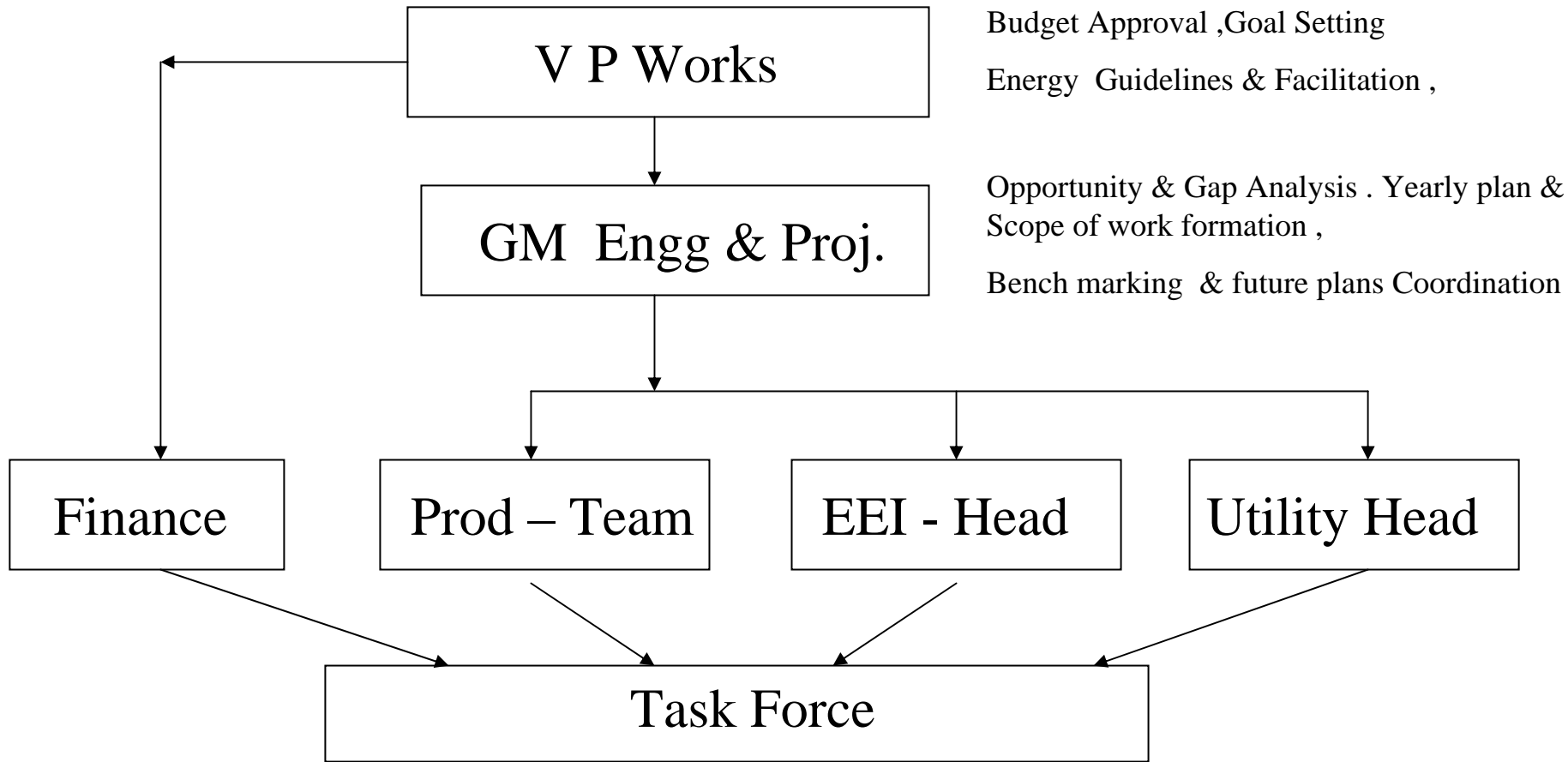
We will continuously Benchmark & Better Energy Performance in our endeavor to be the World's Best Bias Tyre Plant By 2008.



Kankroli Tyre Plant .



Organization Structure



Task force comprises of cross functional team , which conduct brain storming session to identify new opportunities . Check feasible ideas along with top management .Execute best ideas & followed by performance review with VP (Works) . Task force Energy conservation efforts are periodically encouraged by Top management through various motivation techniques



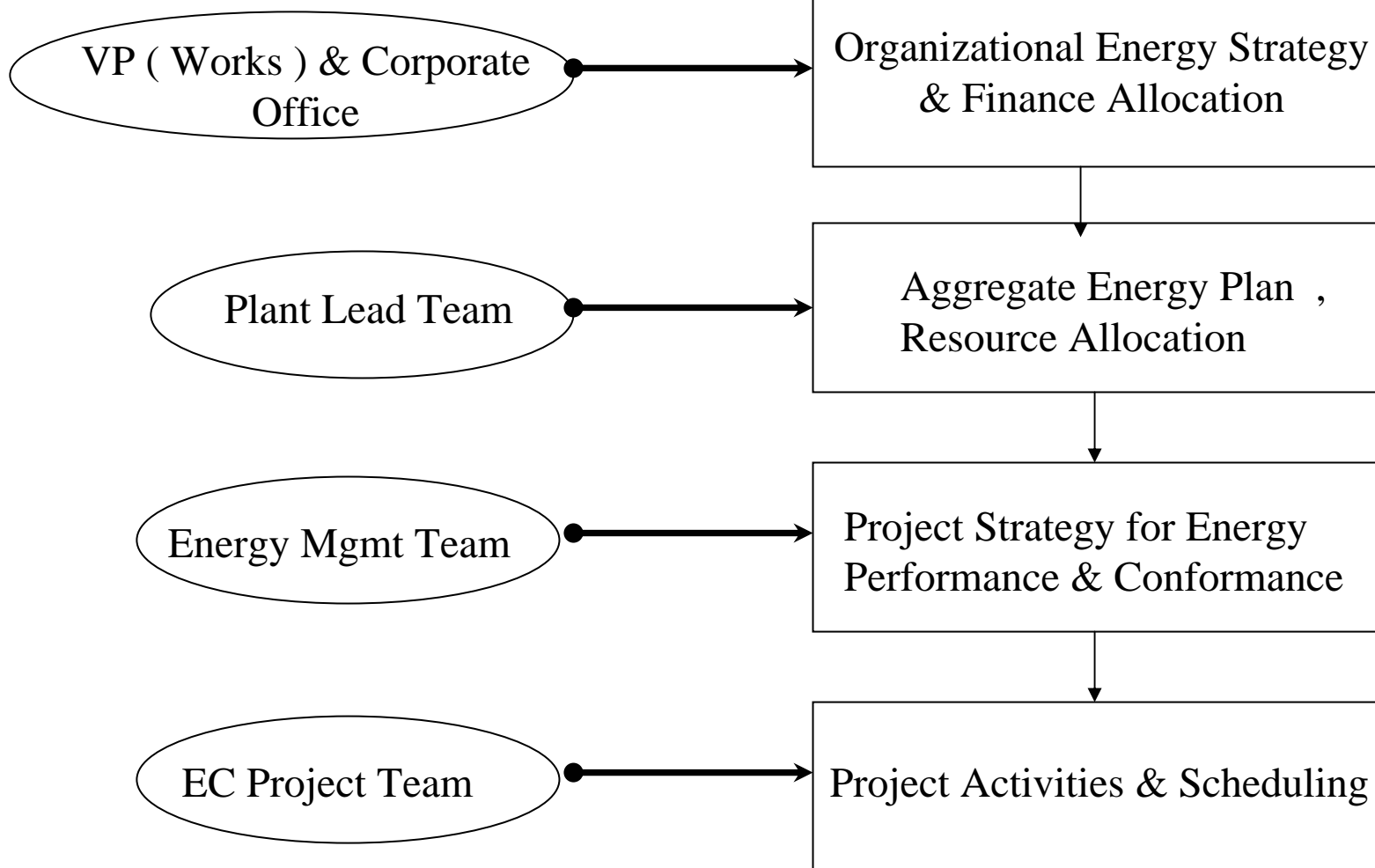
Kankroli Tyre Plant .



Energy Cell Approach

Decision Makers

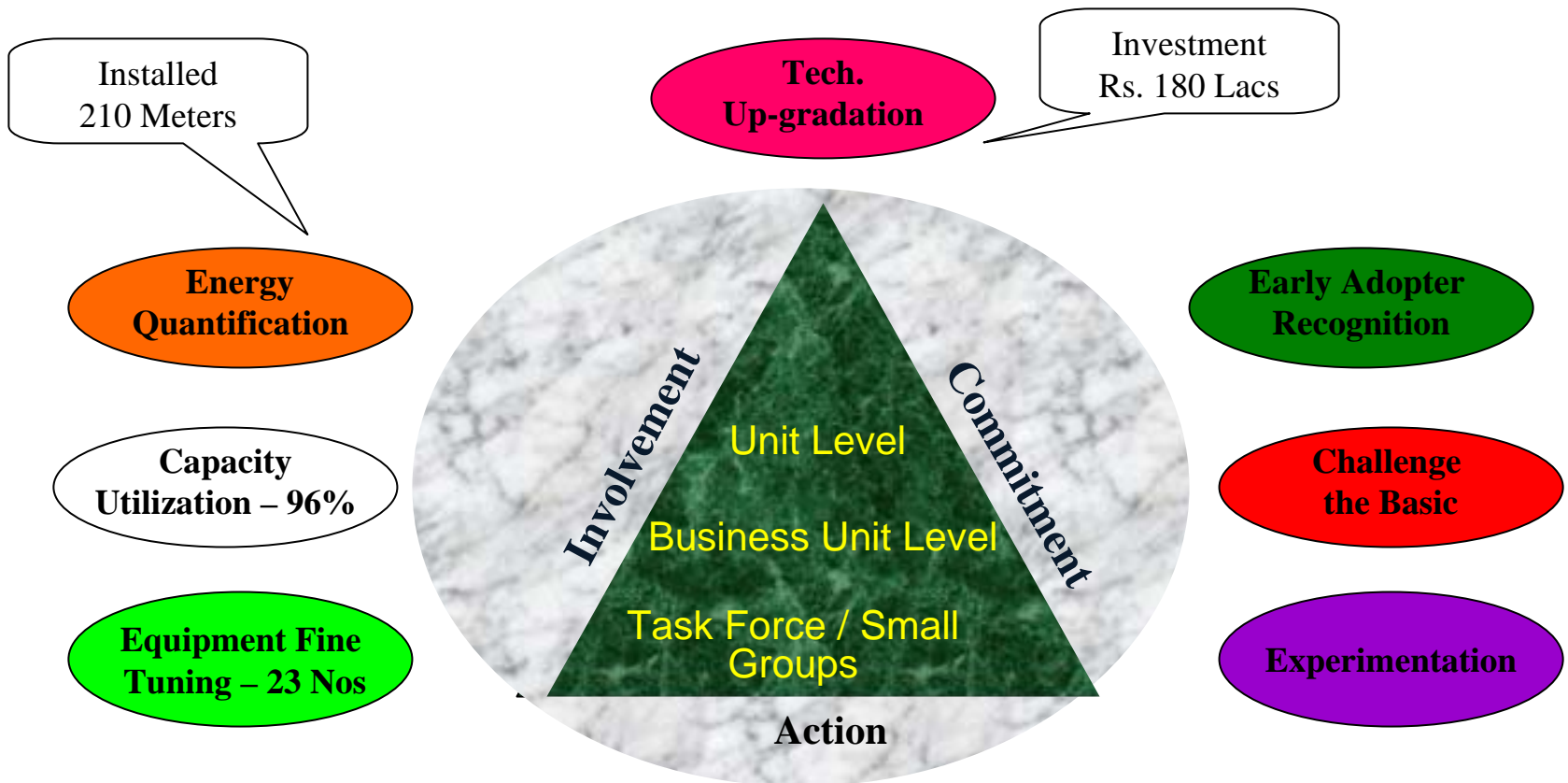
Role & Responsibility



Kankroli Tyre Plant .



Energy Conservation Commitment



Ideas Generated – 190 Nos
Implemented 105 no.



Kankroli Tyre Plant .



Specific Energy Consumption

Year	Sp. Energy Consumption	
	*kWh/ tonne	Coal MT / tonne
2004 - 2005	816	0.436
2005 - 2006	795	0.482
2006 - 2007	776	0.453

Energy Conservation Measure

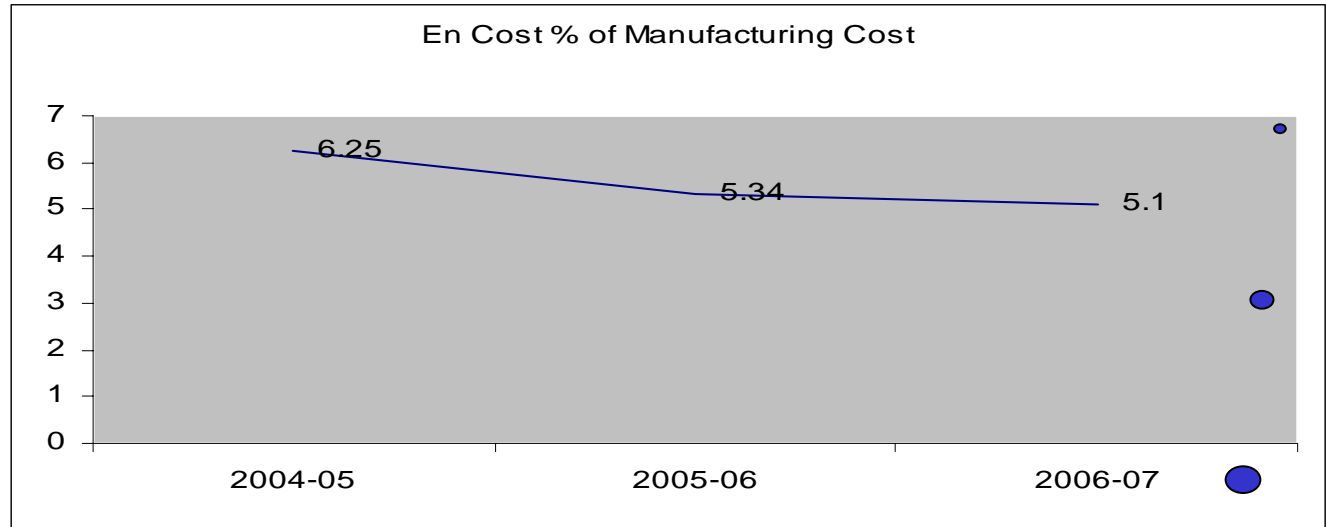
Year	No. of measures implemented (S.No. 16)	Investment made (S.No. 16) (Rs. Lakhs)	Savings achieved (S.No. 16) (Rs. Lakhs/ year)
	(i)	(ii)	(iii)
2004 - 2005	6	4.35	31.83
2005 - 2006	8	10.35	63
2006 - 2007	16	158.4	276.62



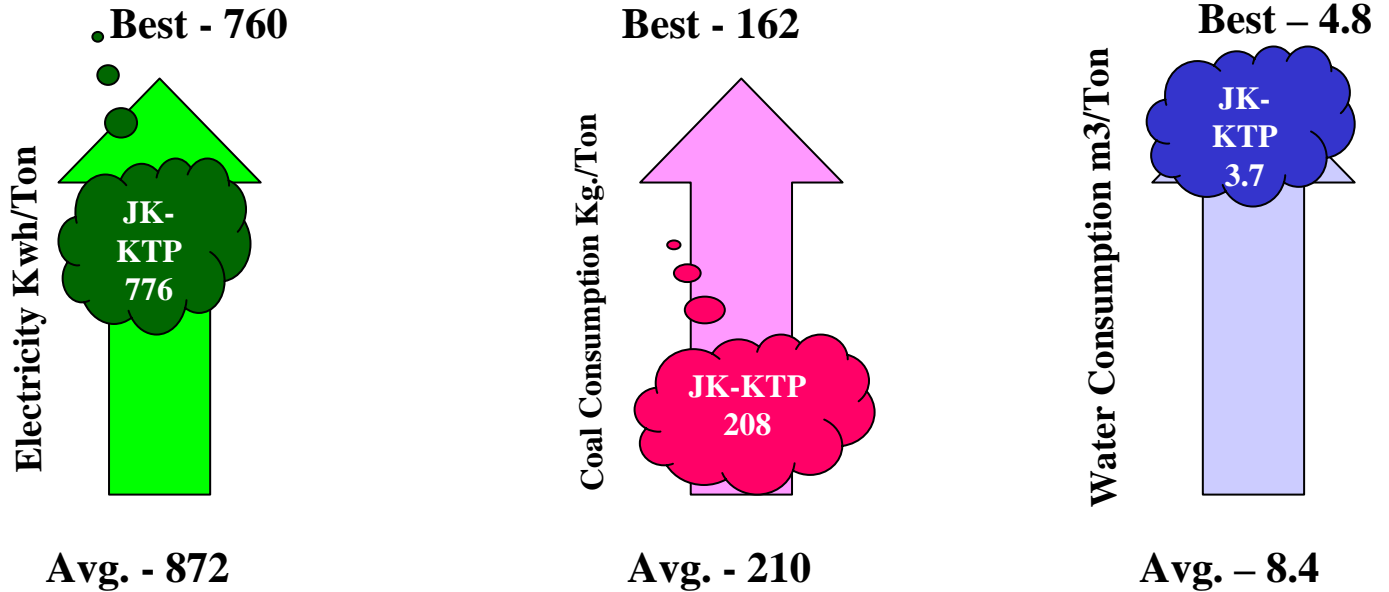
Kankroli Tyre Plant .



Our Performance



Bench Marking



Data Source CII Study Conducted by Forbes Marshal

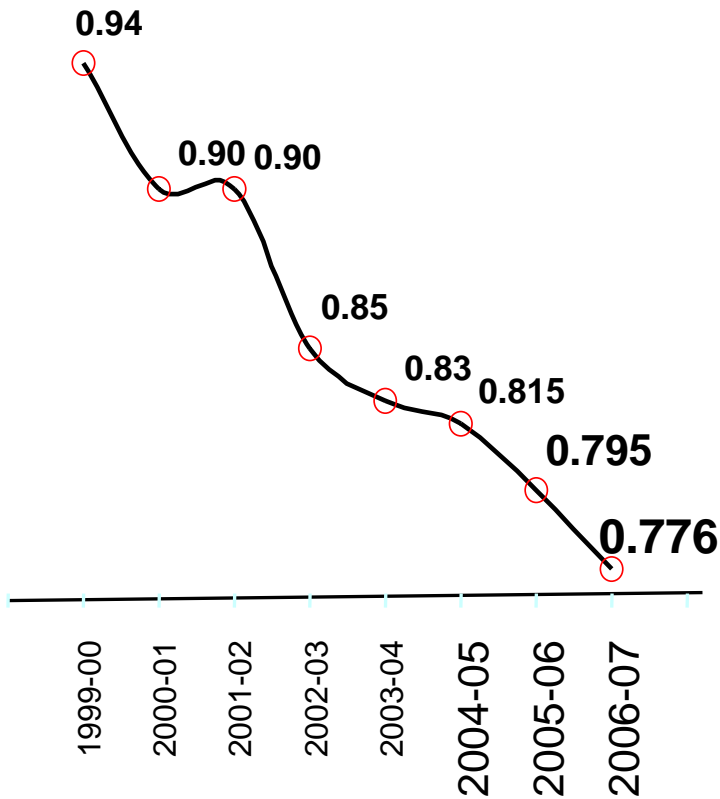


Kankroli Tyre Plant .

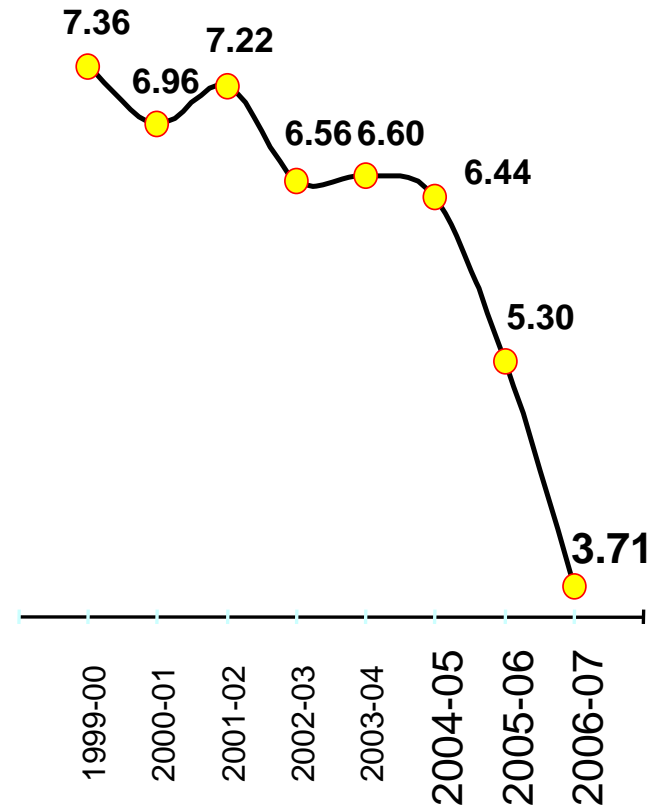


Specific Energy Consumption

**Power Consumption
Kwh./Kg.**



**Water Consumption
Ltrs./Kg.**

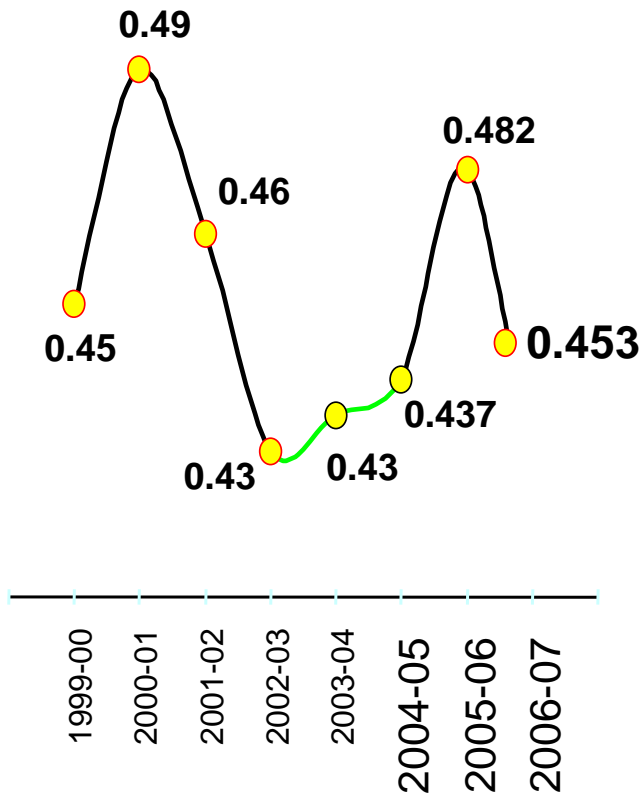


Kankroli Tyre Plant .

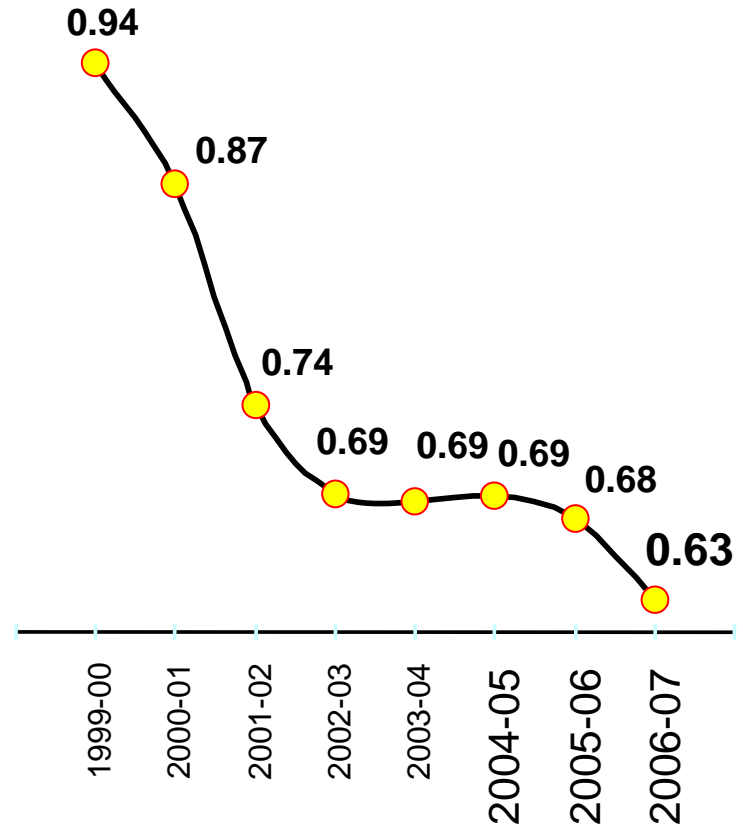


Specific Energy Consumption

**Coal Consumption
Kg./Kg.**



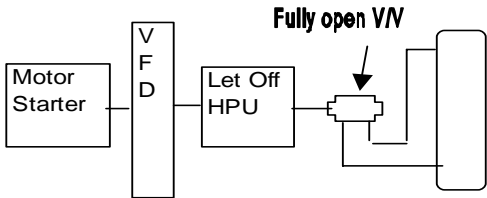
**Air Consumption
m³/Kg.**




Kankroli Tyre Plant .



Project Name :- VFD on 4 Roll Calendar Let Off Accumulator HPU

	<p>Description :</p> <p>7. AFTER(Improvement) : The VFD is provided HPU motor so as to control the speed of the motor to deliver constant pressure. Presently motor is running on 70% of rated speed</p> <p>Investment 0.5 lacs</p> <p>Saving 0.72 lacs</p>
---	---

Project Name :- Installation of New Screw Compressor for PCI air

	<p>Description :</p> <p>New Screw Compressors has been installed in place of existing old & in-efficient Reciprocation compressor for PCI air (10 kg/cm²)</p> <p>Investment 69 lacs</p> <p>Saving 60.34 lacs</p>
--	--



Kankroli Tyre Plant .



Project Name :- Elimination of Cooling Tower# 7

Description :Separate Cooling tower was installed for Plant#III which was running under-utilized . Plant# I Cooling tower & lines modified & Inline pumps installed for matching pressure requirement of Plant –III load.

Investment	1 Lacs
Saving	290000 KWH/annum

Project Name :- Lighting Voltage reduction in Plant-III

Description :Lighting voltage was varying from 238-248 V , which was not only increasing the power consumption ,but also reducing the life of luminary.

Investment	0.5 lacs
Saving	52500 KWH/ annum

Project Name :- Elimination of Cooling Tower # 2 & 5

Modified Scheme

Additional (Pump 25hp*2) = 225hp
Power saving
 (Pump 20hp*2) + (Pump 60hp*5) - (Pump 125hp) = 465hp - 225HP = 240 HP

Description :Water with temp of 65 °C was coming from Curing . CT was used for reducing this water temp from 65 6 C to 45° c.

Heat of water was utilized for heating up the boiler feed water by installing PHE .

Investment 7 lacs

Saving 65.17 lacs

Project Name :-Linking of Press Lights with Press operation

When operator load the press

When loading/ press open --- Light On (5 min)

When Cure start/ press close- Light Off(55 min)

Description : In original system , 250w mercury light remains on (24 hrs) even after press is loaded .

In new system ,lights linked with press operation I.e light remains on only for 5 min when operator is loading green tyre in the press (Remain on 2 hrs/ day)

Investment Zero

Saving 8.24 lacs

Project Name :- Installation of Wind roof extractor



Description : Earlier Power operated Roof extractor were in operation at diferent location of plant.

Now Wind Natural draft roof extractor has been installed

Investment 4.0 lacs

Saving 8.4 lacs

Project Name :- Installation of 28 W T-5 tube lights



Description : Earlier traditional , Copper/ Al choke lights were installed in the plant which was consuming avg 53W .

New T-5 light of 28 W was installed which helps in reduction of power consumption

Investment 1.73 lacs

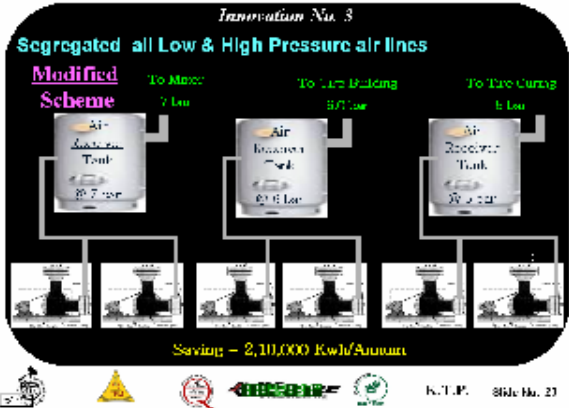
Saving 3.62 lacs



Kankroli Tyre Plant .



Project Name :- Separation of Low & Hi Pressure Air Lines



Description : Earlier all compressors were running with 7 bar pressure. Inplant PRV were in operation to reduce pressure to match each section requirement .

Now Air compressor & pipe lines modified as per plant section air pressure demand

Investment	1.0 lacs
Saving	9.05 lacs

Project Name :- Conversion of Bias Cutter Drive from Pneumatic to Servo Drive



Description : Carriage movement was through 2 mtr long cylinder .

New Servo drive incorporated in place of pneumatic cylinder

Investment 2.5 lacs

Saving 6.25 lacs

Energy Conservation Projects

ENCON Projects - Zero investment	Savings Kwh/Annum
Elimination of Cooling tower by modifying cooling lines of AC unit	75,600 Kwh
Installation of VFD on Hydraulic Accumulators in dip Unit	16,800 Kwh
Reduced speed of cooling tower pumps	25,000 Kwh
Reduced fuel consumption in transportation of finished goods by improving logistics	125 KL LDO
Optimization of lighting fittings in utility Area	25,000 Kwh
Periodic Monitoring and controlling of Air leaks	71,000 Kwh
Use of fuel additives in Oil in dip Unit	18 KL FO
Lighting voltage reduction in Extension plan	92,000 Kwh



Kankroli Tyre Plant .



Energy Conservation Projects

ENCON Project - Electricity	Investment (Rs. Lacs)	Savings Kwh/Annum
Elimination of Cooling tower by Line modification	0.50	294000
FRP Blades in place of Metallic Blades in roof Extractors	1.75	142000
VFD on calender Accumulators- hydraulic Power unit	1.00	16800
Reduction in fan speed of boiler secondary air fan	2.50	71300
Pressure optimization in Bladder curing press by VFD	2.50	126000
Low power lights in toilets	0.10	19300



Kankroli Tyre Plant .



Energy Conservation Projects

ENCON Project - Electricity	Investment (Rs. Lacs)	Savings Kwh/Annum
Conversion of pneumatic carriage drive to Electricity Drive on High table Bias cutter	3.50	145000
FRP Blades IPO Metallic Blades- phase-II	12.00	256000
Conversion of Awling machine from Pneumatic to servo drive	1.50	27000
VFD on Cooling tower No.3 pump	3.50	107000
VFD on Cooling tower no. 4 Pump	3.50	71000
VFD on Inline pump at Banbury –4	6.00	28400



Kankroli Tyre Plant .



Energy Conservation Projects

ENCON Project - Coal & FO	Investment (Rs. Lacs)	Savings -Coal (MT/Annum)
Separation of hot and cold water blow down storage	1.00	382 MT
Process water modification to reduce coal consumption	15.00	887.5 MT
Boiler efficiency improvement by Reducing losses due to soot Formation	21.00	2840 MT
Improvement in DM water quality by using condensate recovery	0.50	284 MT
DM feed water temp. Improvement by installing PHE	7.00	426 MT
Duct modification in dipping unit	13.00	57 KL FO



Kankroli Tyre Plant .



Daily Monitoring Key Parameters

Daily review of Plant Performance

by

Unit TEAM

28.05.07 (Sample)

Particulars	Unit	Today			MTD		
		Plan	Actual	Diff	Plan	Actual	Diff
Compound Scrap	Kgs	17	0	-17	477	433	-44
Compound Lumpy-BU1	%	0.010	0.000	-0.010	0.010	0.009	-0.001
Compound Lumpy-BU2	%	1.57	0	-1.565	4.291	2.103	-2.187
Compound Lumpy-Total	Kgs	0.090	0.000	-0.090	0.090	0.044	-0.046
Fabric Scrap -BU1	Kgs	0	0	0	504	504	0
Fabric Scrap -BU2	%	0.000	0.000	0.000	0.011	0.011	0
Fabric Scrap -Total	Kgs	57	0	-57	4.291	2.607	-1.684
Sq Woven Fabric	%	0.090	0.000	-0.090	0.090	0.055	-0.035
Insulated Bead	Kgs	43	46	-3	1127	1822	-695
Green Tyre	%	0.060	0.064	-0.004	0.060	0.097	-0.037
Cured Tyre	Kgs	290	382	-92	7512	10082	-2570
Total Process Scrap - Tyre	%	0.400	0.528	-0.128	0.400	0.537	-0.137
Total Process Scrap - Tyre	Kgs	333	428	-95	8639	11904	-3265
Total Process Scrap - Tyre	Value	0.460	0.591	-0.131	0.460	0.634	-0.174
Total Process Scrap - Tyre	Kgs	16	19	-3	509	721	-212
Total Process Scrap - Tyre	Value	0.28	0.343	-0.063	0.270	0.301	-0.031
Total Process Scrap - Tyre	Kgs	28	21	7	759	778	-19
Total Process Scrap - Tyre	Value	0.270	0.205	0.065	0.270	0.277	-0.007
Total Process Scrap - Tyre	Kgs	19	20	-1	541	626	-85
Total Process Scrap - Tyre	Value	0.010	0.010	0.000	0.010	0.012	-0.002
Total Process Scrap - Tyre	Kgs	98	37	61	2632	3480	-848
Total Process Scrap - Tyre	Value	0.050	0.019	0.031	0.050	0.066	-0.016
Total Process Scrap - Tyre	Kgs	527	523	4	14215	18653	-4440
Total Process Scrap - Tyre	Value	0.270	0.269	0.001	0.270	0.354	-0.084
Total Process Scrap - Tyre	Value	56772	59830	-3059	1532735	1948845	-416110
Total Process Scrap - Tyre	Value	0.334	0.347	-0.013	0.334	0.418	-0.084
Total Process Scrap - Tyre	Kgs	124	130	-6	3456	2577	879
Total Process Scrap - Tyre	Value	1.363	1.424	-0.061	1.363	1.016	0.347
Total Process Scrap - Tyre	Kgs	18	12	6	484	347	137
Total Process Scrap - Tyre	Value	1.200	0.803	0.397	1.200	0.861	0.339
Total Process Scrap - Tyre	Kgs	841	667	174	22736	25403	-2668
Total Process Scrap - Tyre	Value	0.409	0.324	0.085	0.409	0.457	-0.048
Total Process Scrap - Tyre	Value	85241	73898	11343	2304291	2538095	-233804
Total Process Scrap - Tyre	Value	0.494	0.404	0.090	0.494	0.513	-0.019

Particulars	Unit	Today			MTD		
		Plan	Actual	Diff	Plan	Actual	Diff
Building							
Tyre	MT	192.51	192.42	-0.09	191.56	193.17	1.61
Curing							
Tyre	MT	192.51	195.01	2.50	191.56	188.03	-3.53
Tube	MT	8.89	9.13	0.24	8.87	9.06	0.18
Flap	MT	1.51	1.49	-0.01	1.51	1.44	-0.07
Total	MT	202.91	205.63	2.73	201.9	198.53	-3.42
Utility							
Power	KWH/Kg	0.750	0.787	-0.04	0.750	0.813	-0.06
Coal	MT	86.366	77.30	9.07	83.382	92.03	-8.65
	Kg/Kg	0.420	0.376	0.04	0.420	0.464	-0.04
	Kg/MT	153.0	162.05	-9.05	153.0	183.60	-30.60
Steam(G)	MT	534.646	477.00	57.65	516.176	501.24	14.94
	Kg/Kg	2.600	2.32	0.28	2.600	2.52	0.08
Steam(S)	Kg/Kg	2.450	2.31	0.14	2.450	2.41	0.04
Air	M3/Kg	0.675	0.597	0.08	0.675	0.637	0.04
Water-Ex	Ltr/Kg	5.750	3.676	2.074	5.750	4.162	1.588
Water-Inc	Ltr/Kg	6.550	4.678	1.872	6.550	5.170	1.380
Naphtha	Ltr/MT	12.00	14.97	-2.97	12.00	12.73	-0.73

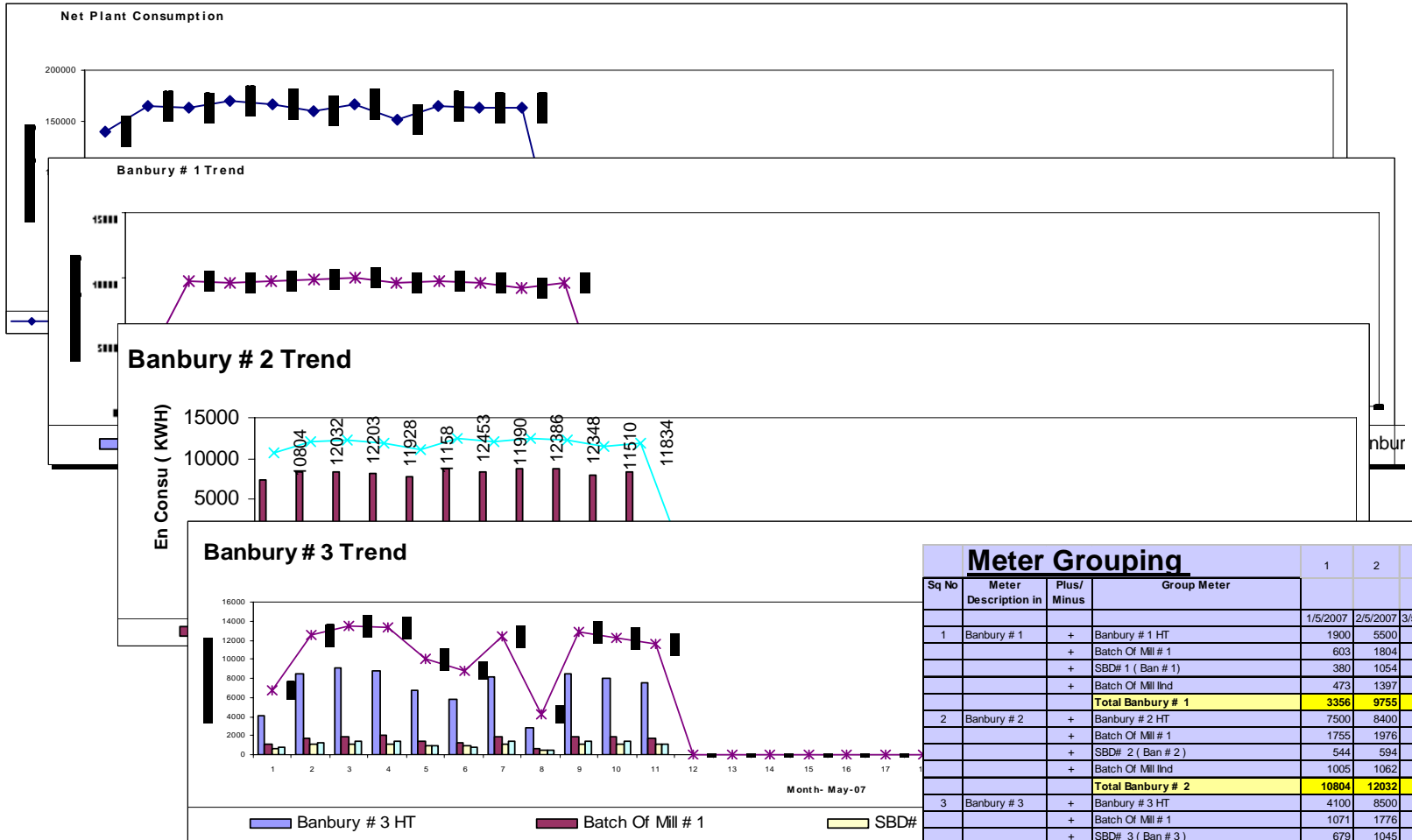
Sl. No.	Equipment	Unit	To-Day			MTD	
			Eq. Prod.	Power (Kwh.)	Consumption per Unit	Power (Kwh.)	Consumption per Unit
1	BANBURY #1	Kgs.	47710	9803	0.205	9337	0.203
2	BANBURY#2	Kgs.	45323	12336	0.272	11352	0.267
3	BANBURY#3	Kgs.	44967	10101	0.225	11128	0.267
4	BANBURY#4	Kgs.	44220	11509	0.260	11344	0.250
5	TOTAL BANBURIES	Kgs.	182220	43749	0.240	43161	0.246
6	DIP UNIT	KM	28299	2691	0.095	2911	0.075
7	3 ROLL CALENDER	Eq.Rolls	1549	3543	2.287	3822	2.915
8	4 ROLL CALENDER	KM	50292	7798	0.155	7610	0.162
9	DUAL EXTRUDER	Eq.Trk.Tread	5121	14299	2.792	13011	2.670
10	MP EXTRUDER	Eq S/W	10504	3671	0.349	3259	0.359
11	TUBE EXTRUDER	Eq.Trk. Tube	5270	3688	0.700	3769	0.747
12	TOTAL BUILDING	MT	192.42	3273	17.010	3129	16.200
13	TOTAL CURING	MT	205.63	11764	57.209	11282	56.827
14	PCI AIR	M3	64650	8979	0.139	10962	0.170
15	PLANT AIR	M3	58029	10011	0.173	8924	0.154
16	TOTAL AIR	M3	122679	18990	0.155	19886	0.162
17	COOLING TOWER	MT	205633	9106	0.044	9122	0.046
18	BOILER	MT	205633	3483	0.017	3716	0.019
19	OTHER UTILITY	MT	205633	5102	0.025	4779	0.024
20	TOTAL UTILITY	MT	205633	43510	0.212	45965	0.232
21	LIGHTING TOTAL	MT	205633	3827	0.019	3553	0.018
22	AIR WASHERS TOTAL	MT	205633	11827	0.058	11584	0.058
23	REST METERED LOAD	MT	205633	1467	0.007	2078	0.010
24	TOTAL UNMETERED	MT	205633	6666	0.032	6280	0.032
25	NET PLANT CONSUM	MT	205633	161773	0.787	161413	0.813
26	RSEB	MT	205633	164000	0.798	164554	0.829



Kankroli Tyre Plant .



Energy Monitoring Systems



Meter Grouping				1	2	3	4	5
Sq No	Meter Description in	Plus/ Minus	Group Meter	1/5/2007	2/5/2007	3/5/2007	4/5/2007	5/5/2007
1	Banbury # 1	+	Banbury # 1 HT	1900	5500	5500	5500	5800
		+	Batch Of Mill # 1	603	1804	1752	1760	1707
		+	SBD# 1 (Ban # 1)	380	1054	1022	1013	1036
		+	Batch Of Mill Ind	473	1397	1339	1370	1325
			Total Banbury # 1	3356	9755	9613	9643	9868
2	Banbury # 2	+	Banbury # 2 HT	7500	8400	8400	8200	7700
		+	Batch Of Mill # 1	1755	1976	1961	1885	1811
		+	SBD# 2 (Ban # 2)	544	594	807	792	614
		+	Batch Of Mill Ind	1005	1062	1035	1051	1033
			Total Banbury # 2	10804	12032	12203	11928	11158
3	Banbury # 3	+	Banbury # 3 HT	4100	8500	9100	8800	6800
		+	Batch Of Mill # 1	1071	1776	1949	1961	1352
		+	SBD# 3 (Ban # 3)	679	1045	1068	1070	960
		+	Batch Of Mill Ind	838	1238	1394	1429	917
			Total Banbury # 3	6688	12559	13511	13260	10029
4	Banbury # 4	+	Ban # 4 AC Mill	1412	1748	1725	1774	1692
		+	Ban # 4 DC Mill	1796	2172	2209	2286	2260
		+	Banbury # 4 HT	6134	6333	6427	6366	6319
		+	Ban # 4 Aux.SDB	935	1000	1145	972	961
			Total Banbury # 4	10277	11253	11506	11398	11232

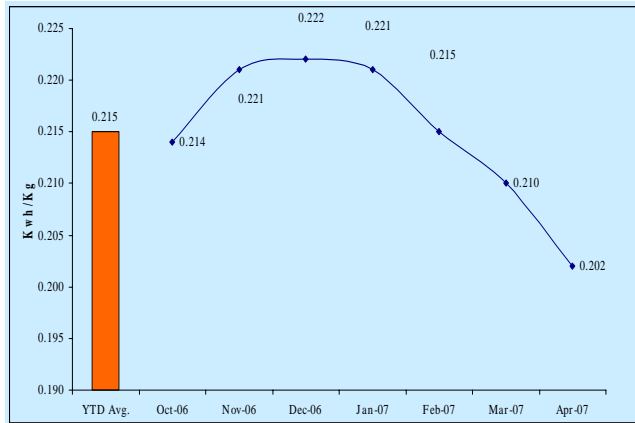


Kankroli Tyre Plant .

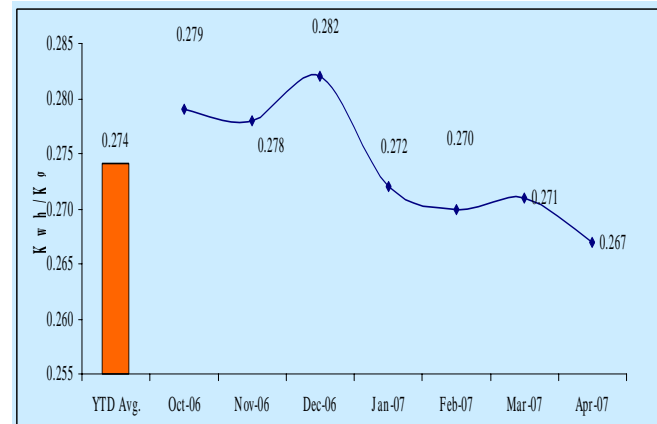


Monitoring Equipment SPC

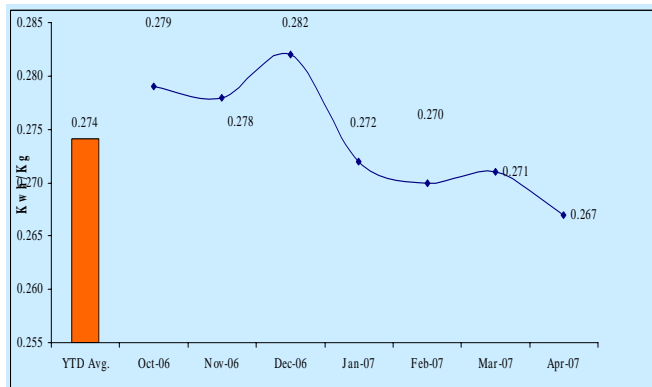
(Banbury # 1)



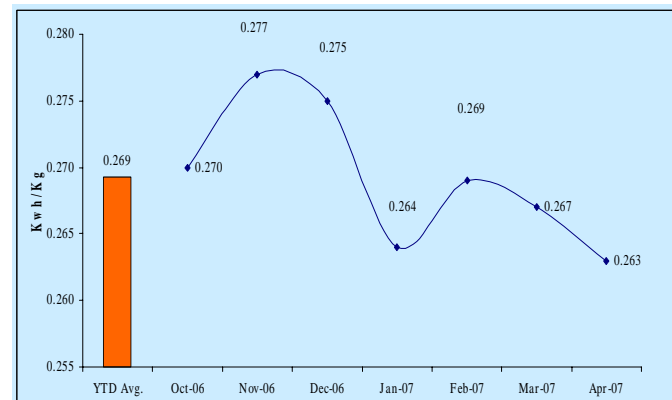
(Banbury # 2)



(Banbury # 3)



(Banbury # 4)



Kankroli Tyre Plant .

Monitoring of Vital Load Center



Energy Sustainability Approach

KAIZEN THEME RESOLUTION

1 Loss Classification: Energy Losses		2 Loss Category :	
4. Kaizen Theme : Reduction in Energy Consumption			
5. Reason for Selection: Reduce Energy Consumption in Lighting			
6. BEFORE (Problem) :		7. AFTER (Improvement) :	
10 Analysis : Illumination is not influenced by 5-10% reduction in voltage , but helps in en			
WHY		Possible Ans	
Why 1	Full Voltage applied to Lighting system	No way to reduce voltage in lighti	
Why 2	No way to reduce voltage in lighting circuit.	Reduce voltage in lighting circuit.	
Why 3	Reduce voltage in lighting circuit.	5-10% voltage reduction doesn't but reduce energy consumption.	
	To reduce 5-10% voltage without affecting	To provide dimmerstat for reduci	

- Top Management Commitment
- Surveillance audit of implemented projects
- Use of Statistical tools for product mix .
- Energy Consumption monitoring & analysis
- Energy Saving target & monitoring

SUSTAINING THEMOMENTUM

THROUGH

- Review
- Monitoring
- Shop Floor Rounds

S No	Area	Pump Description	Process Requirement		Pump Rating (HP)	Pr. Gauge (Y/N)	Pressure (Kg/cm2)			Design Flow (LPS)	Pipe Diameter	
			Pre.	Flow			Design	Actual	User End		Suction	Disch.
1	Utility CT	CT No.1 Return pump No-1			50	N	3.5	2.8	1.5 max	78.9	6"	6"
2		CT No.1 Return pump No-2			50	N	3.5	2.8	1.5 max	78.9	6"	6"
3		CT No.1 Return pump No-3			50	N	3.5	2.8	1.5 max	78.9	6"	6"
4		CT No.1 Return pump No-4			18	N	3.5	2.8	1.5 max	42.9	6"	6"
5		Cooling Tower No.1 Pump-1			50	N	3.5	2.8	2	78.9	6"	6"
6		Cooling Tower No.1 Pump-2			50	N	3.5	2.8	2	78.9	6"	6"
7		Cooling Tower No.1 Pump-3			50	N	3.5	2.8	2	78.9	6"	6"
8		Cooling Tower No.1 Pump-4			125	Y	5	2.8	2	47.2	6"	6"
9	AHU	Plant-I Air Washer # 1 Pump			40	N	2.6	2	2	48.3	8"	8"
10		Plant-I Air Washer # 2 Pump			40	N	2.6	2	2	48.3	8"	8"
11		Plant-I Air Washer # 3 Pump			40	N	2.6	2	2	48.3	8"	8"
12		Plant-I Air Washer # 4 Pump			40	N	2.6	2	2	48.3	8"	8"
13		Plant-I Air Washer # 5 Pump			25	N	2.6	2	2	22.2	8"	8"
14		Plant-III Air Washer # 1 Pump			25	N	2.6	2	2	22.2	8"	8"
15		Plant-III Air Washer # 2 Pump			40	N	2.6	2	2	48.3	8"	8"
16		Plant-III Air Washer # 3 Pump			25	N	2.6	2	2	22.2	8"	8"
17		Plant-III Air Washer # 4 Pump			25	N	2.6	2	2	22.2	8"	8"
18		Plant-III Air Washer # 5 Pump			25	N	2.6	2	2	22.2	8"	8"



Kankroli Tyre Plant .



Emissions, Effluents and waste

Air Emissions

The main air pollutants are SPM- stack and ambient, RPM, Oxides of Sulphur such as SO₂ etc., Oxides of Nitrogen such as NO₂, NO₃ etc, CO and NH₃.

1. **Ambient air monitoring** – We take three readings at three specified locations (total nine readings at locations specified by Rajasthan Pollution Control Board) in a month, totaling to 108 readings every year. Following parameters are included in the monitoring –
 - a) SPM
 - b) Oxides of Nitrogen
 - c) Oxides of sulphur
 - d) Ammonia – Every year
 - e) CO – Every year
 - f) Lead – Every year
2. **Stack air monitoring** – Our consents require monitoring of only Boiler stacks. However, we also proactively monitor stacks of Dip Unit thermo pack, DG sets and mixer dust collector & fume extractor. Boiler stack monitoring is done twice in a month and other stacks are monitored every quarter / six months. Following parameters are included in the monitoring-
 - a) Stack SPM
 - b) SO₂
 - c) NO_x
 - d) Ammonia
 - e) Hydro Carbons for DG sets – Every six monthsDust collector and fume extractor monitoring for above parameters every quarter

Our Boilers are installed with various pollution control devices such as Multi-cyclones, ESP and dust containment devices to reduce emissions and provide a clean stack. Boilers are operated at optimum efficiency to reduce un-burnt coal content in the ash and CO emissions. Sulphur content is monitored in coal / fuel to limit oxides of Sulphur. Stack heights on Boilers and DG Sets etc are provided as per regulations. Special water troughs have been fabricated for Ammonia carboy storage. Ammonia carrying components are inspected regularly to detect corrosion, potential leaks and monitoring devices are provided with alarm to detect leaks which are attended immediately.



Kankroli Tyre Plant .



SAFETY CULTURE APPROACH & RESULTS

- There is a significant reduction in Man days loss over a period of time of 5 years and the reduction is up to 30% of the figure observed in the past.
- The system of capturing of First aid injuries have been started all around the plant and the analysis of each First Aid case is done thoroughly.
- Each Accident analysis is done using why why analysis tool and the same is done in a centralized way. Each Business area is making their own analysis.
- Safety culture is established throughout the factory thru few drives, daily safety slogan is circulated, safety thought is read in the morning meeting, each communication meeting starts with the Safety Thought, LED display is made on the main entry gate.
- Petroleum storage area compliance are 100% enforced and ensured.
- Accident free days are continuously increasing in 3 Business areas.
- Last few years major fire controls have been established. And Loss on account of fire incidents have been reduced significantly.

RECYCLING, RECOVERY AND REUSE PROJECTS:

1. Recycling of used process accessories - Tube patches / poly sheets etc.
2. Recycling of spilled chemicals during weighing
3. Recycling of more than 55 MT of dust black from Dust collectors every year
4. Recycling of more than 48 KL of waste oil every year.
5. Recycling of flammable waste in boiler.
6. Recycling and reuse of water
7. Recycling of process waste in lower grade product



Kankroli Tyre Plant .



Resource conservation -Our key focus area.

Our efforts

REDUCTION IN WASTE:

1. Process controls to eliminate excess weight of rubber, chemicals and solvents through state of art equipment / latest technologies and process controls.
2. Reduction in residue losses by bulk procurement of carbon, solvents etc.
3. Elimination of fly loss of carbon through pneumatic handling
4. Recycling of empty containers wherever feasible and cost effective.
5. Fabrication of tooling and spares from the waste in our in-house workshop
6. Elimination of chemical fly losses by use of packing which need not be removed.
7. Use of pre packed chemicals with usable packing to eliminate fly loss.
8. Continuous reduction in process waste, scrape and packing waste
9. Reprocessing of process waste to make it reusable
- 10.Reduction in fire incidents and losses
11. Reduction in excess dip solution usage
12. Monitoring and controlling of material losses through material balancing.
13. Enhancing useful life of lubricants through centrifuging and filtering.
14. Leak arresting and insulation renewal programmes



Kankroli Tyre Plant .



Accolades- Recent Glory



IMC-RBNQA -2005



Green-tech Safety Award
in Gold category



People Management Award



India Manufacturing
Excellence Award-2006



Green-tech Safety Award



Golden peacock
Environment Award 2007



CII National Award 2006
As
“Energy Efficient Unit ”



CII National Award 2007
As
“Excellence Energy Efficient Unit ”



Kankroli Tyre Plant .

