

## Corporate Social Responsibility Report 2005-06



 **Ashok Leyland**



HINDUJA GROUP



*There are no  
passengers on  
Spaceship Earth.  
We are all crew.*

Marshall McLuhan,  
1964

## FOREWORD

In recent times, every year has brought with it unprecedented climate disruptions - distress calls from planet Earth. These are warning signals for humanity that we can ignore only at our peril. Economic growth has been accelerating, bringing closer the ecological disasters these signals portend. The only way ahead is to find new growth models and technologies that promote resource conservation, re-use and energy efficiency.

At Ashok Leyland, we believe the scope for action is vast, matched by the potential ecological benefits as also unit-level economic benefits. This is borne out by our efforts to reduce the environmental footprint of our activities, be it reduction in energy consumption per truck or waste generation or rainwater harvesting or afforestation.

We have also been steadily raising the bar, setting higher goals for environmental performance and enlarging the scope of initiatives. This stems from the realisation that our environmental responsibility does not end with product delivery. Going beyond development work on alternate fuels and employment of ecologically responsible manufacturing processes, our revenue-neutral driver training centres, in-situ mechanic training and awareness/emission campaigns are some of the post-sale activities that have been on for over a decade.

This report represents some of the activities taken up in 2005-2006. One of them is a lifecycle assessment of our products. This first ever study of its kind in the country, is sure to broaden our understanding of the environmental footprint of our vehicles and drive us onto greater environmental responsibility.



**R Seshasayee**  
Managing Director



## ENVIRONMENT

### Raising the environmental performance bar

In 2003-2004, the Green Shield award was introduced to supplement the ISO 14001 Management System implemented in all the manufacturing units to help achieve better environmental performance.

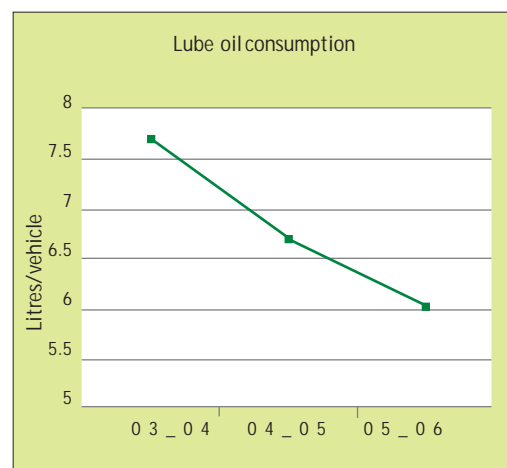
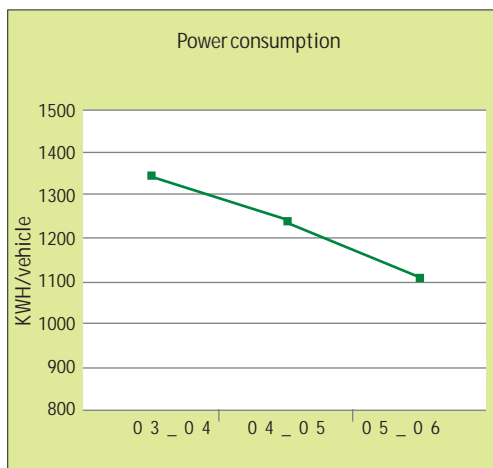
While the Alwar unit won the award the first two times, it was third time lucky for Ennore. Appreciating the Unit's initiatives in reducing the usage of wood and the contribution of Quality Circles in energy consumption reduction, Mr Sinha Roy, the auditor for the awards said, "The go-getter attitude of the Ennore personnel has to be appreciated. It shows in their penchant for winning outside competitions on energy and environment".

The performance criterion for winning the Green Shield award has been broadened and raised to include new areas for assessment. Areas such as 'reduction in use of toxic material', 'participative environmental management', 'joint efforts with neighbouring communities' have been added to make the standards more expansive. The parameters for performance have also been made steeper: in areas like 'recycling/reusing' and 'hazardous waste generation', the units need to achieve at least a 25% reduction to be eligible for even the minimum points. While in areas like 'reportable accidents' it is even steeper, requiring at least a 50% reduction from the previous year's figures.



*B M Udayashankar, ED-Manufacturing, (right) receives the Green Shield Award (2005-06) from R Seshasayee, MD.*

*The performance criterion for winning the Green Shield award has been broadened and raised to include new areas for assessment.*





## ENVIRONMENT

### Innovation in Safety, Health and Environment

Ashok Leyland's Hosur II unit recently won the 'CII - Leadership and Excellence Award for Innovation in SHE Performance 2005' for two innovative projects:

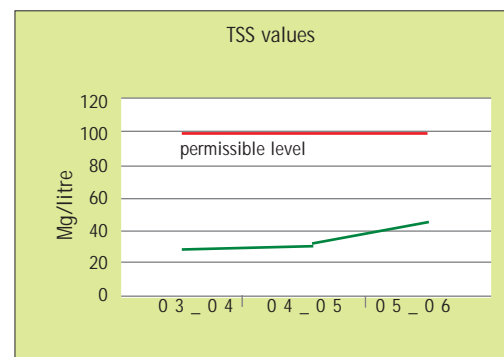
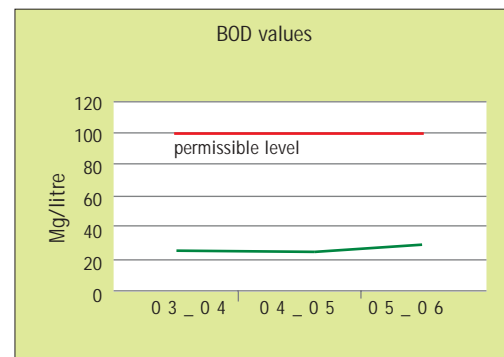
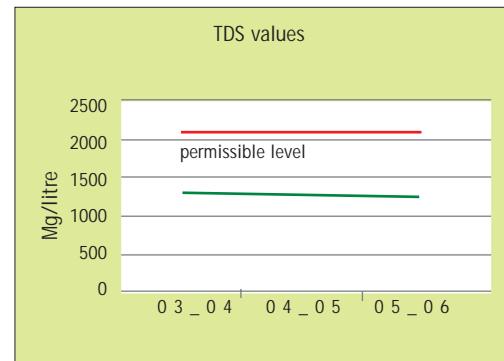
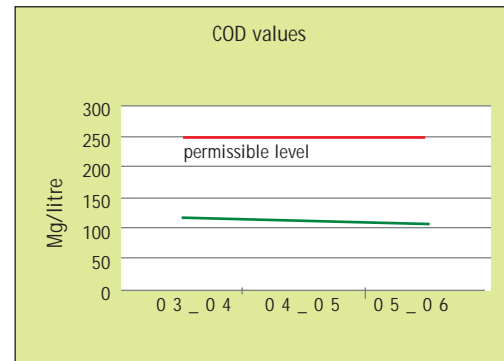
*(i) protecting flora and fauna in rainwater harvesting ponds*

As a practice, rainwater-harvesting projects have been implemented extensively to improve the ground water table and the saved water used during summer to prevent depletion of ground water. Over the years, two artificial ponds with 40,000 KL and 10,000 KL capacities and a check dam of 30,000 KL capacity have been created at the unit.

As water is available round the year in these water bodies, a rich variety of flora and fauna flourish around these ponds.

During the heavy downpours in end-2005, the ponds filled up and overflowed. After the rains, the living organisms in the ponds, including the fish, were found to be dying in large numbers. Extensive analysis of the reasons was carried out in coordination with a few Governmental agencies. The root cause was found to be an increase in the 'Biological Oxygen' demand due to sudden changes in atmospheric conditions accompanying the downpours - a serious threat to the living organisms in the water.

As a solution, a chemical called Nualgi was used to increase the Oxygen content in the water and the problem was solved.





## ENVIRONMENT

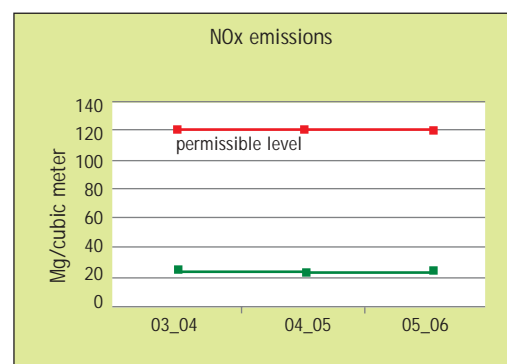
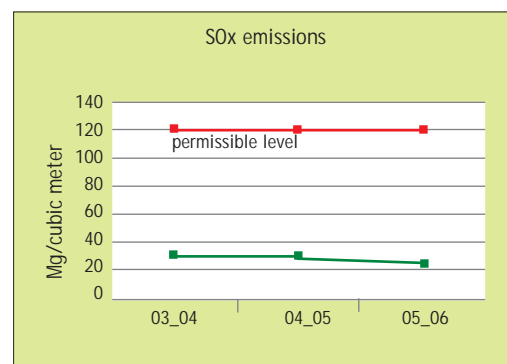
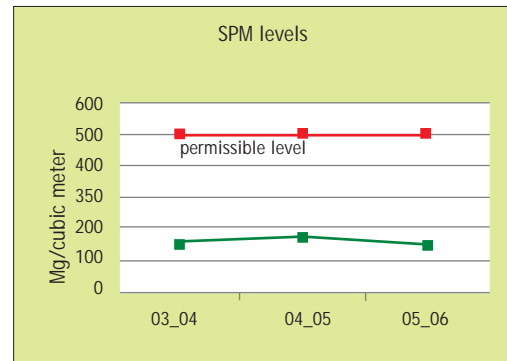
### *(ii) reducing usage of ozone depleting substances*

The Electro Deposition Paint Bath used at Hosur II holds about 65,000 litres of water-based paint and has to be maintained at 26°C to 29°C at all times. Any increase in temperature beyond these values will disrupt the properties of the paint, which could lead to coagulation. So, to maintain the recommended temperature, two chiller units are used. And as all conventional chillers go, these units run on R22 gas, an Ozone Depleting Substance, some of which enters the atmosphere.

The unit environment cell took it upon themselves to find a way to reduce use of R22 gas. That led to a group of minds questioning the very idea of the constant running of these units.

The temperature requirement of the ED paint bath is around 26°C to 29°C. And in Hosur, the temperature for most days in a year is below 22°C. "Why not use the natural temperature to cool down the ED paint bath?" they thought and implemented the idea, thus eliminating the load on the chiller during non-production hours. This has not only reduced the utilization of R22 but has also resulted in large power savings.

Proof, if at all needed, that ecology and good business can go hand in hand.



*Utilizing the natural temperature to cool down the Electro Deposition paint bath has reduced operation of the chillers – and the usage of the Ozone depleting R22 gas.*



## RESOURCES

### A responsible neighbour at Bhandara

In an acutely water-starved region, Ashok Leyland's Bhandara plant is a celebrated success story. Active implementation of water conservation and ground water recharging practices have helped the Unit "keep head above water".

In 2005-2006 alone, two additional ponds have been developed to collect rainwater. The terrain of the factory has been considered in developing these ponds that charge the underground aquifers during the rainy season so that the monsoon replenishes the water table every year.

The first pond uses the natural terrain of the area to collect rainwater from the nearby catchment areas to store a maximum of 2,700 cubic meters of water. The second pond can hold 900 cubic meters of water. Fed by storm water drains from across the Unit, any overflowing water from the pond is diverted

into the 1,80,000-tree-strong plantation in the Unit. Further, the percolation of water from the pond into the ground ensures a higher water table in the area, which irrigates the trees.

Efforts are also underway to build a lake for storing roof water run-off near the administrative block. When completed, this will enable meeting the total Unit requirement of water within the premises itself, thereby eliminating the need for drawing water from the nearby Wainganga river. The farmers and residents nearby would thank Ashok Leyland, Bhandara for that.



*The percolation of water from the pond into the ground ensures a stable water table in the area, positively impacting the growth of trees.*





## RESOURCES

### Using Reverse Osmosis for reduction of coolant consumption

Coolant oil used in machining operations generate effluents. Over the years, we have sought to reduce effluents at the machining stage itself.

The problem with coolants is that they have to be replaced periodically. Otherwise, due to the growth of microorganisms, a bad odour emanates. For health and comfort reasons, such coolants have to be discarded frequently.

This is where the concept of Reverse Osmosis (RO) came in handy. RO is a process by which water is forced through a semi-permeable membrane to remove dissolved solids. Applying the same principle, the dissolved solids in the water were removed, thereby increasing the useful life of the coolant.

A RO unit has been set up which feeds the coolant mixing areas with treated water and thereby reduces the need for frequent coolant replacement. Further, the washing machines that are used to clean the components also consume less water, as the amount of water required for effectively removing the dirt is lesser.

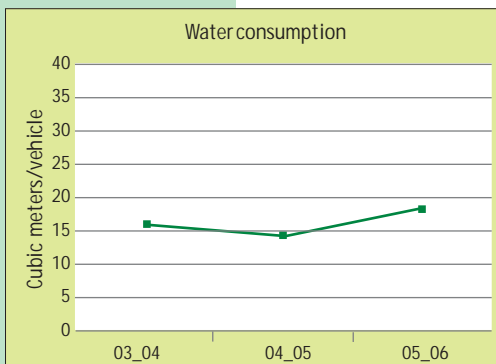
**RESULT:** The change-over time for the coolant has reduced from 15 to 45 days, saving 655.17 litres per month.

Not stopping with that, plans are afoot to use the RO reject water in secondary applications like toilet flushing and floor washing thereby further reducing effective water consumption.

*Owing to the increase in plantation and greenery, the fixed water consumption has increased. Efforts are underway to reduce this requirement by creating more rainwater harvesting lakes in house.*

***A Reverse Osmosis unit has been set up and feeds the coolant mixing areas with treated water, thereby reducing coolant consumption.***

*RO plant at shops*



## RESOURCES

### No more wood in stillages

At Ashok Leyland Hosur I, total wood consumption during 2005-2006 was more than 100,000 cubic feet. Out of this total consumption, close to 20% was used in making wooden 'stillages' used for packing engines to be transferred to other units. Cutting down this consumption became the goal.

After analyzing various options, reusable and returnable steel stillages were decided on. Factors like optimizing the size of the stillages, improving the engine loading layout in the truck and effective use of vertical space in a truck were also taken

into account while designing the stillages. Further, it was also found that two-tier steel stillages helped more in effectively utilizing the vertical space in a truck.

Carried out with an investment of about rupees four million the project involved extensive field trials and some changes in the stillage design before it could be made fully operational. Today, usage of wood for transfer of engines to other units has been fully eliminated, saving wood to the tune of 43,610 cubic feet. That's like planting more than 1,200 trees!



*Two-tier stillage:  
16 engines per truck.*



*Today, usage of wood for transfer of engines to other units has been fully eliminated, saving wood roughly equivalent to some 1246 trees.*





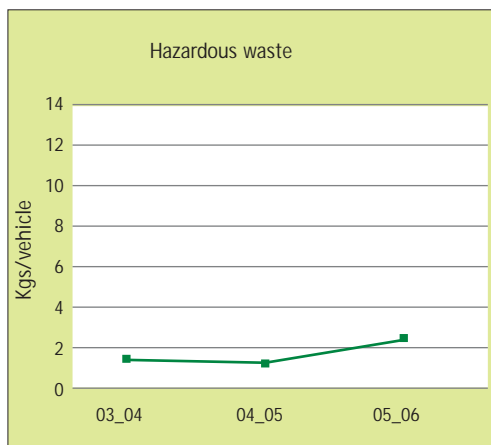
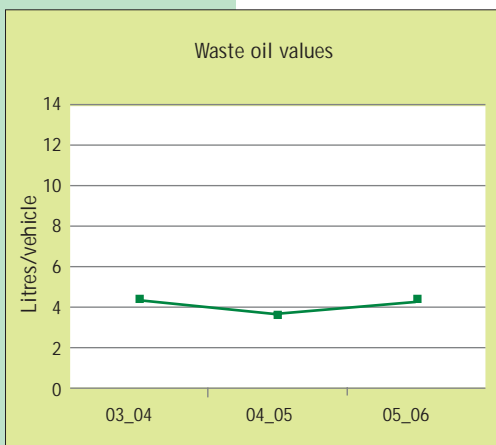
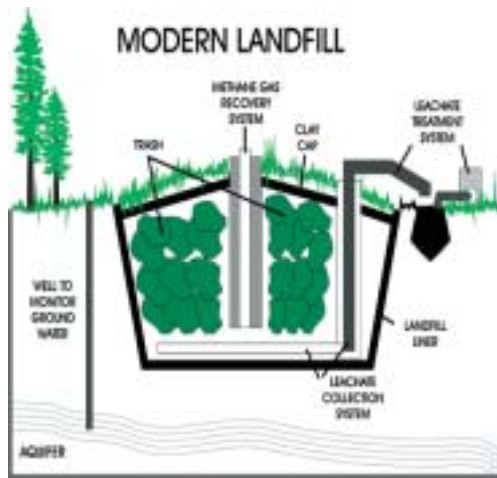
# WASTES

## Coming Up: an exclusive hazardous waste landfill

Dangers posed by hazardous waste to the environment and the importance of handling such waste with utmost care can never be overstressed. At Ashok Leyland, we are totally sensitive to this issue and hence leave nothing to chance, especially when it comes to safe handling and storage of the two types of wastes that are classified 'hazardous' – oily and paint waste.

Storage areas with proper ventilation, banded and cemented flooring, fire hydrants and appropriate fire extinguishers are available to store these wastes - safe and away from the environment. But then, we realize that this is not a permanent solution. A scientifically designed secured landfill complete with leachate liners and monitoring facilities would be an alternative. But such a solution is not available anywhere in Tamilnadu.

Ashok Leyland has taken upon itself the task of constructing a secured landfill site within its own premises at Hosur, at a cost of Rs five million in an area of 3,000 sq m. This landfill is being designed and commissioned by an expert who was previously associated with the National Environmental Engineering Research Institute (NEERI). Preliminary tests like waste compatibility tests, soil suitability and resistivity tests have been completed and construction is scheduled to start very soon. This landfill will cater to the accumulated wastes and also provide enough capacity for the next five years.



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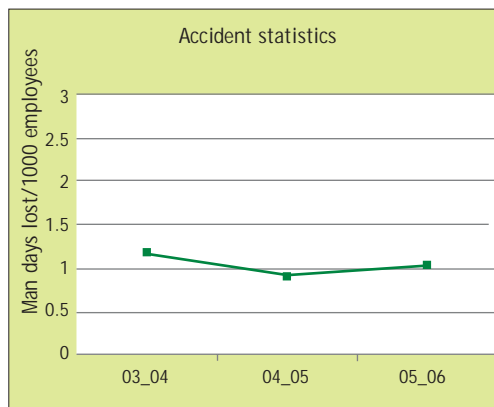




## SAFETY AND HEALTH

### Greater emphasis on Safety and Health

To ensure that safety does not get subordinated to production and to keep safety on the top management radar, an apex level 'Safety Council', headed by the Chief Operating Officer of the Company has been formed. To supplement the efforts taken at the central level, plant Safety Councils have been formed at all the Units, with representation from executives and associates from each department. The EHS reporting format has been changed to include greater emphasis on safety reporting, with mandatory safety targets every month. Further, a centralized audit team has been formed that undertakes an objective audit every three months and submits the findings to the Safety Council. The results of the audits are discussed and targets for improvement set.



As the old adage goes "what is not identified is not controlled" and to ensure that as many unsafe conditions are identified, an extensive 'hazard mapping' exercise has been taken up and is nearing completion. The results of the mapping are being used to improve safety at all locations. As far as improving contractor safety is concerned, many new initiatives like auditing the usage of Personal Protective Equipments among the contract workmen, having a Safety Officer for large contractors and extensive training for all contract workmen have been put in place.

To improve access to safety information and training, an IT portal on safety is under construction. This portal, to be accessible to all employees, will have modules for reporting of incidents and accidents, training modules and general information on safety issues.

While isolated efforts to improve safety are effective in the short term, accident prevention demands a comprehensive system. Towards this, the implementation of an Occupational Health and Safety Management System on lines of the OHSAS 18001, is being accelerated and given impetus. Training programmes to all executives and associates have begun in right earnest and are nearing completion.

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## LIFE CYCLE ASSESSMENT

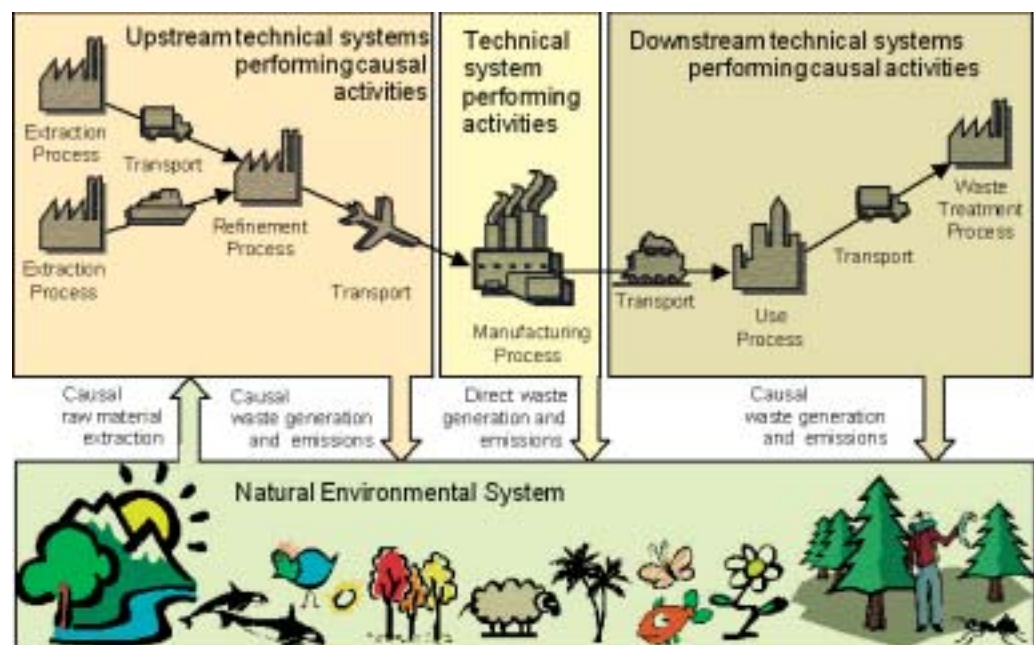
### Life Cycle Assessment at Ashok Leyland

In 2005-2006, Ashok Leyland and the University of Colorado Denver and Health Sciences Center (UCDHSC), USA, initiated a joint effort to explore the use of environmental life cycle assessment (LCA) to facilitate green engineering in India. UCDHSC's Urban Sustainable Infrastructure Engineering Project (USIEP) seeks to expand the use of environmental life cycle assessment tools in South Asia, consistent with Ashok Leyland's corporate objectives that support environmentally-conscious engineering.

Environmental LCA is an analysis methodology that strives to capture the cradle-to-grave impacts of a product or process. The idea is to expand the boundary of the system being studied to include processes that occur both upstream and downstream of the process of interest. Thus, for a car or a bus, the boundary is expanded

from vehicle operation to include fuel production, vehicle manufacture and final disposal (end-of-life). A life cycle approach is particularly important in comparing various fuel-propulsion systems in vehicles. For example, one can compare the lifetime energy use in a conventional diesel bus, a bio-diesel powered bus, a natural gas powered bus versus hydrogen-powered fuel cell buses and can examine the energy needed for fuel production and delivery (wells to pump analysis) as well as operation of the propulsion system (pump to wheels analysis). This way, LCA makes transparent the total impact to the environment associated with the entire life cycle of a product.

LCAs can also help an organization identify the quantum of material present in their supply chain and assess its supply chain vulnerability. Additionally, LCAs can help an organization analyze and improve its





## LIFE CYCLE ASSESSMENT

resource-use efficiency. Higher levels of pollution are often associated with inefficiencies in production, which can be identified and minimized through an LCA. Lastly, information gathered from an LCA can help in reporting and marketing resource efficiency and environmental improvements of a product.

Between November '05, and January '06, Mike Whitaker, a PhD student from USIEP, worked with Ashok Leyland in Chennai to begin the process of life cycle assessment of a Viking 222 bus. Data on bus operations and end-of-life were gathered from both Ashok Leyland as well as the Chennai Metropolitan Transport Corporation. For future data management, recommendations were made on areas like data organization, downstream performance and maintenance data, upstream supply chain data and on the possibility of setting up an industry-wide LCA database.

Ashok Leyland is also working with UCDHSC to conduct a large survey of producers

and consumers in India to determine what environmental impacts are of highest priority for stakeholders in Asia. To use LCA effectively, it is important to determine priorities for the region – whether it is global climate change, local environmental impact, local ecosystem impact or aggregate resource efficiency.

As an environmentally progressive company, Ashok Leyland is attempting to incorporate LCA for environmental impact assessment. The first step is to improve data gathering, management and reporting within the Company. Simultaneously, Ashok Leyland will also work beyond the boundaries of its factories – with upstream supply chain producers and downstream bus operators – to analyze the total impact. Through these efforts and ongoing collaboration with the USIEP program in USA, Ashok Leyland hopes to lead the way for environmental Life Cycle Assessments in India.

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*(If interested, please take the following short survey to convey your priorities in an anonymous survey format: <http://www.surveymonkey.com/s.asp?u=49771905688> The survey will take approximately 15 minutes to complete, no prior knowledge is needed to take this survey and your time will help to begin implementing LCA in India)*

For more information about LCA in India, please contact:

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## SOCIETY

### Driver Training Centre, Burari

Following the success story of its Driver Training Centre in Namakkal and furthering its commitment to safer roads and better drivers, Ashok Leyland has commissioned the Driver Training Institute (DTI), Burari, in partnership with the Government of National Capital Territory of Delhi.

*“To ready a commercial vehicle driver for life on the road - and off the road”* is the mission of this first ever such public private partnership in North India. Operating on a revenue-neutral basis, the Institute runs under an apex governing body called FAITH (Foundation to Assist Inculcating Traffic Habits), constituted by the Government of Delhi.

The DTI is built on 12 acres of land that houses classrooms, an auditorium, a library and a trainees' hostel. It has a 2.2 km

driving track with various road configurations complete with electronic signals, signboards, road markings and streetlights for night driving. Trained instructors impart theoretical and practical training to the drivers. In line with the driving environment and current needs of drivers, practical training and tips on fuel efficiency and handling of hazardous goods are also provided.

Yoga and AIDS awareness are also part of the exhaustive curriculum. To start with, the institute provides a two-day refresher course for heavy vehicle drivers, evaluation of heavy vehicle drivers, PSV badge training programme and a programme on defensive driving and fuel saving. It hopes to add more courses in the future.

*By partnering the Government of Delhi, Ashok Leyland hopes to replicate its Namakkal success at the Burari Driver Training Institute.*





## ENVIRONMENTAL POLICY

We, at Ashok Leyland, are committed to preserving the environment and will

- Commit to comply with all relevant legal and other requirements.
- Adopt pollution preventive techniques in design & manufacture of our products.
- Conserve all resources such as power, water, oil, gas, compressed air, etc., and optimize their usage through scientific methods.
- Continuously strive to minimize waste generation by all possible ways and to Reduce, Reuse & Recycle the same through a time-bound action plan.
- Provide a clean working environment to our employees, contractors and neighbours.
- Set and review objectives and targets for continually improving the Environment.

Towards fulfilling the above, we propagate our environmental policy and our commitment to continual improvement to all employees, suppliers, customers and neighbours. We will strive towards maintaining harmony between society and environment towards achieving our environmental goal.





**Ashok Leyland**

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