



Mahindra & Mahindra Ltd. (Automotive Division) Nashik Plant

1.0 Unit Profile

1.1 About M & M Nashik Unit

Mahindra & Mahindra, automotive division is in the business of manufacturing Utility vehicles, SUV's, LCV's and Cars. Nashik unit manufactures market leaders products in their respective segment ;Scorpio, Bolero, Logan (JV with RENAULT FRANCE) and spares for these vehicles. M&M's R&D centre, where new product design activities carried out, is also located at Nashik. The total sales turnover of the Nashik unit is around Rs. 5015 Cr.

2.0 Energy Consumption

Annual electricity and LPG consumption for last three years is as follows

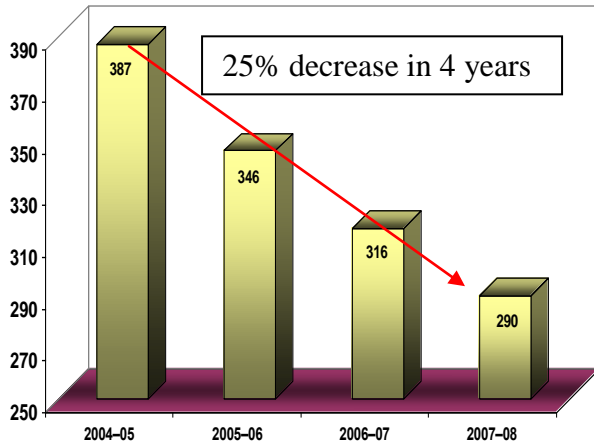
Year (FY)	Annual Energy Consumption			
	Electrical*		Thermal (LPG)	
	Lakhs kWh	Rs Lakhs	Tons	Rs Lakhs
FY 05 – 06	364.41	1227.97	2805.10	701.28
FY 06-07	406.16	1637.77	3112.54	930.28
FY 07-08	470.91	1989.34	3949.59	1343.99

* Including DG Generation

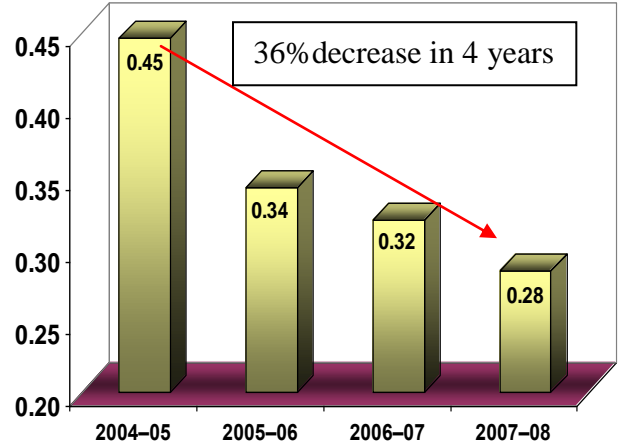
Specific Energy Consumption (SEC)

Description	Unit	FY 05 - 06	FY 06-07	FY 07-08
Electrical Energy	kWh/Eq. Vehicle	346	316	290
Thermal Energy	M KCal/Eq. Vehicle	0.35	0.32	0.28
Total Energy Bill	Rs. Lakhs	2530.29	3248.63	4029.05
Energy as % of Total mfg cost	%	9.74%	9.5%	13.57%

SEC (Electrical)



SEC (Thermal)






Mahindra

3.0 Energy Conservation Policy & Organizational Set up

Mahindra & Mahindra Ltd, Automotive Sector, Nashik emphasises on all types of energy (Electrical, Thermal and Compressed air.) conservation. Energy conservation measures are identified, reviewed periodically for techno-commercial viability in ECON Cell, implementation & verification strategies are made. ECON meeting is held on every alternate Tuesday of the month to review the action plan. We have an active “ENERGY MANAGEMENT POLICY” which is given beside.



Mahindra

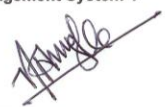
Mahindra & Mahindra Ltd.
Automotive Sector ,Akurli Road,
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ENERGY MANAGEMENT POLICY

Mahindra & Mahindra Ltd, Automotive Sector are in the business of Designing & Manufacturing Vehicles . We are committed for high customer satisfaction through the process of continuous improvements in our Energy performance in all our operations.

We are committed to :

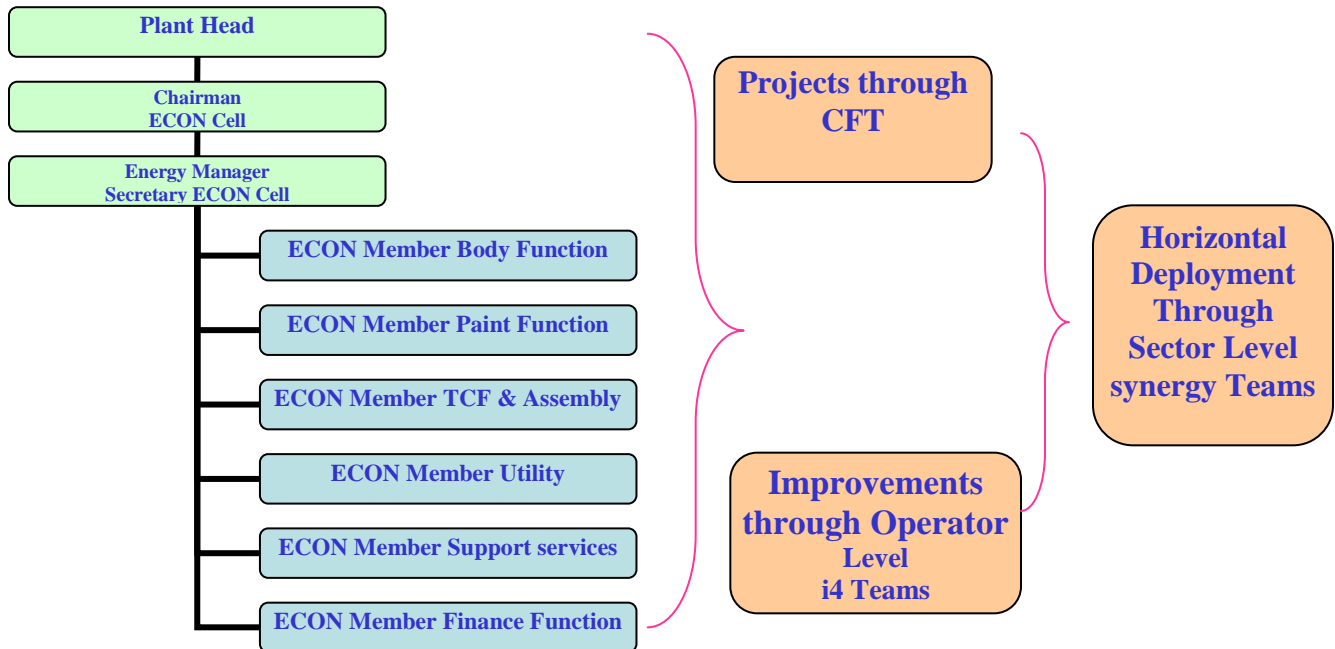
- Bench mark specific energy consumption with National & International standards, and setting up systems to achieve them.
- Increase use of renewable energy & alternate fuel sources.
- Incorporate energy efficient designs & equipments in all projects.
- Conduct regular Energy Audits to optimize resources.
- Form small group activities to increase employee involvement.
- Promote Energy Efficiency movement among employees and society through various awareness programs.
- Recognise energy conservation initiatives taken by employees.
- Work with business associates in adopting energy conservation practices at their end.
- Ensure energy conservation measures are implemented in a safe and Environment friendly manner.
- Strengthen Energy Management Program through the enhancement of skills and competence of our employees.
- Reduce Energy cost continuously every year by adopting effective "Energy Management System".



Vijay Dhongde
Sr. Vice President – Mfg. Operations
Automotive Sector
1st August 2008

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Organizational Setup for Energy Management



4.0 Energy Conservation Achievements

Year	Achievement of energy savings per year basis				Investment on projects (Rs. lakhs)
	Electricity	Fuels		Total savings	
	(Lakhs kWh)	LPG Ton	HSD (KL)	(Rs. lakhs)	
FY 06-07	39.34	250.68	*25.6	244.12	525.15
FY 07-08	28.99	317.08	*114	266.51	146.9

A) Painting on cab & cargo on one skid in MQS Paint Shop

<p>Stopped painting of cab & cargo on separate skids & started painting on one skid –</p> <ul style="list-style-type: none"> • Increase in productivity by 20 bodyshells/shift • Savings in electricity by 40 kWh/body shell • Savings in LPG by 13 kgs/body shell <p>Annual savings – Rs.71 Lakhs</p>	
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B) Optimization of LPG burners during winter

Changed humidity setting of ASU units in paint shop as per season as against constant setting earlier –

- Savings in LPG by 125 MT/yr worth Rs. 42.5 Lakhs/yr

SEASONAL SETTING FOR AIR SUPPLY UNITS W. R. T. TEMPERATURE & HUMIDITY

Month	Max. temp. deg. Cent	Min. temp. deg. Cent	Average temp	Max. Rh	Min. (Rh)	Average Humidity	Humidity setting (Rh value)				
							ASU 01	ASU 02	ASU 03	ASU 04	ASU 05
Jan	33.5	5.5	12	96	16	48	70	70	65	70	65
Feb	33.8	9.7	21	85	15	50	70	70	65	70	65
Mar	39.3	15	27	82	7	52	70	70	65	70	65
Apr	38.6	16	32	94	13	53	75	75	75	75	75
May	40.8	19.5	37	89	12	56	75	75	75	75	75
Jun	37.5	20.2	30	97	34	70	75	75	75	75	75
Jul	29.9	20.4	25	98	63	80.5	75	75	75	75	75
Aug	29.5	21.5	23	97	63	80	75	75	75	75	75
Sep	33.7	15.7	22	98	37	75	75	75	75	75	75
Oct	35.4	14.6	25	98	25	60	75	75	75	75	75
Nov	32.4	10.8	16	96	25	55	70	70	65	70	65
Dec	31.8	9	12	87	12	49	70	70	65	70	65

C) Replaced CT pumps with energy efficient ones fitted with VFD drives

Replaced conventional pumps with energy efficient pumps fitted with VFD drives –

- Savings in electricity worth Rs. 6.48 Lakhs/yr
- Investment – Rs.14.5 Lakhs



5.0 Energy Conservation Plans and Targets

Description	Unit	FY 08-09
Electrical Energy	KWh / Eq. Vehicle	280
Thermal Energy (LPG)	M KCa l/ Eq. Vehicle	0.25
Water consumption	KL / Eq Vehicle	2.8



6.0 Commitment to Environment, Safety & Social Responsibility

6.1 ENVIRONMENT

Mahindra & Mahindra Ltd. is committed to “Protect the Environment, Prevention & Control of Pollution, Minimise the Waste Generation, Promote Energy Saving and Conservation of Resources”. An “Environmental Policy” duly signed and documented is provided expressing our commitment towards the EMS. Following are some of the initiatives taken by the management towards Environment protection

1. Installed Effluent Treatment Plant and the treated effluent is being used for Gardening spread over the area of about 1.00 Lac M².
2. Installed Bio-Gas plant for processing Canteen solid Waste to generate a cooking gas for its use at canteen
3. Installed Solar Water Heating Systems for canteen hot water requirement.
4. Around 25% of the electricity requirement for the FY 06- 07 is met by clean energy i.e. wind power.
5. For FY 07-08 massive plantations of 1 Lakh trees in the Nashik has been planned in association with Forest department & Air Force.

6.2 Safety

Industrial Safety is an integral and essential part of every operation / process in Mahindra & Mahindra at Nashik. We are certified for OHSMS as per OHSAS 18001:2007 since February 2007.

Following practices are used to motivate Safety in plant:

1. Behaviour based safety (BBS) for people’s involvement has been started.
2. Staff / workers involvement in safety committee. Regular meetings are conducted to review the Safety concerns and accident reduction.
3. Product Unit head is involved during the Safety Patrol rounds. Line managers and operators motivate reduction in accidents.

Yearly Safety and HAZOP studies are conducted. The report is reviewed to take corrective action for the observations in report.