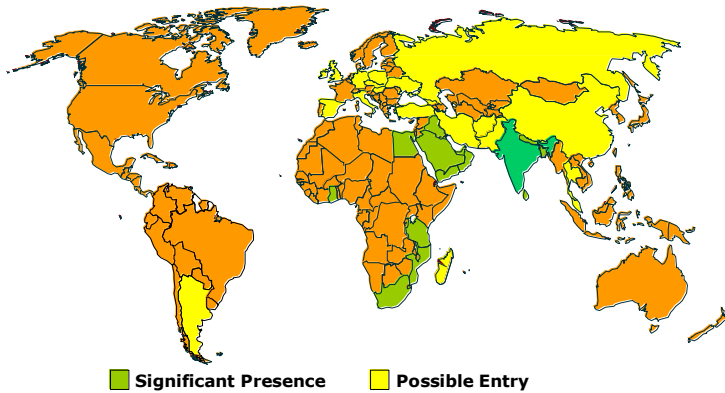


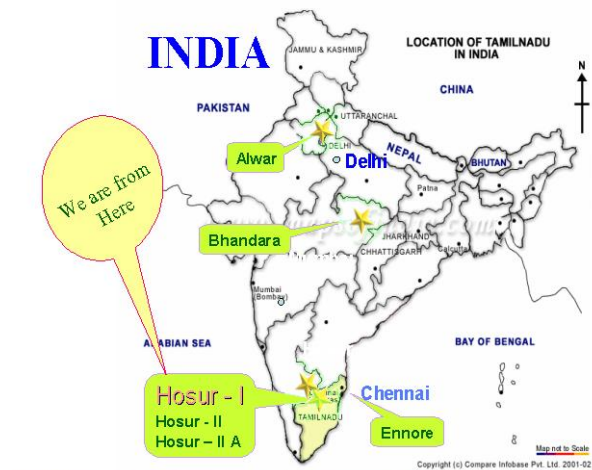
# ASHOK LEYLAND LTD.,

(A unit of Hinduja Group)  
Unit-1, Hosur (Tamilnadu)

## Unit Profile



Ashok Leyland Limited is the second largest commercial vehicle manufacturer in India. We have 4 manufacturing plants in India viz., one plant at Ennore near Chennai, our plant at Hosur near Bangalore, third one at Bhandara near Nagpur & fourth one at Alwar in Rajasthan. We also have a full fledged R&D facility at Hosur apart from Technical center for R&D activities at Vellivayalchavadi near Chennai. Management Development Centers available at Hosur & Chennai are to take care of our HR initiatives.



At unit 1- Hosur, we have the manufacturing plant spread over an area of 102.4 acres & our plant commenced manufacturing activities at Hosur during 1981. We are manufacturing around 44 vehicles /day & 300 nos "H" series engines /day. We have the world class manufacturing facilities like machining lines for critical engine components , heat treatment shops, apart from assembly of engines in dust proof enclosure, followed by vehicle assembly on conveyor & testing of vehicles on roller test bench.

# Energy conservation as a way of life.....

## Energy Policy

👍 To become the **"Best energy efficient unit among the automobile industries"**.

To meet the above objective by:

- 👍 Scientific approach towards energy management.
- 👍 Procuring new equipments with energy efficient installations.
- 👍 Resorting to increased usage of renewable energy.
- 👍 Encourage initiatives taken by our employees.

Daily Power Report

## Monitoring of Energy at Ashokleyland H-1

Daily Shop wise Power Report

Monitoring of Energy consumption at our plant is a real time exercise & we have energy meters installed at all our strategic locations to track down consumption on hour wise, shift

**Daily Power Report**

Units	EB	CP	Total	Power Factor
First Shift	6520	2820	11340	.99
Day Shift	39480	0	39480	.99
Night Shift	24240	9200	33520	1.00
<b>Total</b>	<b>72240</b>	<b>12100</b>	<b>84340</b>	<b>.99</b>
% of Total	85.65	14.35		

**Summary for the Month of October**

	Working Day	Holiday	Total	%
EB Power	775320	42480	817800	77.98
Captive Power	242110	1690	243800	22.91
<b>Total Power</b>	<b>1017430</b>	<b>43370</b>	<b>1060800</b>	
Avg Power Cons	64786	14457	79243	
No. of Power Interruptions	15	3	18	
Hrs of Power Interruptions	19.54	2.05	21.59	
Generator Run Hrs	332.46	2.2	335.06	
Avg. PF	.99	.99	.99	
HSD Consumed	67015	268	67283	
Lub Oil Consumed	18	42	58	

**Shopwise Power Consumption Report**

Area Description	FRI	SAT	SUN	MON	TUE	WED	THU	Month Cumulative	Prev Month VDA	Cur Month VDA	Norms For
<b>SHOP 1</b>	6327	5631	1076	3788	4123	4671	4291	64778	4617	3424	
SHOP 1 E1	3944	3336	659	2550	2857	3128	2728	42278	2378	2242	
SHOP 2 MIC	1985	1606	65	1342	1097	313	389	27165	1940	1372	
SHOP 2 T BEDS	1760	1460	120	1100	1400	1126	960	24600	1226	1348	
SHOP 880 ASS	570	570	240	540	540	660	660	11160	534	587	
LINE 2 ENGINE A	245	288	52	136	126	165	288	5841	302	287	
LINE 2A	717	771	390	895	577	597	610	12559	522	632	
SHOP 3 HT	1400	1680	310	1880	1750	520	500	23160	1576	1226	
SHOP 4	1370	1260	850	1190	1120	1630	1650	24526	1167	1249	
<b>Total (A)</b>	67723	56291	15553	65588	62398	54691	52186	915683	66381	58148	
<b>EB and Captive Power</b>	<b>35258</b>	<b>33368</b>	<b>10206</b>	<b>31880</b>	<b>38726</b>	<b>41280</b>	<b>33240</b>	<b>625568</b>	<b>44828</b>	<b>32232</b>	
CAP POWER	22480	22140	6320	20950	19830	15560	20210	355165	18930	19970	
<b>Total (B)</b>	<b>58018</b>	<b>55688</b>	<b>16526</b>	<b>51830</b>	<b>53656</b>	<b>56840</b>	<b>53450</b>	<b>880746</b>	<b>55658</b>	<b>58957</b>	
Difference (B - A)	287	269	167	252	269	269	264	5142	278	248	
% Error	.48	.48	1.08	.48	.48	.48	.48	.52	.48	.48	

wise & day wise basis. Our daily reports for power consumption depicts the data shift wise & shop wise & the information is available in online for anybody in the plant to access. Energy conservation projects are identified & implemented based on routine monitoring & periodical audits & the efforts are reflecting in our trend on specific energy consumption.

Daily Shop wise Power Report

Daily Shop wise Power Report

Ashok Leyland Enterprise Solutions  
Daily Water Report

Header Details  
Report Date: 5/10/2008, Last Report Date: 22/10/2008, Location: 0312

Water Receipt Details

Water Source Code	Water Source Desc.	Receipt (Lts)	Value (Rs)
MS01	SPOOT	0	0
MS02	PRIVATE WATER 1	109000	1308
MS03	PRIVATE WATER 2	298000	3576
MS04	PRIVATE WATER 3	226000	2712
MS05	THROUGH TANKERS		
<b>Total Receipt (Lts.)</b>		<b>651000</b>	<b>8010</b>

Water Stock Details

Storage Tank Number	Storage Tank Desc.	No of Blocks	Stock (Lts)
ST101	OVER HEAD TANK	30000	135000
ST102	OLD SLUMP	6	112500
ST103	NEW SLUMP	6	112500
ST104	SHOP 5 OVER HEAD TANK	3.5	131250
ST105	SHOP 5 OVER HEAD TANK SLUM	2.5	75000
<b>Total Stock (Lts.)</b>			<b>562250</b>

Summary  
Opening Stock (Lts.): 627750.00  
Total Receipt (Lts.): 651000.10  
Total Consumption (Lts.): 723250.10  
Closing Stock (Lts.): 562250.00

Ashok Leyland Enterprise Solutions  
Daily Compressed Air Generation Report

Header Details  
Air Report Date: 5/10/2008, Last Report Date: 22/10/2008, Location: 0312

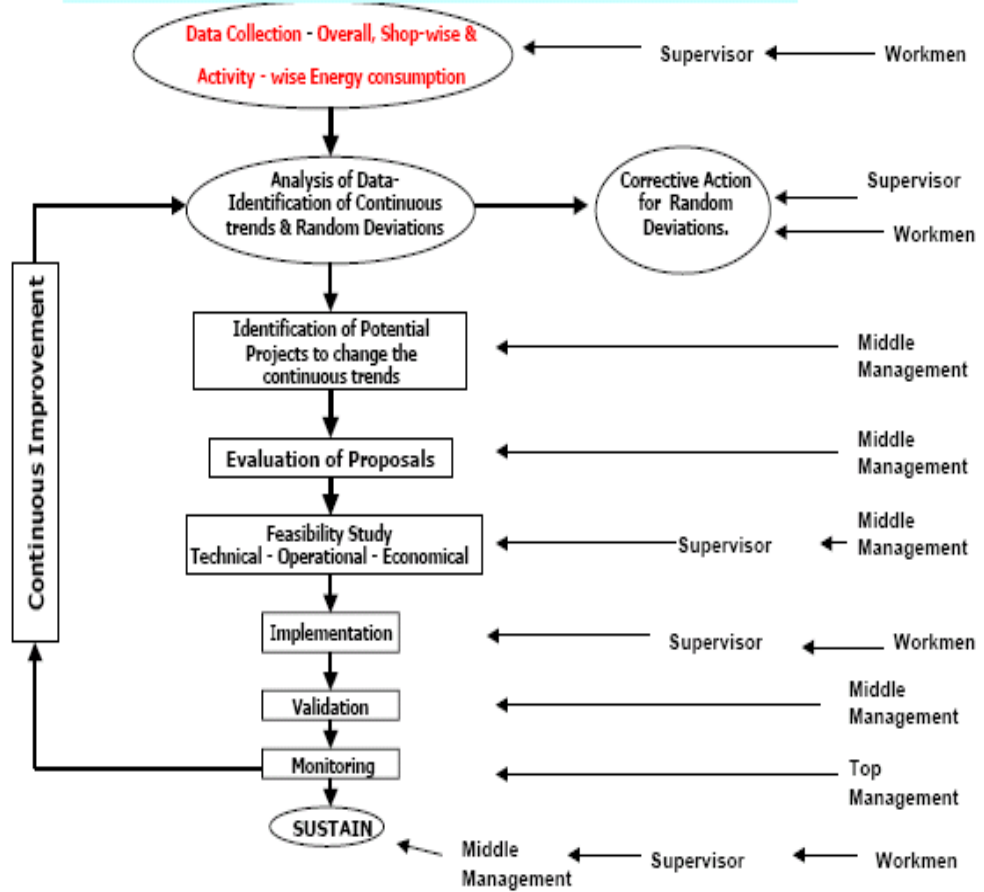
Compressor Details

Compressor Code	Type	Capacity CFM	Hours Run	Total Hours (H:MM)	Total CFT	Eq. Hours (H:MM)	CBM	HSD Consumed (Lts)	Units Consumed	Total KWH	Oil Consumed (Lts)
AC01	Electrical	1000	14	14:00	14000	14:00	23786.00		13.70	2055.00	
CPT1	Electrical	1200	17	17:00	20400	20:40	34659.00		2690.00	2690.00	5.00
CPT2	Electrical	1200	4.8	4:48	5760	5:76	9786.24		770.00	770.00	50
CPT3	Both	1200	5	0:30	600	60	1019.40		200.00	200.00	
CPT4	Both	1200	3.2	3:12	3840	3:84	6524.16		259.00	673.40	50
KC01	Electrical	500	16	16:00	8000	8:00	13592.00		8.40	672.00	50
KC02	Electrical	500	7.4	7:24	3700	3:70	6296.30		697.00	697.00	50
SC01	Electrical	191	7	0:42	133.7	13	227.16		12.00	12.00	
<b>Total</b>		<b>63.60</b>	<b>63.38</b>	<b>56433.7</b>	<b>56.43</b>	<b>95890.86</b>		<b>4930.10</b>	<b>8049.40</b>	<b>7.00</b>	



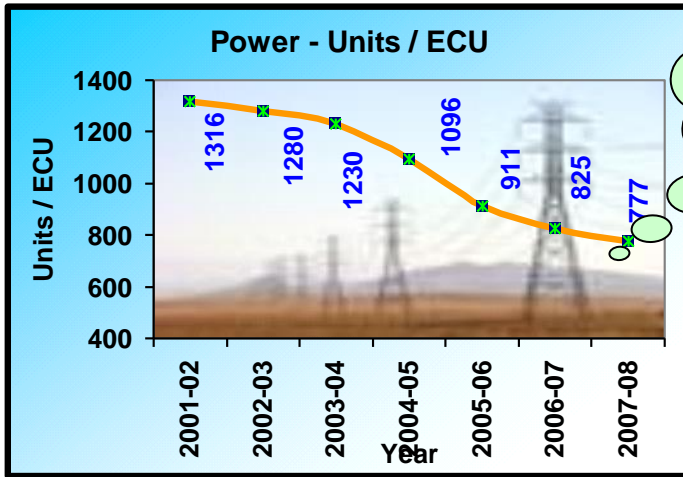
To Achieve and sustain the "Energy Conservation Measures" on line Data monitoring and towards employees involvement online forum has been created any projects

## Energy Conservation – AL Way



related to improvement can be registered and evaluated feasible study made and implemented accordingly.

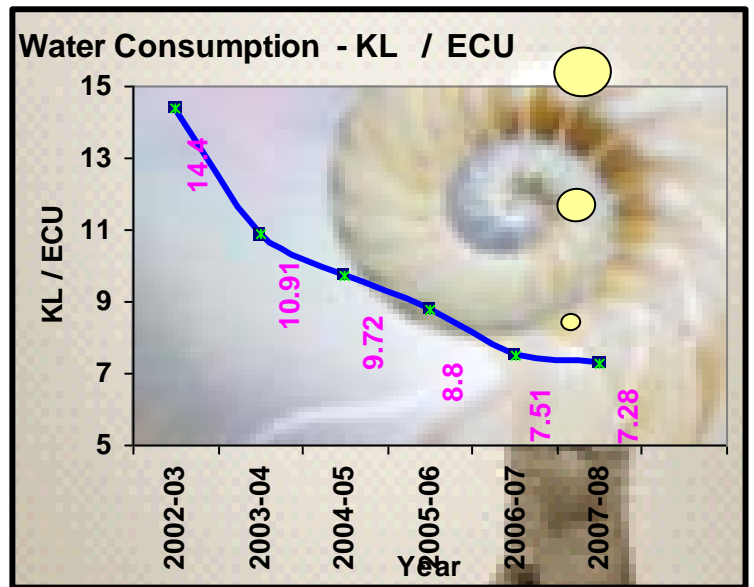
**As a result we achieved the following savings during 2007-08...**



29.10%  
reduction over  
the past 3 years

25.10%  
reduction over  
the past 3  
years

Energy conservation projects are identified & implemented based on routine monitoring & Periodical audits, & the efforts are reflecting in our trend on specific energy consumption for the last 3 years. A **reduction of 29.10 %** has been achieved over the last 3 years through our sustained efforts on energy conservation. Similar trends exist on other resources also such as compressed air, water & diesel consumption.



Year (April – March)	Annual Energy consumption					Prodn. in tons or any other unit of prodn.	Specific Energy Consumption		Redn. in Specific Energy consn. Over previous year **	
	Electrical		Thermal				Electrical KWH / Ton or unit of prodn	Thermal tons or KL per ton or unit of prodn	Electrical	Thermal
	KWH * Million	Rs Million	Type of fuel	Tons/KL	Rs Million					
2004-05	21.245	104.83	HSD	753	21.15	19377	1096	0.03884	10.89% ↓	02.02% ↓
2005-06	25.486	121.13	HSD	990	32.43	27968	911	0.03538	16.88% ↓	08.91% ↓
2006-07	26.228	138.60	HSD	795	26.09	31806	825	0.02499	09.44% ↓	19.68% ↓
2007-08	25.30	139.36	HSD	1142	37.12	32571	777	0.03506	05.81% ↓	*40.2% ↑

\* Increase in DIESEL CONSUMPTION (KL/ECU) during 07-08 is due to increase in captive power

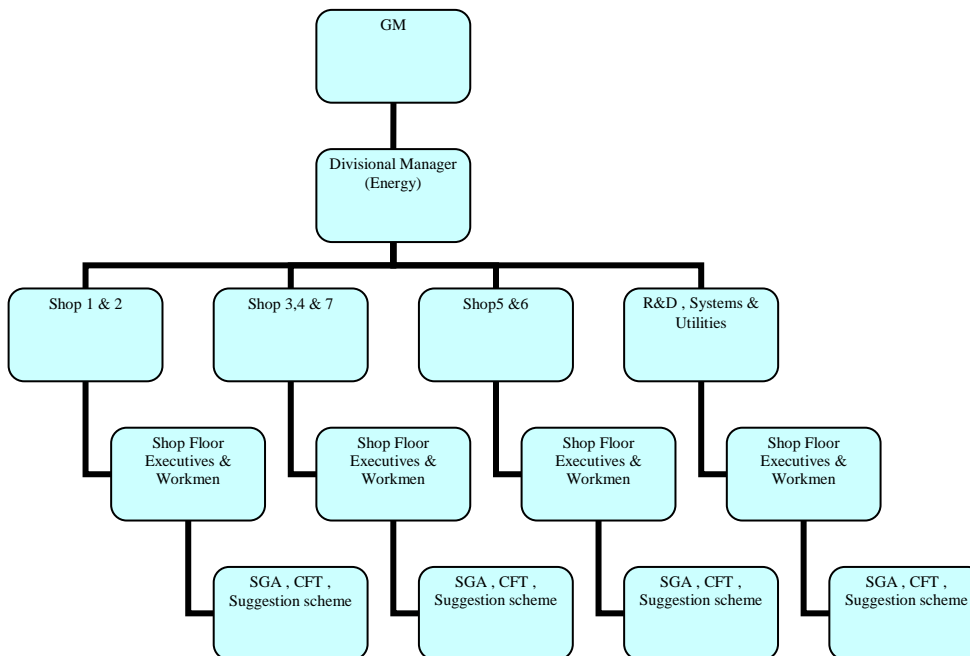
S. N	Title of Energy Saving Project implemented	Year of Implementation	Annual Electrical Savings achieved		Investment Made
			Units Million	Rs million	Rs million
1	By optimising the server room temperature, energy saving in Air Conditioners	2007-08	0.024	0.12	0
2	Optimisation of Energy in water pump operations	2007-08	0.08	0.4	0.1
3	Enhancement of blower efficiency by modifying the air intake arrangement at shop 2 engine assembly	2007-08	0.08	0.4	0.1
4	Energy saving in HCB Line 1 (LA 4018) by up gradation of conveyor	2007-08	0.04	0.2	0.5
5	Optimisation of Feed voltage by dedicating the Transformers for upland and down land shops	2007-08	0.16	0.8	0
6	Elimination of Grinding operation in axle beam by process Re-engineering	2007-08	0.02	0.075	0
7	Introduction of Energy efficient motors for Zero Discharge project	2007-08	0.02	0.8	0.3
8	Energy saving thro' introduction of 20 KVA transformers instead of 70 KVA transformers	2007-08	0.025	0.03	0.025
9	Conversion of air hoist to Electrical Hoists in M.D.V assembly.	2007-08	0.027	0.14	0.15
10	Power saving circuit in chip conveyor incorporated.	2007-08	0.005	0.025	0
11	Power saving circuit introduced for hyd. Motor to minimise the idle running.	2007-08	0.018	0.09	0
12	Power saving circuit introduced to avoid the idle running of Hydraulic power pack.	2007-08	0.018	0.09	0
13	Energy efficient ASIAN CFL lamps (192W) & 28W shop 5 E/A by replacing 250 W MH lamps. (4200 units/ annum)	2007-08	0.039	0.195	0.06
14	Modification of existing high Power Domestic M/C Lamp with low power Auto lamp for Power saving, Efficient & User friendly lamp in Hobbing machines	2007-08	0.01	0.05	0.5
15	Optimising the power consumption by avoiding the use of heaters & improving the effectiveness of Rotary cage chamber	2007-08	0.288	1.44	0
16	To operate water pumps in shop 2 test bed area with time switch and cut off during the idle running to save energy at all the three cooling tower modules.	2007-08	0.243	1.22	0.05
17	Charge air cooling unit elimination in TB210, TB212 and Engine water is utilised for Heat exchange.	2007-08	0.013	0.066	0.04

18	Shot blasting fixtures modified to increase productivity and reduce power consumption.	2007-08	0.07	0.33	0.2
19	VFD incorporation and modification of controls on FN3EV Milling Machine.	2007-08	0.15	0.75	0.15
20	Tower lamp units modified with LED type	2007-08	0.025	0.125	0.05
21	Power saving circuit for chip conveyor incorporated in JJ machine.	2007-08	0.025	0.125	-
22	Dust Collector interlocked with HYD ON & Start/Stop PB relocated for energy saving.	2007-08	0.05	0.25	-

## Energy management

structure at our plant starts from Unit Head & further percolates down to Divisional Heads, Energy manager & Department Manager Representatives & leading further to Small Group

Activities (SGA) and Cross Functional Teams (CFT)





Towards environmental improvement battery trucks utilization have been increased. Greenery maintained inside the plant and tree plantation along with voluntary association carried out.

RO plant installed at ETP to recycle the treated water for our process (eg., feed water for washing m/cs). Investment Cost: 215 lakhs  
Quantity of water recycled : 50 kl/day



Common secured land fill facility for an area of 621 sq.m was constructed at Hosur 2 for disposal of ETP Sludge with an investment of Rs 35 lakhs. Qty of Sludge disposed from H-1:550T which was stored during the past 15 yrs in 150 sq.m.

Towards awareness and encouragement of Environmental & Energy Conservation measures

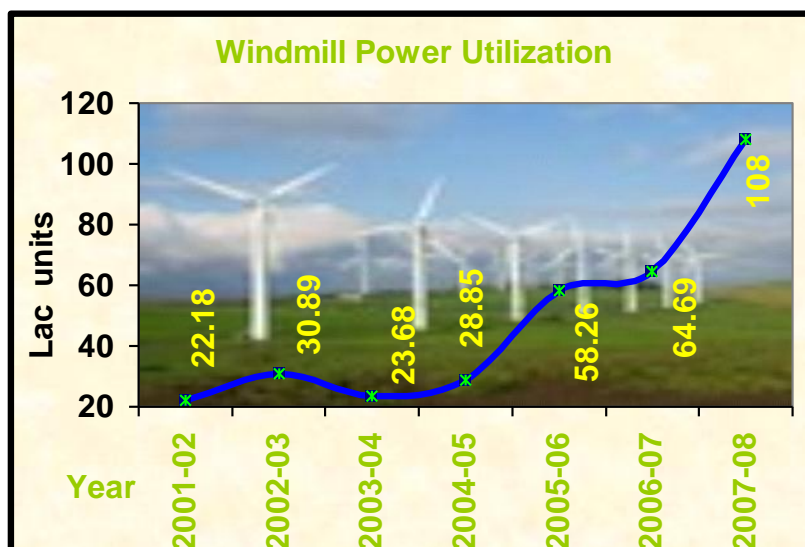
Awareness classes, drawing competition conducted for employees & Employee children.

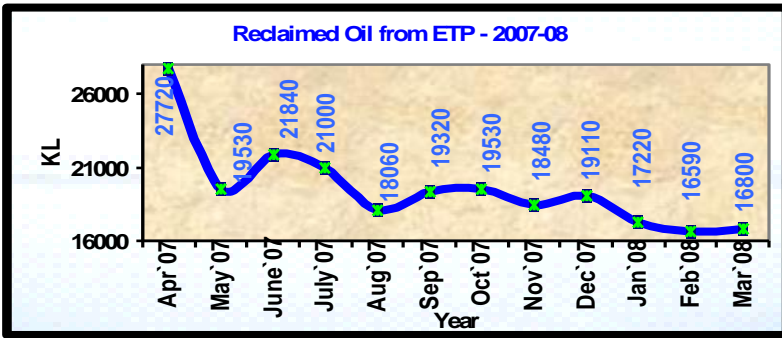
**List of Major environmental improvements made during 2006-07,2007-08**

S.No	Improvements	Benefits
1	Exhaust gas purifier & introduce in the exhaust circuit in 4 vehicles to reduce HSU from 65 to 60	Pollution prevention
2	Forklift P4 Engine replaced with S4 Engine in 15 vehicles	Pollution prevention
3	Filtration system with paper ban filtration system in LA 4678 Modified	Reduction in waste generation
4	Potential fire hazard inside the LPG manifold room by providing leak detector incorporated	Safety
5	"Nederman" make smoke exhaust system installed MAD RTP area.	Pollution control at work place
6	Oil leak prevented by providing trays in LA8400 &LA 8823 (to reduce top up qty from 15lts/day to 10lts/day)	Resource saving
7	Elimination of the burr flying out from the machine during machining by introducing a suitable dust extractor in LA 8308	Pollution prevention
8	"Anobond dispenser" unit installed at shop-5 machine shop	Reduction in anobond consumption by 50%
9	Introduced LPG fired boiler for lean hour cooking at canteen	Reduction in fuel cost from Rs.528/hr to Rs.66/hr
10	Provided dust free work environment thro installation of dust collector in 10 machines.	Pollution control at work place
11	Installed new ammonia manifold in shop-6 HT	Pollution control at work place
12	Introduction exhaust hood at LH side of roller test bench in shop-09	Pollution control at work place
13	Reduced tools consumption in WIDMA-II M/C from Rs.88000/Mon to Rs.44000/Mon by using alternate cutting material	Saving Rs.4.5Lakhs/annum
14	Reduced paint consumption in axle assembly paint booth from Rs.29/Axle to Rs.27.50/Axle by providing HVLP gun	Rs.1.50/Axle
15	Recycling of used wood for packing	Increased from 4100 cFT/Month to 5260CFT/Month
16	Machining allowance optimization	Reduced swarf quantity from 257 kg/ECU to 205KG/ECU
17	Replacement of 250 nos of wooden spillages with steel spillages in shop-2 & 5 E/A.	Reduction in consumption wood

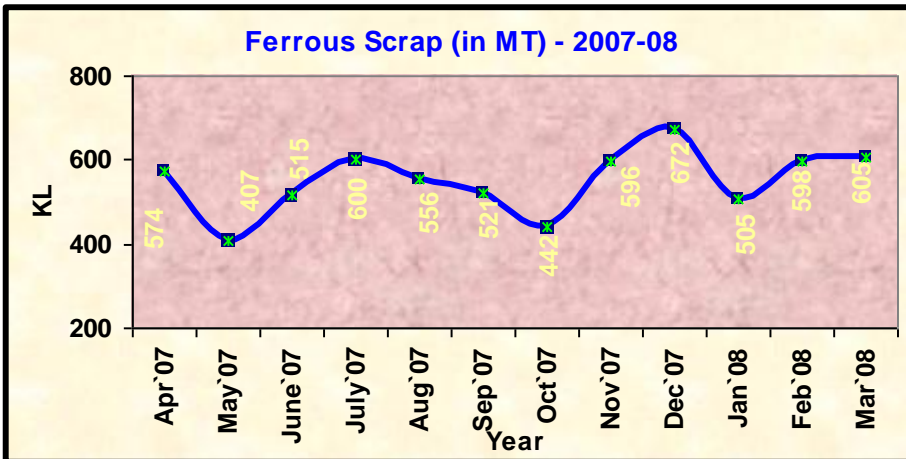
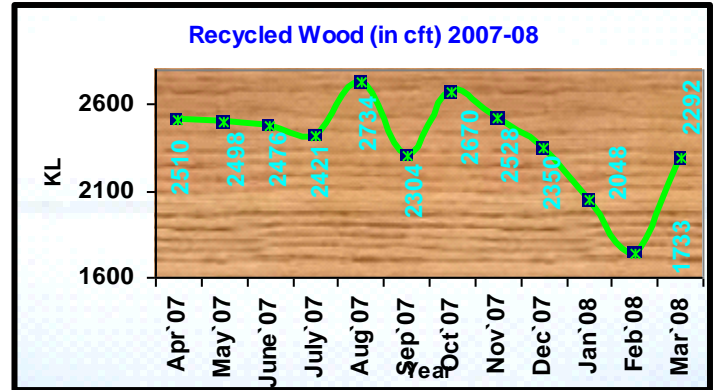
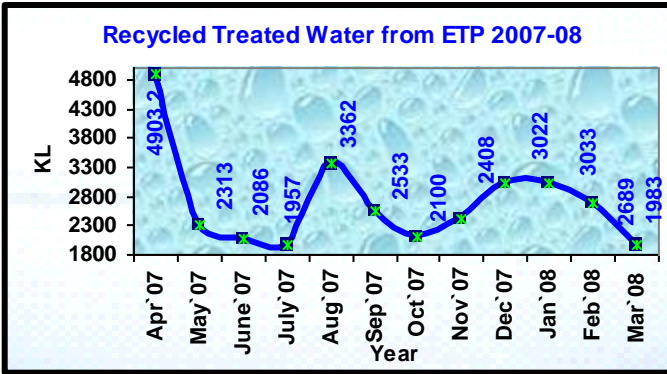
**Renewable energy trend:**

Ashok Leyland has invested for windmill energy generation & the trend on the no. of units supplied to the grid is indicated in the trend chart. Power generated thro' wind mill is 108% of the total power requirement of AL.





Towards reclamation and reuse the following saving achieved.



Sustainable growth is gaining significance and is increasingly becoming relevant to Ashok Leyland as the Company expands operations.