

TATA MOTORS

Company Profile

TATA GROUP

The Group was founded by *Jamsetji Tata* in the mid 19th century,

- ❑ *96 plus operating companies*

- ❑ In seven business sectors:

Information systems & Communications

Engineering

Material

Services

Energy

Consumer products

Chemicals.

- ❑ The Tata Group is one of India's largest business group, with revenues of *\$70.8billion*

- ❑ Tata companies together employ some *3,63,000 people*.

- ❑ Operations in more than *80 countries across* six continents,

- ❑ *Export* products and services to *85 nations*.

- ❑ The Tata name is a unique asset representing

leadership with trust & Our heritage of returning to society

TATA MOTORS

- ❑ Tata Motors Limited is **India's largest automobile** company
- ❑ Consolidated Revenues of **\$15.4 billion (2008-09)**
- ❑ **Leader in commercial vehicles** in each segment in India
- ❑ **India's 3rd largest passenger vehicles** manufacturer
- ❑ World's **3rd largest medium and heavy commercial** vehicle manufacturer
- ❑ **World's 2nd largest bus** manufacturer.
- ❑ **2,000 touch points** in India
- ❑ **24,000 employees**



SFC 407 Turbo Truck
Unmatched for its performance and versatility



SFC 407 Turbo Mini-bus
Powerful passenger vehicle for any terrain



LP 407 Turbo Mini-bus
Well-styled, spacious passenger vehicle



SK 1613 C Turbo Tipper
An efficient tipper for construction and mining



LP 709 E Turbo Bus
Powerful, spacious vehicle for multiple applications



Tatamobile 207 - Pick-up
Ideal for small businesses and family travel



SE 1615 C Turbo Heavy-duty Truck
Powerful and stable truck for off road heavy duty application



LPT 2515 C Turbo Truck
Cost-effective means to transport heavy cargo



LPT 808 Turbo Truck
A versatile truck for any road or terrain



LPT 709 E Turbo Container Truck
Useful for distribution of a variety of goods



TATA Motors



SA 1212 Turbo Truck
Four-wheel drive to negotiate difficult terrain



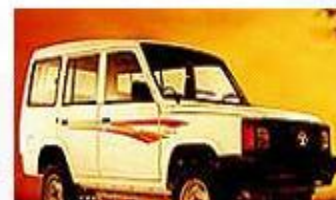
LPT 1100 Turbo Truck
With a high deck for bulky loads



SK 1615 C Turbo Heavy Duty Tipper
Powerful tipper for increased productivity



LPS 3516 C Turbo LPG Tanker
Efficient and powerful motor trailer for transporting



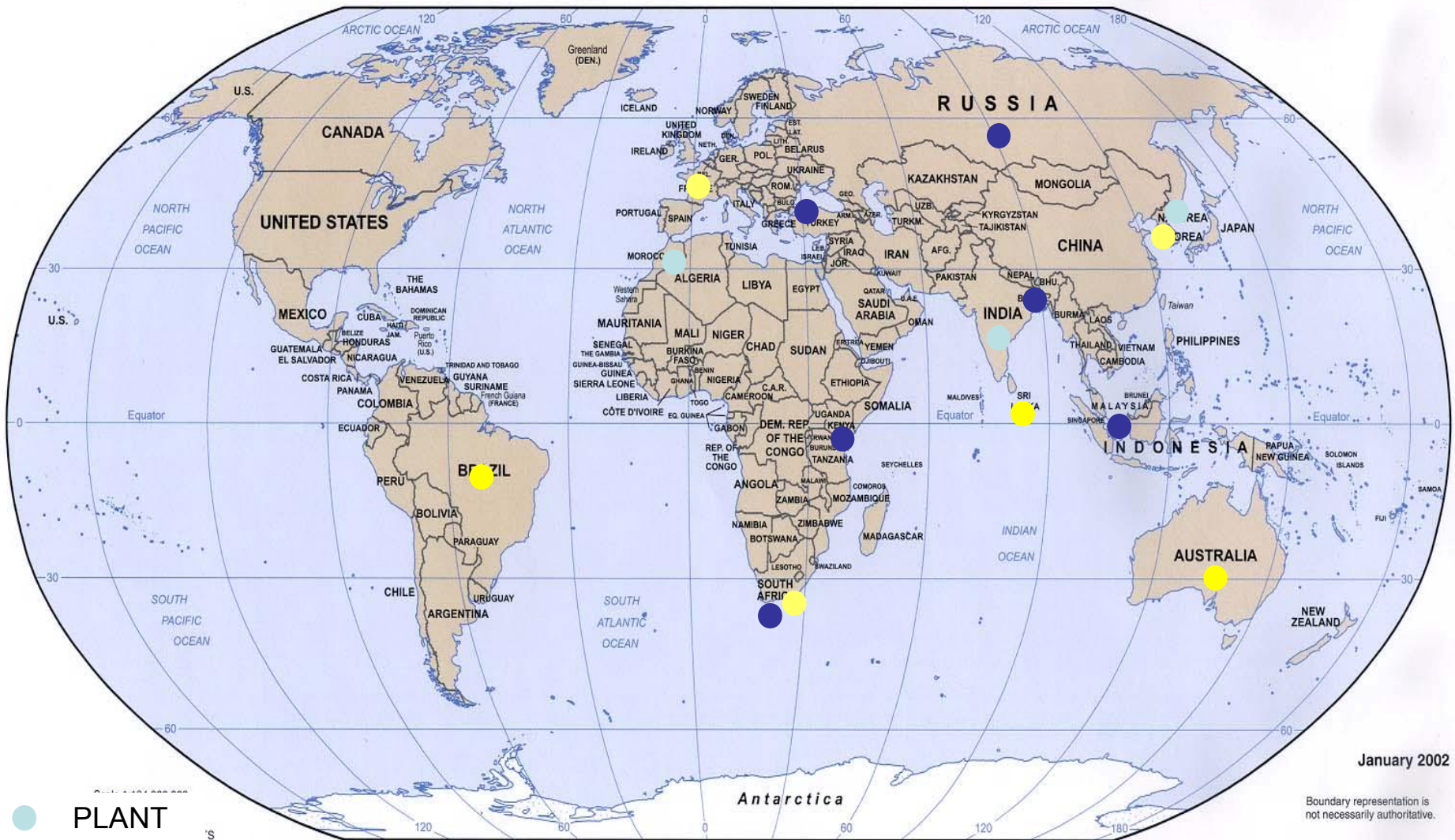
Tata Motors – Indian MNC

- ❑ ***First*** Indian Engineering Company to be listed in the ***New York Stock Exchange*** (Year 2004)
- ❑ Acquired the ***Daewoo Commercial Vehicles*** Company, Korea's second largest truck maker (Year 2004)
- ❑ Acquired Hispano Carrocera, Spanish bus and coach manufacturer (Year 2009)
- ❑ Joint Venture with Brazil-based Marcopolo for Bus body Building (Year 2006)
- ❑ MOU with Fiat for vehicle sales & manufacture
- ❑ 2008 – Acquired Jaguar & Land Rover





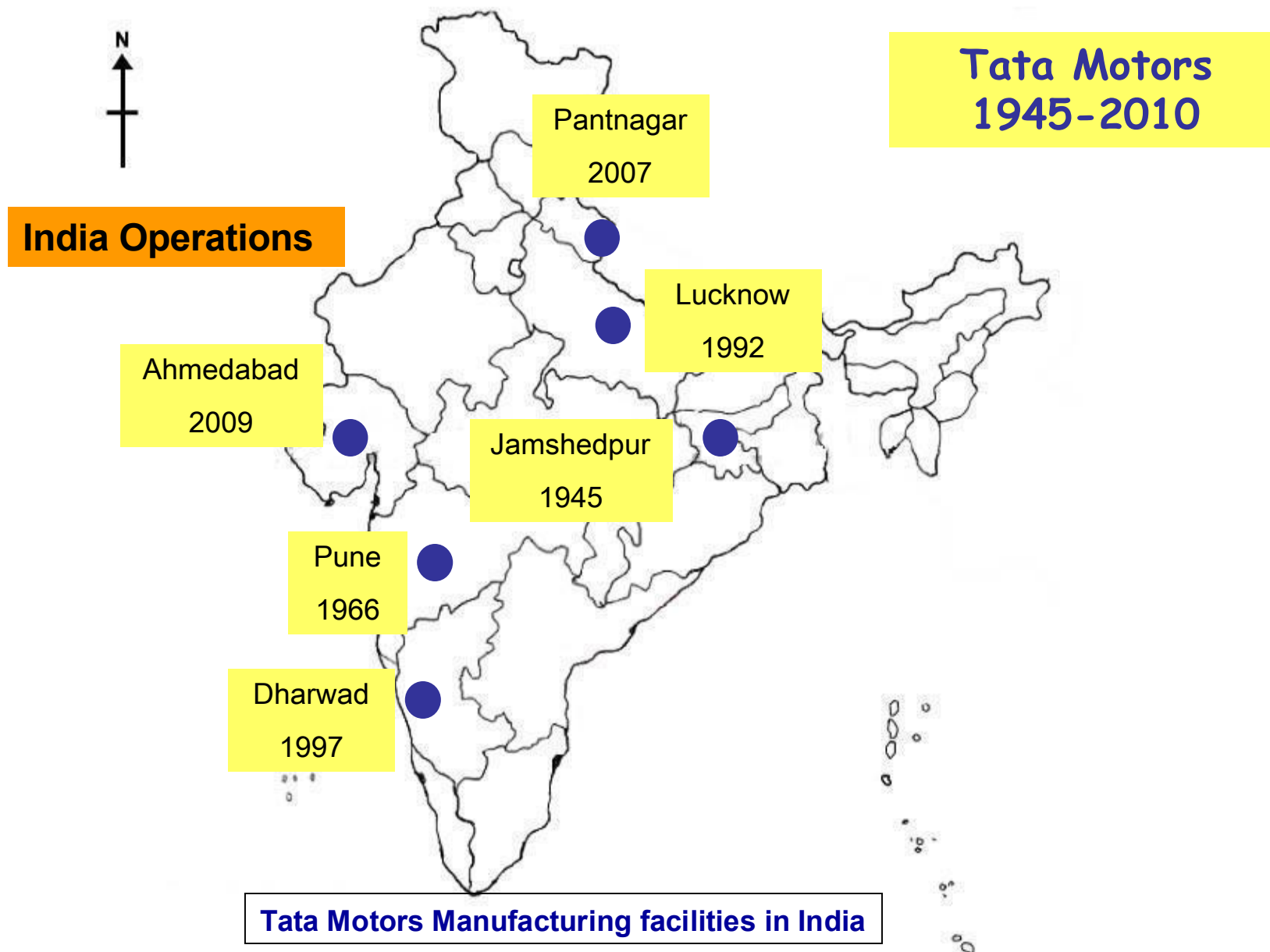
Tata Motors – Global Footprint



January 2002

Boundary representation is not necessarily authoritative.

802804AI (R00352) 12-01



Energy conservation at TATA MOTORS

Energy Conservation

Policy

EC Act 2001

National Energy Policy

Renewable Energy policy

Monitoring Agency

Bureau Of Energy Efficiency (BEE)

Incentive , Taxation , Award

Encouragement

Government

Ministry of Power

Declare the Policy

Team Formation

Implementation

Monitoring

Industries

Energy Conservation Team at TML Pantnagar



Reduce
Recycle
Reuse



Tata Business Excellence Model

Strategy Level

Vision, Mission, Core Value
Strategic Direction, Leadership System

Business
Process Level

Framework of Process
(Enterprise Process Model - EPM)
21 Top Level Processes (Level 1)
Define Business Processes
(Enterprise Processes & Sub Processes Manual)
104 + Sub processes (Level 2)

Implementation
Level

Physical Plant, Machinery, Facilities &
Computer Hardware, Software & network
(Level 3)

Since 2006

TATA MOTORS

Pantnagar

TATA MOTORS, PANTNAGAR



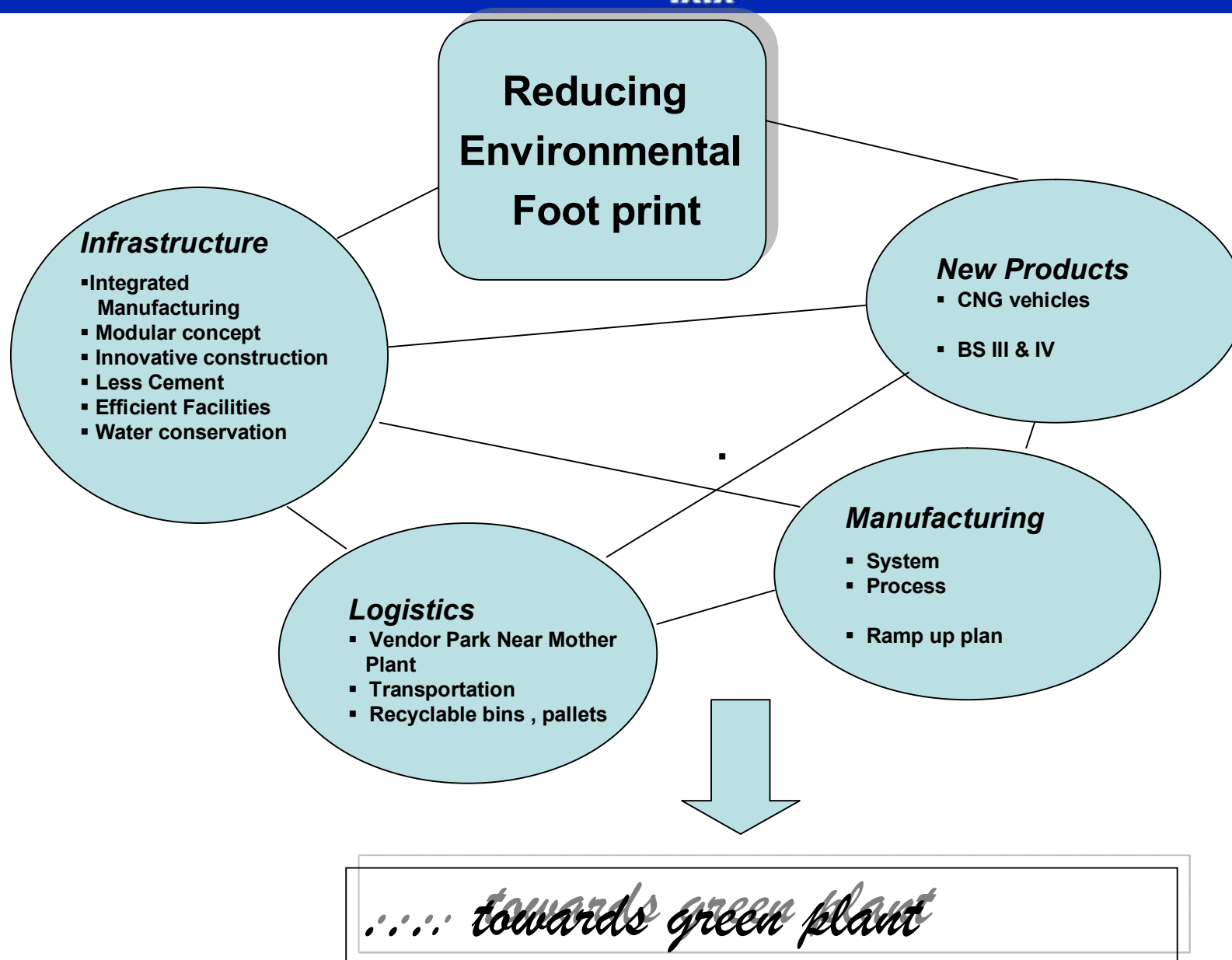
TATA MOTORS, PANTNAGAR

“ Tata Motors ’ 5th and youngest plant. Time from acquisition of land to start of production was in 11 months; a benchmark in the auto industry.

“ Tata Motors Pantnagar received IMS (Integrated Management System) certification in 1st, 18 months of operations.

(Including ISO TS:16949, OHSAS 18001, ISO 14001).

“ Tata Motors ’ 1st plant with an integrated vendor park, to keep inventories low and to ensure supplies JIT.



Strategy - To reducing Environmental Footprint

Infrastructure

Actions :

- ☐ To reduce **30% Steel** for building structure
- ☐ **Modular concept**
- ☐ To reduce heat load on ventilation by installing **Double insulated side and roof walls** .
- ☐ To reduce illumination load by installing **Sky light sheets**
- ☐ To install **energy efficient motors** for **blowers, conveyors**
- ☐ To install **Screw chillers for AC system**
- ☐ **VFD for Compressor and all High powered motors**
- ☐ Servo controller for Compressed Air Supply .
- ☐ **Fan less cooling towers** for compressor
- ☐ **Propane for process heating**, instead of conventional fuel e.g. HSD/LDO/FO
- ☐ **Use of natural resource Artisan wells**
- ☐ **CFL Lamps, Solar Lamps, Wind Ventilators**
- ☐ **Lakes & Rain water harvesting**

Logistics

Actions :

- ☐ **Vendor park near the mother plant** to reduce inbound transportation
- ☐ Out bound Transportation - **Railways**
- ☐ Transportation internal & employee transport

Manufacturing

Actions :

- ☐ **Efficient Washing Machines**
- ☐ **Inter Shop Conveyor**
- ☐ **Friction roller conveyor**
- ☐ **“Wet on Wet”** Painting process
- ☐ **Process Optimization**
- ☐ **Power & Free Conveyor**
- ☐ **Electrified Monorail System**
- ☐ **CNC Machines**
- ☐ **Reuse, Recycle, Reduce process waste**

New Product Introduction

Actions :

- ☐ **CNG Vehicle**
- ☐ **Fuel Efficient Vehicle – with Start-Stop arrangement**
- ☐ **Adherence to emission norms**

Infrastructure

Innovative Construction

❑ To meet the production ramp up a Modular concept & Pre fabricated steel structures are used

❑ 30% steel & 15 % cement less used

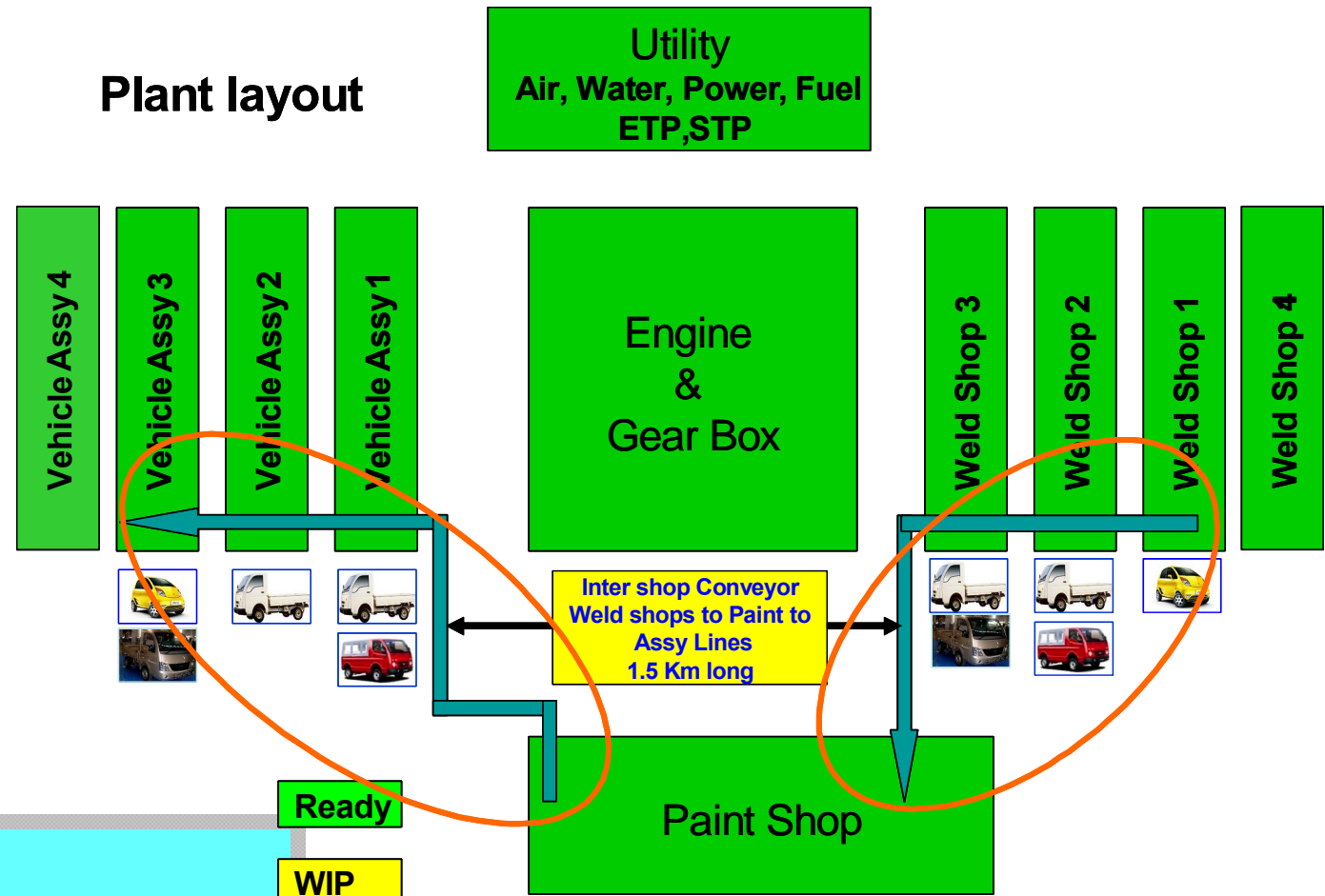
Hence reduced environmental impact during production of parts



Infrastructure

**Modular
Concept**

Plant layout



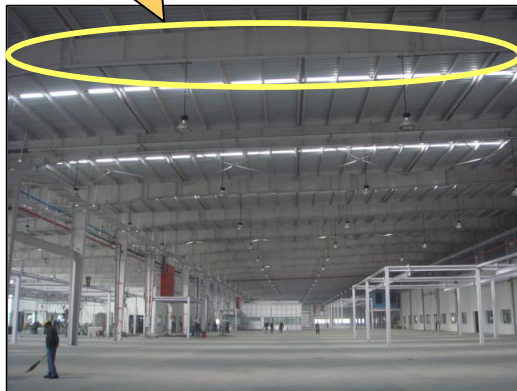
- ☐ Phase wise shops in sets
- ☐ Fast production Ram up
- ☐ Less inventory

Hence reduced environmental impact during production of parts

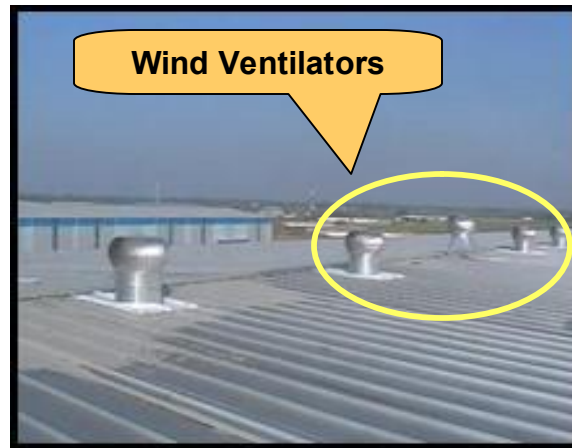
Infrastructure

Use of Renewable Energy

Day light Transparent Sheets



Wind Ventilators



Solar street lamp

Advantages:

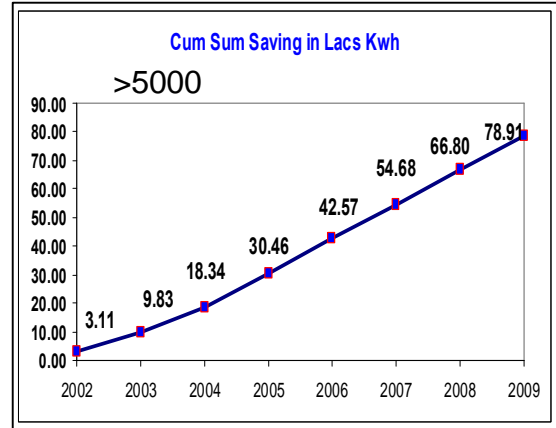
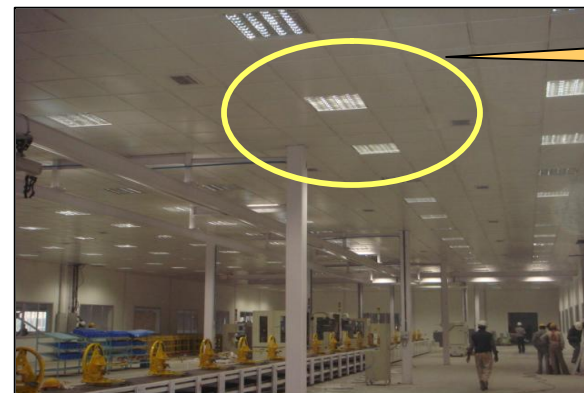
- 1 Installed at Strategic Locations
2. Illumination at emergency



CFL Tube lights

Advantages:

- 1 40% Energy saved
2. Illumination uniform & better
3. Load on Air Conditioning reduced
4. 43200 KWH per year saved



- ☐ Wind Ventilators, Day light sheets
 - ☐ Double insulated sheets for wall & roof
 - ☐ Solar Street Lights
 - ☐ CFL Lamps
- Hence reduced environmental impact

Infrastructure

Efficient Facilities



**Screw Compressor
With VFD Savings 250 MWH/Yr**



Servo Control Valve



Fan less cooling tower

- ☐ Screw Compressor with VFD
- ☐ Servo controlled Compressed Air
- ☐ Fan Less cooling tower

Hence reduced environmental impact during production of parts

Strategy



Reducing environmental foot print

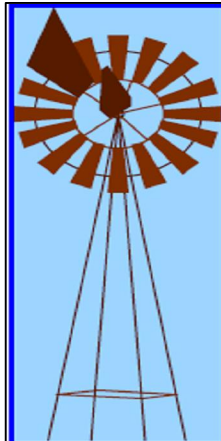
Natural Resource

Efficient Facilities
Water conservation

5% Reduction of
Power Consumption for
ETP Water Pumping

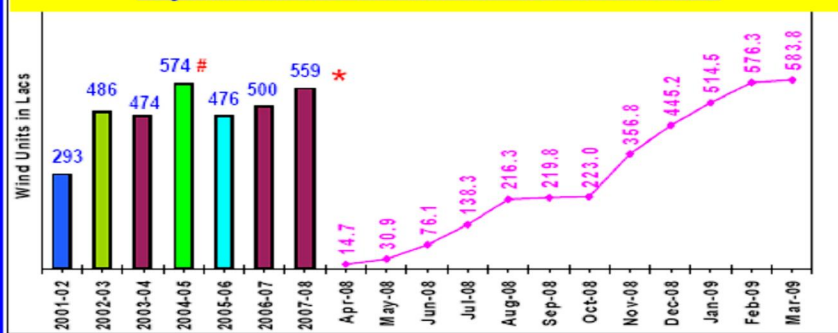


Solar Water Heating for Canteen



WIND POWER PERFORMANCE

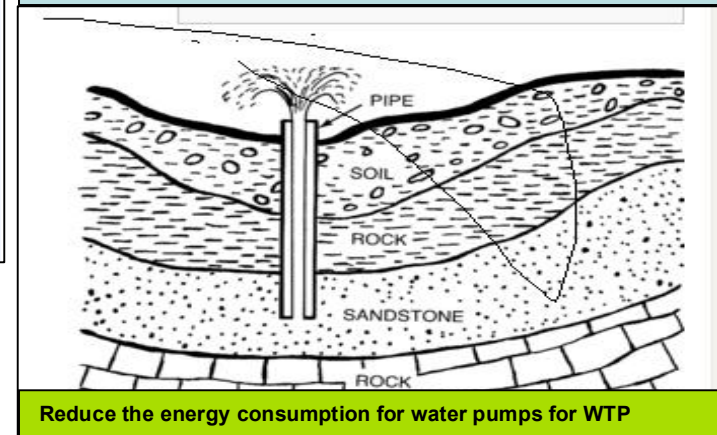
Target for Year 2009-10 Wind Power - 590 Lacs Wind Units



Since 2001

3945.8 Lacs Wind Units

The Artesian well is Supplying Raw water to WTP with out power



Reduce the energy consumption for water pumps for WTP

Saving - 150 KWH/day

☐ Use of Natural Resource

Hence reduced environmental impact

10 May 2010

TATA MOTORS

.... towards green plant

Manufacturing

Process



Propane – Clean Fuel



Hot surface insulated by glass wool
6 to 8% energy saving , ROI is 6 Month

☐ New Technology at Paintshop

3C1B Process, Direct Heating, RTO (Regenerative Thermal Oxidizer) for incineration of thinner / fumes

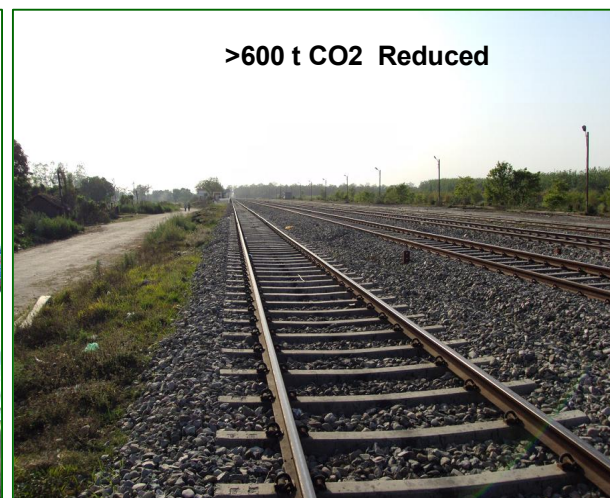
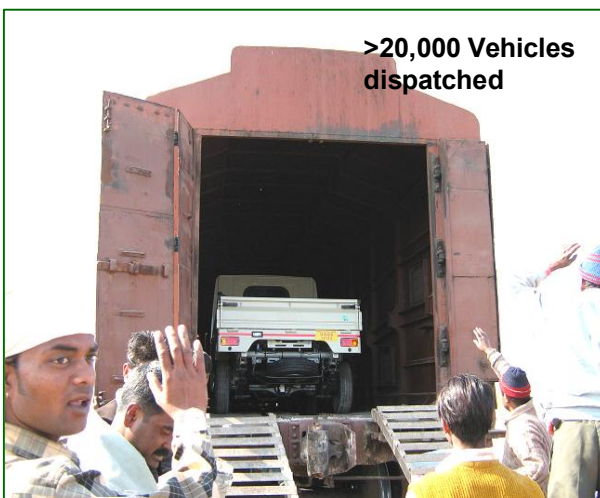
☐ Reduced heat loss by providing insulation



Logistics

Transportation

Reduce environmental Impact of transporting finished vehicles



- ❑ Finished Goods Transport by Railways
 - ❑ Transport facility to Employees,
 - ❑ Internal Shuttle
- Hence reduced environmental impact

35 t CO2 Reduced /Year
Entry for 100 Vehicles / day restricted

New Products

Innovative Products



ACE CNG



Magic CNG



ACE -Fuel Efficient

☐ Worlds Lowest Priced Car

☐ CNG Vehicle, New Efficient Products

Our Journey

Innovation

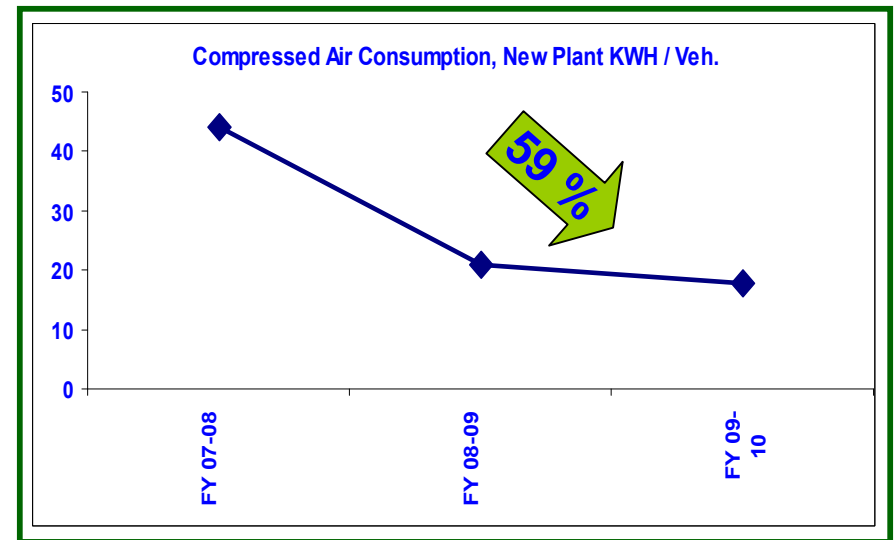
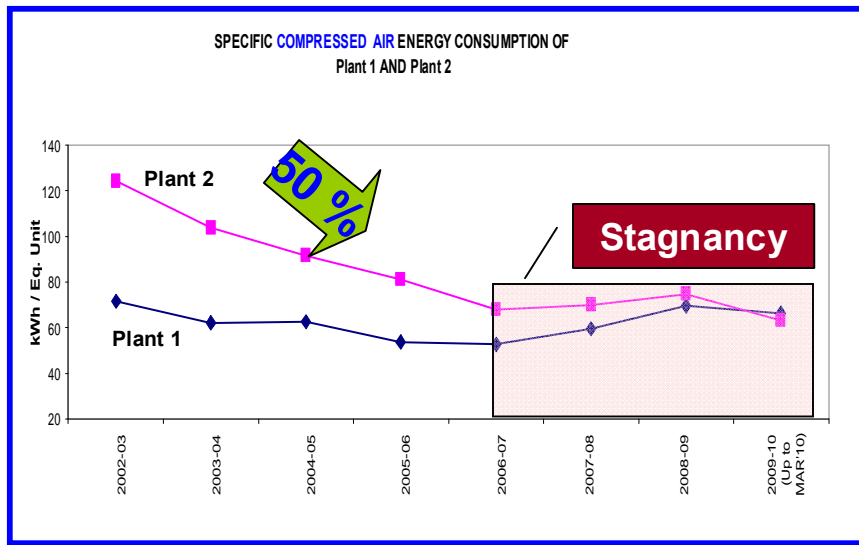
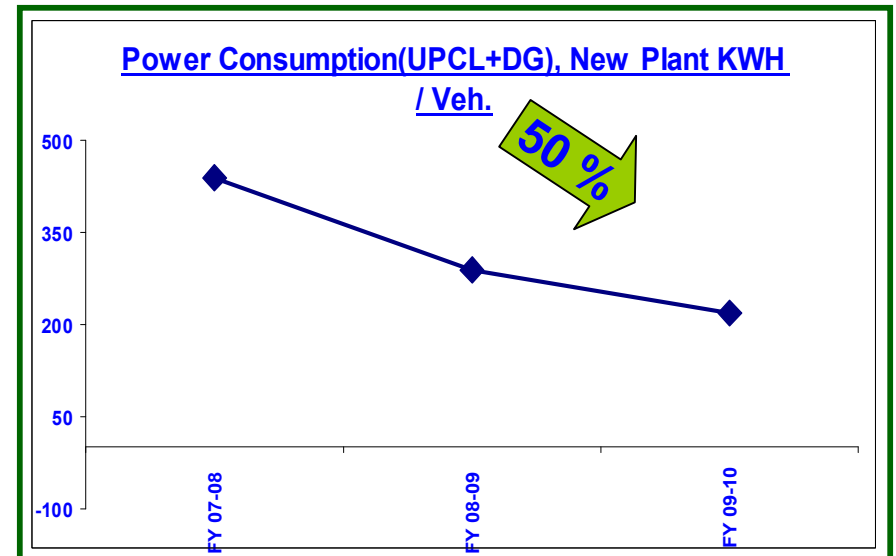
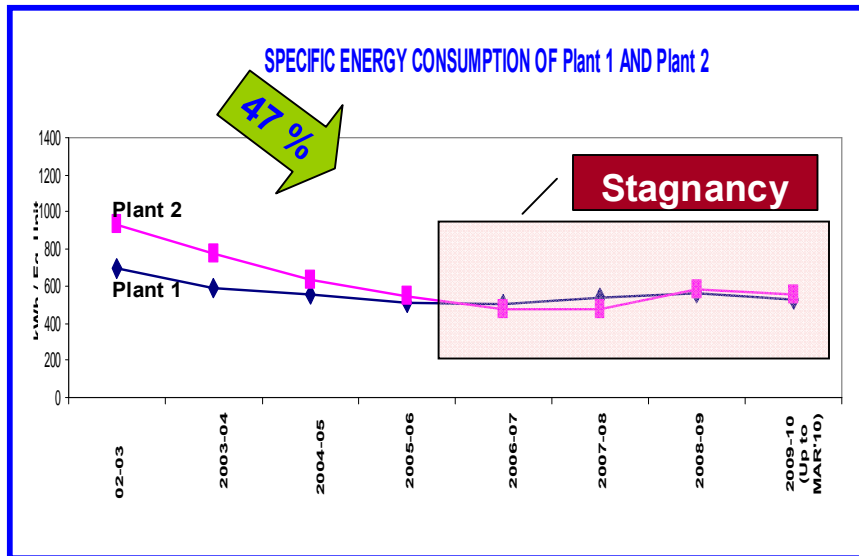
Use of New Technology

Use of God Gift

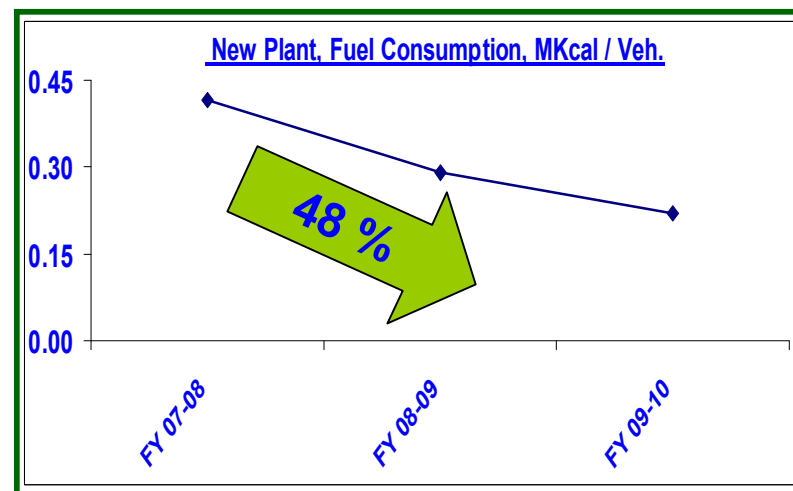
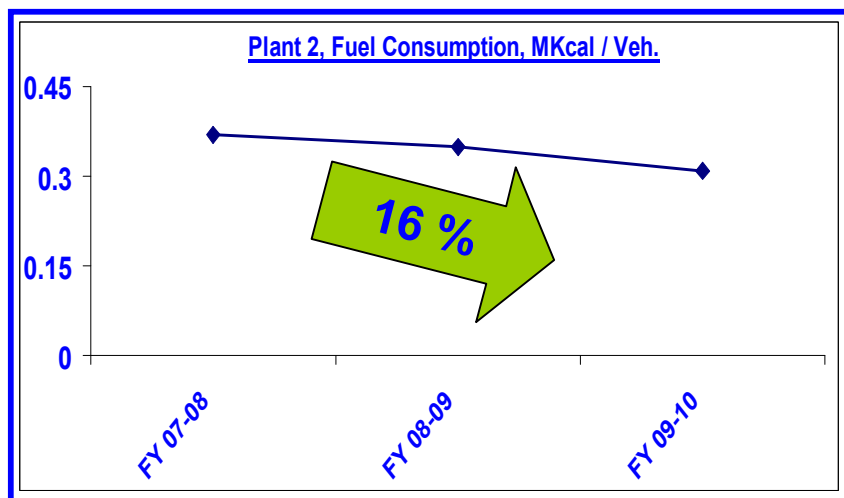
Process improvement or Efficiency Improvement

Loss Elimination

Specific Consumption Trend



Specific Fuel Consumption Trend in Million KCal / Veh.

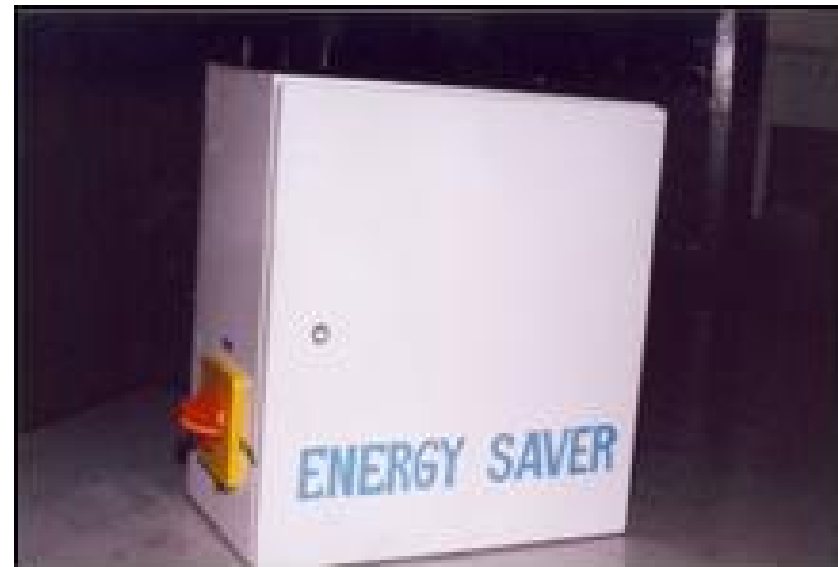


Case Study - 1

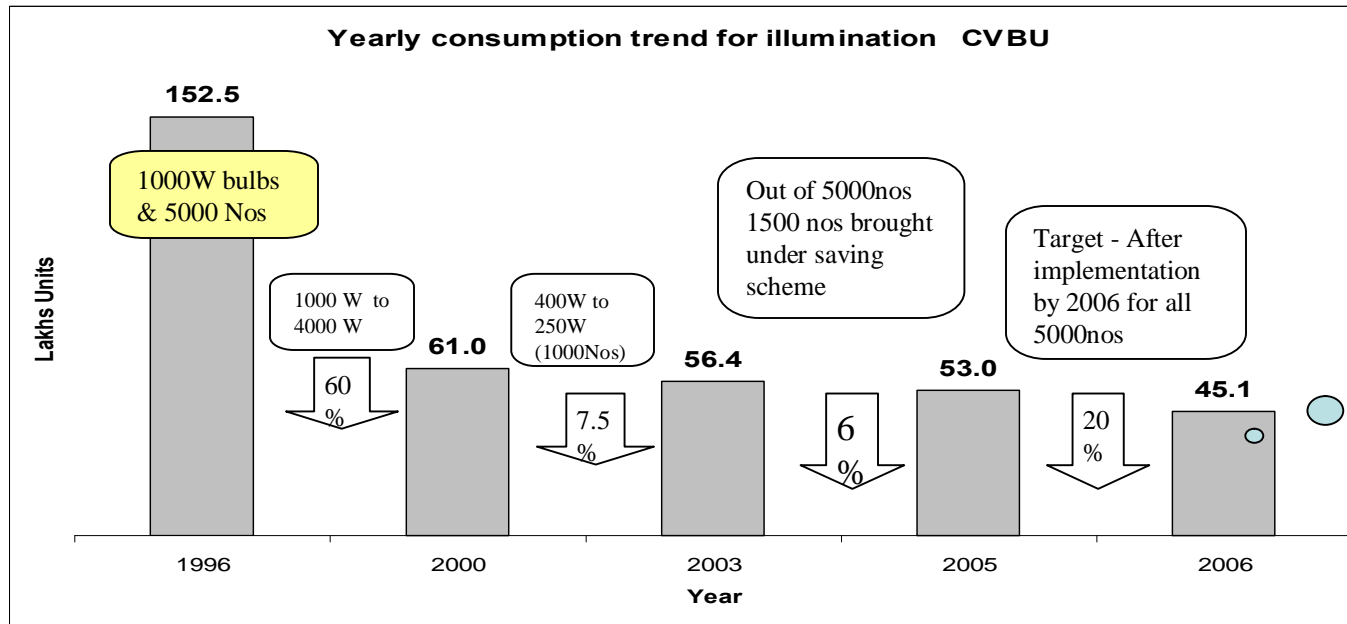
Patent

Theme: Reduce Energy Consumption in Illumination





Patent No – 203430 – Energy saving Device for High Pressure Gas Discharge Lamp



Theme: Use of New Technology & Innovation to reduce energy consumption

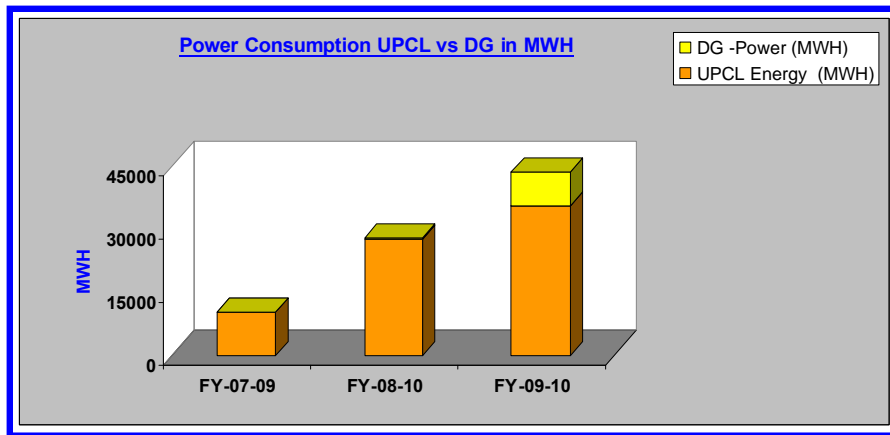


What Next?

Picture/ sketch/ drawing before modification	Picture/ sketch/ drawing after modification
 	 

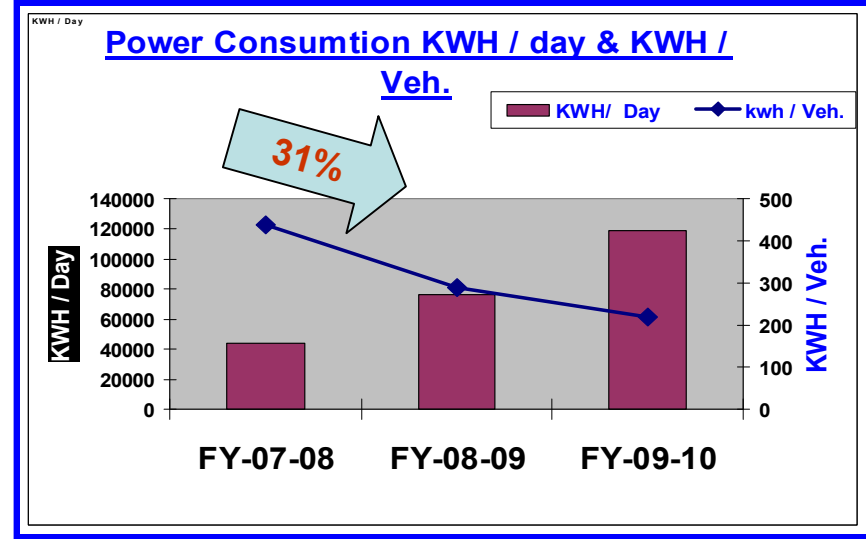
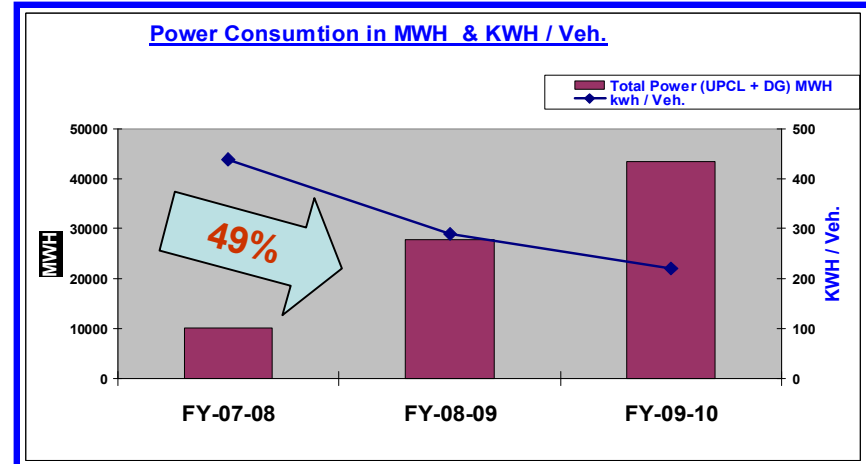
Case Study - 2

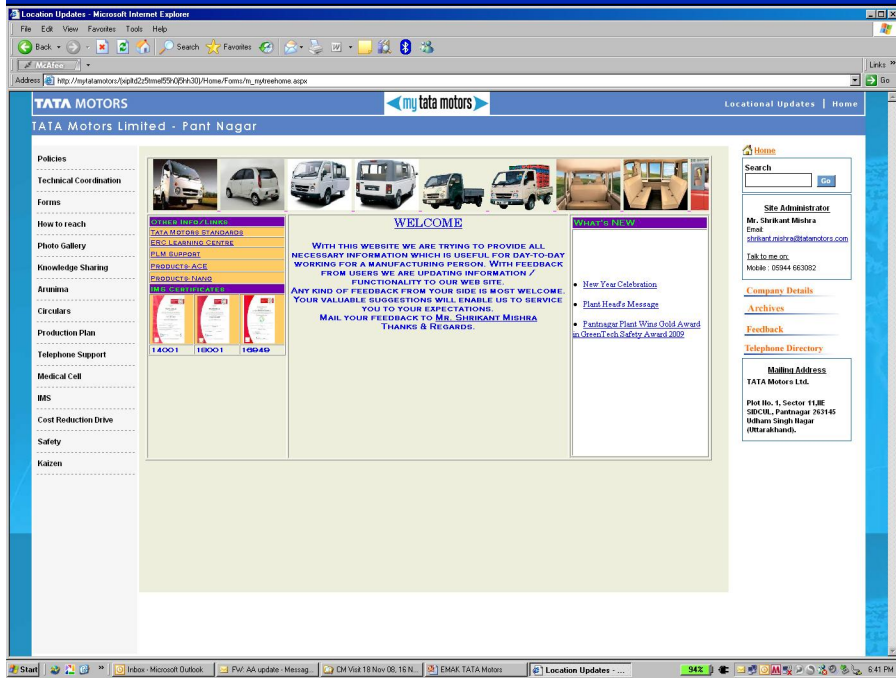
Result



FY07-08	FY08-09	FY09-10
DG Power Nil	DG Power 1%	DG Power 18%

Year	Rs / KWH
FY-07-08	3.52
FY-08-09	3.66
YTFY-09-10	4.50



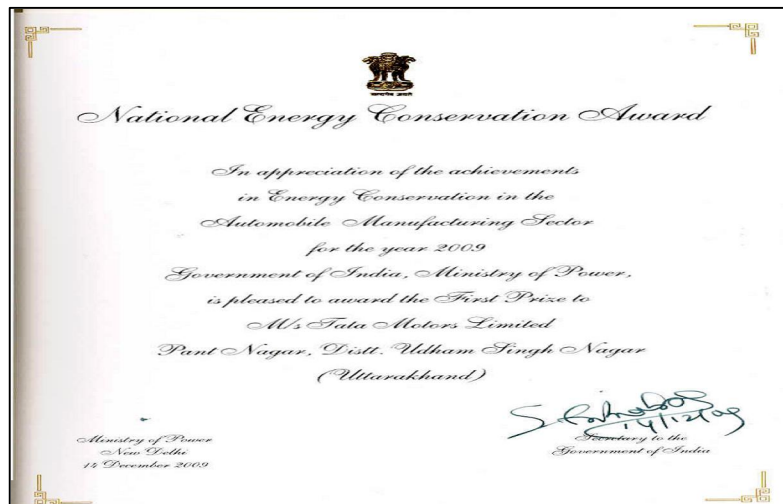


Sharing Best Practices

1. Intranet Site
2. Cross Locational Team
3. Knowledge Book
4. Innovision . Tata Motors Level
5. Innovista . Tata Group Level



National Energy Conservation Award - 2009 (1st Prize in Automobile Sector)



Achievements in the field of Energy Conservation

- ✓ 2009 . TML Panthnagar - National Energy Conservation Award BEE, 1st Prize in Automobile Industry
- ✓ 2008 - TML Pune . Excellence in Energy Management . CII
- ✓ 2006 - TML Pune . Excellence in Energy Management . CII
- ✓ 2005 - TML Pune . Excellence in Energy Management . CII
- ✓ 2004 - TML Pune . Excellence in Energy Management . CII
- ✓ 2004 - TML Pune . Excellence in Water Management . CII
- ✓ 2003 - TML Pune . National Energy Conservation Award BEE, 2nd Prize in Automobile Industry

Reducing environmental foot print

TATA MOTORS PANTNAGAR

..... towards green plant

5M USD