



TATA MOTORS LIMITED

Jamshedpur



Unit Profile

Tata Motors, which is India's only fully integrated automobile company with multi-location plants, has product offerings spanning Medium and Heavy Commercial Vehicles, Light Commercial Vehicles, Multi-Utility Vehicles and Passenger Cars. The Commercial Vehicle Business Unit (CVBU) of Tata Motors is India's largest and world's fifth largest commercial vehicle manufacturer. Enjoying nearly 63% overall market share in commercial vehicle sector the company had a turnover of Rs. 33094 crores during 2007-08. As an important part of CVBU of Tata Motors, the plant at Jamshedpur manufactures Medium and Heavy Commercial Vehicles from 7 to 49 ton gross vehicle weight. Having an installed capacity of 96,000 vehicles, the plant produced 122211 vehicles during the year 2007-08. Company's global footprint include Daewoo Commercial Vehicle plant at South Korea, Hispano Carrocera, a reputed bus & coach manufacturer in Spain, JVs with Marcopolo of Brazil, Thonburi Automotive Assembly Plant in Thailand, Fiat Auto in Argentina and recent Jaguar & Land Rover deal resulting in significant global presence.

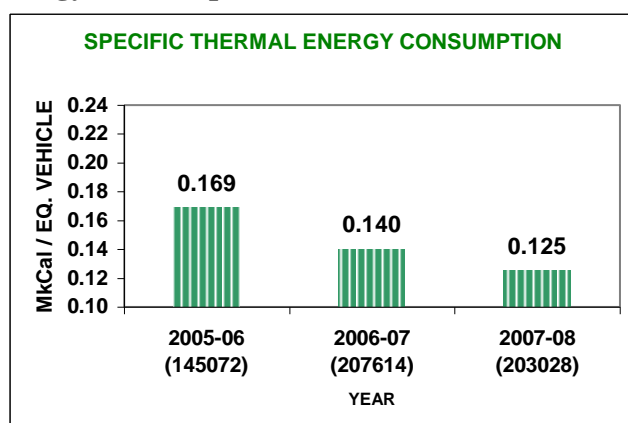
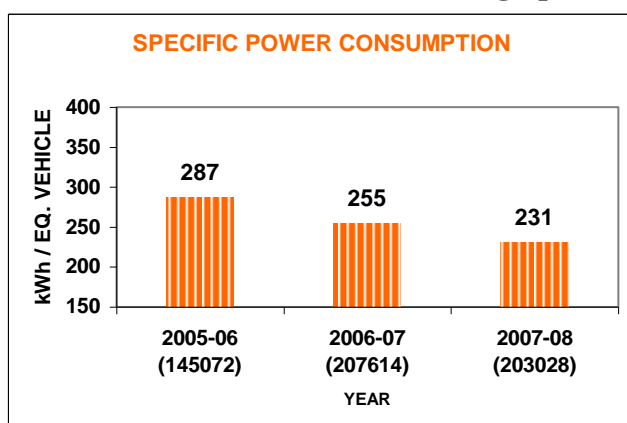
The Automobile unit at Jamshedpur has captive Forge and Foundry divisions which meet its requirement of all critical forgings and alloy iron castings. Working on Tata Business Excellence Model and integrating its initiatives of Kaizen, TPM, SDT, WCM, ICR and ISO/TS 16949, the unit has been seeking newer and higher peaks of performance in industry.

Energy Consumption

Energy Conservation & energy efficiency improvement initiatives are implemented systematically and the Specific Energy Consumption as also Energy Cost as % of Manufacturing Cost has been coming down steadily. During 2007-08, savings of Rs 3.53 crores in energy resulted.

DESCRIPTION	UNIT	2005-06	2006-07	2007-08
Electrical energy	kWh / Eq. Vehicle	287	255	231
Thermal energy	MkCal / Eq. Vehicle	0.169	0.140	0.125
Manufacturing Cost	Rs. Lakhs.	496491	713473	717762
Total Energy Cost	Rs. Lakhs.	9205	10456	9097
Energy cost as % of Manufacturing Cost	%	1.85%	1.46%	1.26%

Declining Specific Energy Consumption



Energy Conservation Commitment, Policy and Set up

Energy Conservation and improving energy efficiency in all our operations is a Top Management priority for the unit. Energy Policy as indicated below provides the guidelines for energy strategy and initiatives.

Awareness & involvement of people at all levels has been a major plank for implementation of energy conservation measures.

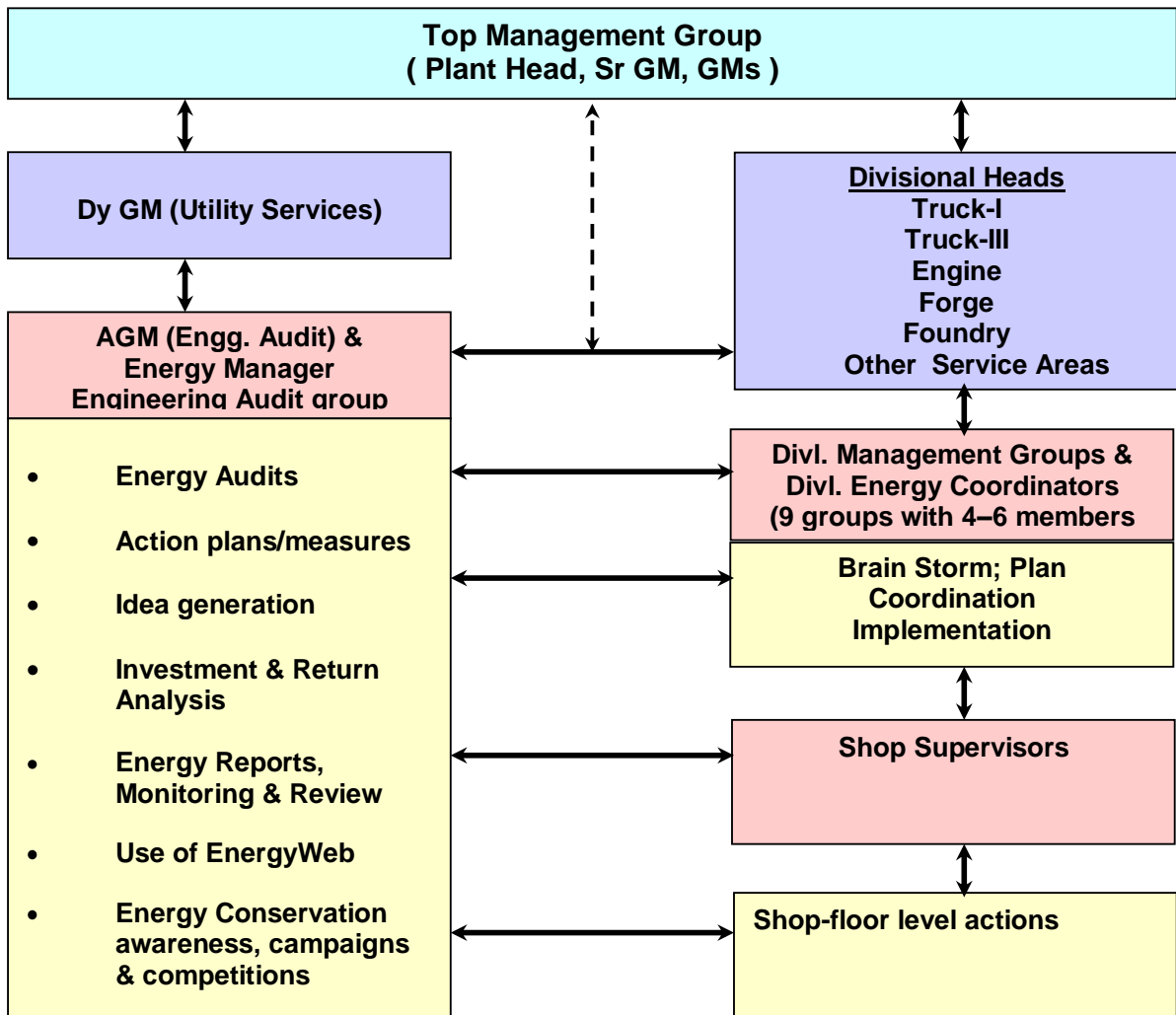
Internal *Energy audits* are carried out regularly by an Engineering Audit group headed by certified Energy Auditor reporting to Dy GM (Utility Services) and also co-ordinate the energy conservation activities in the plant.

Every year **Targets** are set for the various divisions & **Energy Conservation Action Plans** are worked out through brainstorming.

The Specific Energy Consumption & status of action plans is reviewed weekly with Divisional Energy Coordinators using a *common matrix* which is shared across all divisions and areas using ENERGYWEB on the Intranet to facilitate *cross-pollination of ideas*.

Ideas implemented by groups are encouraged by publication in in-house magazine ‘Flashes’

Energy Conservation Team Set up





Energy Policy

We, at **Tata Motors - Jamshedpur** are committed to optimum use of all forms of Energy by:

- Using energy efficient alternatives, methods, work practices and eco-friendly technologies.
- Minimizing and eliminating wastages in all segments of our operations.
- Creating awareness on Energy Efficiency & Energy Conservation amongst employees at all levels as also our supply chain partners.
- Using effective Energy Management system for reducing energy consumption and its cost.
- Using renewable energy sources where feasible.

3 December, 2007

S B Borwankar
Plant Head
Jamshedpur Works

TATA MOTORS



Energy Conservation Achievements

During 2005-08, the unit implemented 88 energy saving projects across the plant based on ideas generated during periodic brainstorming sessions held by divisional groups. These resulted in Specific Power and Specific Thermal Energy reduction by 19.5% and 26.0% respectively.

YEAR	PRODUCT	kWh/ Eq. Vehicle	% REDUCTION OVER 2005-06	MkCal/ Eq. Vehicle	% REDUCTION OVER 2005-06
2005-06	Auto Chassis	287	--	0.169	--
2006-07	Auto Chassis	255	11.1	0.140	17.2
2007-08	Auto Chassis	231	19.5	0.125	26.0

Energy Conservation Projects

High Emissivity coating inside Baking Oven

Apply high emissivity Espee coating on inside the walls of the Frame paint Baking Oven and reduce heat loss and heating time:

Earlier energy consumption: 2714 kWh /Day
Now energy consumption: 2280 kWh /Day
Annual Energy saving: 134540 kWh
= Rs 4.69 Lakh

Investment: Rs 40000
Payback period: < 1 month



Loramendi & core assembly machines in Core-shop

Installation of new Loramendi & core assembly machines in core-shop and consequent elimination of umbrella heaters in 6BT head line & CMVR head line.

Annual Energy saving: 9 Lakh kWh
= Rs 32.04 Lakh

Investment: Rs 100 Lakhs
Payback period: 37 months



Installation of Robotic handling and improving productivity & Sp Energy

Complete automation of 6000 T Press by installing robots and continuous running without breaks thereby saving on heat loss.

Energy Saving : 107000 kWh
= Rs 3.81 Lakh

Investment: Rs 37 Lakhs



Harnessing natural Day-light during sunshine hours

Install 955 nos Polycarbonate translucent roof sheets for harnessing day-light during sun-shine hours in various shops in the plant.

One Poly carbonate sheet eliminates the use of one 250W HPSV/Metal Halide lamp during daylight hours.

Energy saving: 525250 kWh/Yr



Installation of Energy Saver for shop overhead light circuit

Voltage reduction increases lamp life and a negligible change in illumination level.

Saving in Energy : 25000 kWh/Yr
= Rs 90000/Yr

Investment : Rs 1 Lakh

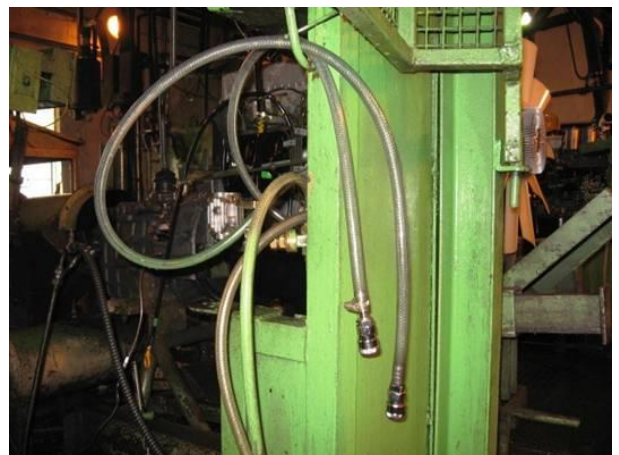
Payback period : 13 months



Non-return Quick Couplers in supply and return hose lines on Engine Test-beds

Earlier on an average 350 ml of HSD was getting wasted per Engine tested. Non return quick coupler have been designed and installed at 21 Engine test beds which ensure that HSD inside the supply and return hoses does not get drained out.

Saving of HSD : 24.5 KL/Yr
Annual saving : Rs 7.84 Lakh
Investment : Rs 0.20 Lakh
Payback period : < 1 month



Besides the above, other projects implemented during 2007-08 are:

- * Area wise centralization of man coolers and provision of timer to switch off during non working time.
- * Change-over to lower wattage energy efficient lamps for lighting in the plant & use of improved luminaries and circuit & control.

- * Use of Variable Frequency Drives (3 Nos 110KW, 2 Nos 15 KW) on motors of centrifugal Blowers & pumps as flow control strategy for saving energy.
- * Improved work practices and improved hearth loading and scheduling resulting in reduced shift running of production lines & certain equipment.
- * Auto control of Washing Machine Heaters: Digital Temperature Control system provided to control heater on/off to control temperature as per set value AND Implementation of Real Time Switch to Automatic Control of Washing Machines.
- * Renewed old insulation of ED and color line Ovens and arrested heat leakage from ovens.
- * Reduce the Generation pressure of Centac compressors in AIF compressor house from 95PSIG to 92 PSIG.
- * Regular comprehensive compressed air leakage audit and corrective action, thereby reducing energy loss.

Energy Conservation Plans & Targets

Tata Motors is committed to further improve its energy performance by exploring new avenues for energy saving on a continuous basis and targets have been set for 2008-09. It is understood that adopting further improvements in energy efficiency will call for changes in processes involving higher investment. Some of the major proposals as a part of future plan for achieving targets in energy conservation are:

- (1) Installing one more high capacity Cold Core Making machine and enhancing and reduce dependence on power intensive shell core machines.
- (2) Convert LDO heating to Propane heating in paint baking ovens of Centralised Paint Shop.
- (3) Changeover from conventional LPG to propane in Foundry & Central Canteen.
- (4) Installing VFD's in other identified areas to save power.
- (5) Continuing with phased installation of Translucent roof sheets for day lighting in identified areas.
- (6) Conversion of LDO fired Continuous Core Oven to Propane fired.
- (7) Installation of Casting Cooling conveyor and consequent stopping of 3 vibratory units (7.5 kw, 15 k.w., 30 k.w.) , two fans (45 kw, 93 kw) & two rotoclones 110 kw + 110 kw
- (8) Installing energy efficient billet induction heating and automation of same, replacing old inefficient oil fired R/H furnace.
- (9) Installing two Nos, energy efficient 3500 cfm centrifugal compressors for ensuring better capacity matching during different times of the day.

Environment & Safety

Tata Motors, Jamshedpur has Environment Management system certified to ISO 14001 for the Works and its Town services. Certified to OHSAS, ISO 18001 certification, the Company also makes Corporate Sustainability Report under GRI guidelines. The Environment Policy is attached.

The company has also engaged Ernst & Young consultants this year to create awareness about Climate Change and to establish Carbon Footprint and improvement plans for emission reductions.

1. The company monitors and controls air pollution for which bag filtering and roto-clone system is installed. Also safety audits by Audit teams are carried out regularly to ensure use of safe practices.

2. Every year tree plantation by senior officers and employees is undertaken. 120000 trees planted during Van-Mahotsva in 120 acres of area and 44000 saplings were distributed amongst school children in surrounding community areas. Campaigns for Preserving Environment and Conserving Energy are regularly taken up. Over 400 students and 50 opinion leaders & facilitators from rural communities were given class room Awareness program as also taken around the plant during 2007-08.

3. Rain Water Harvesting has been taken in a big way at Tata Motors. During 2007-08, 540 Million Litres of water was harvested and recycled from the Works to Filter Plant. More projects are initiated.

4. Green belts, Lawns, have been created at several locations in the Works and the Township. Every year tree plantation by senior officers and employees is undertaken. 16000 saplings were distributed and planted in surrounding community areas.



5. In our product, Emission levels from our commercial vehicles has been consistently reducing to meet the emission standards called for by BS-II, BS-III levels. For reducing noise levels, measures such as Acoustic shields, Silencer design, Viscous or Electric Fan were taken to reduce exterior noise of the vehicle.

6. Phasing out of CFC Refrigerant R-12 (which is an Ozone Depleting Substance) by 2010 in old A/C units, Water Coolers, Refrigerators and Deep-Freeze units has progressed further as per plan.

7. Industrial Incinerator for hazardous waste and Hospital Incinerator for bio-medical waste have become fully operational thereby improving the environment.

8. The new Effluent Treatment Plant has effectively recycled 756445 M³ of treated effluent to Cooling Towers for top-up water during 2007-08.



Environmental Policy

TATA Motors Ltd., Jamshedpur reaffirms its commitment to minimize the adverse impact of its products, operations and services including town-services on the environment.

Towards this end, it shall strive to:

1. Establish sound environmental objectives and targets with a process of reviewing the same.
2. Comply with all the applicable legal requirements and others to which organization subscribes.
3. Reduce the emission levels of vehicles in full compliance of the regulatory norms
4. Use of Environmentally sustainable technologies and practices for prevention of pollution and the continual improvement in environmental performance.
5. Conserve natural resources and energy by minimizing their consumption and wastage.
6. Minimizing waste generation, maximizing resource efficiency, recycling of materials, improving greenery and developing eco-friendly waste disposal practices.
7. Building awareness amongst all the categories of employees and residents of the township on environmental issues.

This policy shall be communicated to all persons working for and on behalf of the organization and shall be made available to the public.

Date: 10 May, 2008

(S B Borwankar)
HEAD
(Jamshedpur Plant)

environmental

policy