

# Green HRM Practices of Heavy Commercial Vehicles Companies Toward Enhancing Environmental Sustainability

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**Abstract** - The automotive industry is one of the major industries in today's world. It is constituted mainly by the light and heavy vehicle manufacturers that produce vehicles which contribute largely to environmental pollution. The heavy commercial vehicle manufacturing companies thus have a great responsibility towards environmental sustainability. In order to achieve this, Automobile companies are taking various initiatives like water & energy conservation, emission & waste management and adopting them into their HRM process. All these initiatives can be successfully implemented and achieved only with the involvement and co-operation of employees of an organization, which forms the basis for the implementation of Green Human Resource Management. This study focuses on the environmental initiatives taken by two Indian (Ashok Leyland and Tata Motors) and two foreign companies (ISUZU and Daimler AG), and descriptive comparison between the two categories.

**Keywords:** *Green HRM; Heavy Commercial Vehicles; Environmental Sustainability; Green Initiatives;*

## I. INTRODUCTION

Green human resource management simply means the creation of environmental awareness among the employees of an organization by its management, by adopting various environmental sustainability practices and policies which also include the preservation of the knowledge capital and thus to encourage the employees to be environment friendly within and outside the organization (Sharma & Gupta, 2015). Green HRM practices range through a wide spectrum which can involve energy efficiency, proper waste disposal mechanism, water conservation, reduction in effluents released from the factories, going paperless, recycling, encouraging employees to carpool or use public transport etc. The benefits of such practices are also immense as they not only help in the conservation of the environment but also in the reduction of costs to the companies that adopt them, and hence are environmentally, socially as well as economically viable. Thus green HRM is a combination of the environmental management with the HR function of a company (Ahuja, 2015) keeping in mind the economic goals of the organization. Environmental Sustainability on the other hand is generally defined as "ability to meet the needs of the present without compromising the ability of future generations to meet their needs" (Cohen, Taylor, & Muller-Camen, 2004). Green HRM has become a buzz word across all business platforms

due to the growing concern over the impacts of global warming and the exploitation of natural resources caused by the rapid industrialization in the past century. It is thus a necessity for all business organization to contribute to the conservation of the natural resources and also to lend a helping hand to fix the damage that has already been caused. The solution that organizations across all sectors have found for this purpose is the implementation of Green HRM policies, as it is evident that Green HRM not only helps in the betterment of the organization but also contributes to the conservation of the natural environment.(Jabbar & Abid, 2015). Customers are highly concerned and focused about the green initiatives taken by the organization to reduce the impact of organizational activities on the environment in order to achieve environmental sustainability. As customers expect organization to contribute to the environment, it influences organization to implement green initiatives to solve the concern of the customers and to achieve the sustainability goals (Adimuthu Ramasamy, 2017). Research Specialists contended that green practices can be effectively implemented only if the organizations have the ideal individuals with the correct abilities and capabilities (Bonnie F. Daily S.-c. H., 2001). Already, organizations accepted that consolidating 'green' into their business methodology would cost cash , however they currently

understand that overlooking negative effects on the earth will be expensive later on .

## II. REVIEW OF LITERATURE

Organizations in the Twenty-first century have been showing a tremendous interest in protecting the environment in all the possible manners by initiating green activities in the organization (Ahmad, 2015). Green HRM practices in an organizational context must encompass all the processes that are a part of the HR function. Processes including recruitment, training, performance appraisal, employee relations, reward and exit must all be covered under the green HRM umbrella to attract and to retain high achieving employees. A study in the United Kingdom had indicated that top job-seeking graduates judged and chose their prospective employers based on their reputation and environmental initiatives undertaken by them (Uddin & Islam, 2015). It is seen that eventually such practices will benefit these companies as, green HRM practices resulting from the combination of Environmental Management and Human resource management leads to reduction in wastage of productive materials, increased productivity of employees leading to increased profit making and production of quality products and services (Renwick, Redman, & Maguire, 2013). Only when a company can successfully merge such environmental management practices with its core culture can it come out as a greener entity possessing a green culture which is a necessity right now (Margaretha & Saragih, 2013). One of the possible ways to protect the environment is to implement green initiatives in the organization through the effective help of Human Resources policies and practices. Green human resource consists of two main elements namely, Environmentally-friendly HR practices and the preservation of knowledge capital that helps the organizations to take environmental friendly initiatives and reduce carbon footprints (Sharma). There are many innovations coming into existence to reduce the organizational impacts on pollution level, carbon footprint, emissions and waste management. Such innovation does not necessarily mean only technological advancement but also the optimum utilization of the Human Resource of the organization (R.K. Mishra S. S., 2014) in all the possible manners. Organizations are going green in order to safeguard their image, to overcome competition, to increase employee morale, to reduce cost and for future sustainability (Y. Alhadid, 2014). Organizations that are not going green to ensure environmental sustainability are losing their image to their competitors in terms of branding and employee retention.

When we look sector-wise, then we find out that the automotive industry not only contributes to the daily life of all people but it has a major impact on both the economy as well as the environment. As such both the customers, sellers as well as the original equipment manufacturers are

adopting sustainable approaches in business with various factors such as design, manufacturing operations and also fuel economy and the related air emissions in mind (Mayyas, Qattawi, Omar, & Shan, 2012), hence green HRM can also be a tool towards sustainability. While considering the automotive industry, it becomes vital to look at it from three main stages which are the manufacturing stage, automobile life stage and then finally its end stage comprising of the disposal and recycle of the vehicle, the green HRM practices in the automobile manufacturing companies would relate more to the first stage during its manufacture. Although the automobile usage is what causes the major impact on the environment, the production stage also causes serious environmental concerns, these may be in the form of generation of excessive amounts of solid waste and also due to significant consumption of water and energy and this again gives scope for the implementation of green operations practices (Nunes & Bennett, 2010). Implementation of such practices has multiple advantages even in the automotive industry, a study showed that Green practices of a selected few automotive organizations in India had a positive outcome associated with it, not only did it give these companies a competitive advantage and help them improve their public image but it also improved its employee loyalty, brand recognition and resulted in increased workforce efficiency (Jafri, 2012). Although the concept has a positive impact on both the organization as well as the environment, and evidently many organizations are adopting Green HRM, it is fairly a new concept and there still exists a large gap between the level of implementation of such practices in developing countries and developed countries (Ramasamy, Inore, & Sauna, 2017). Thus the aim of this paper is to study the Green HRM practices being followed by the top two Heavy commercial vehicle manufacturing companies in India and also the top 2 foreign heavy commercial vehicle manufacturers and draw a descriptive comparison between them.

### Statement of the Problem

Since its origin in the 19<sup>th</sup> century, the automobile industry has seen tremendous growth all over the world. This growth extends even to developing countries and India being one of the fastest growing countries with the GDP rate of 7.2 in the year 2017 is a fertile ground for the automobile industry to grow in. With the increase in population and a considerable shift in the economic status of the substantial number of people from below poverty line to the middle class has led to the increase in demand for automobiles, giving these companies a huge opportunity to indulge in the mass production of vehicles and thus make profits. This is not restricted only to light commercial vehicles used in day to day life of people, but also extends to heavy commercial vehicles, as these are generally used for the travelling purposes and also the transport of goods and services required to suffice the demands of the consumers.

This leads to a great pressure on the natural resources for the production of automobiles and also leads to emissions of harmful gases. Heavy commercial vehicles tend to consume more resources and also release more amounts of toxic gases, this makes the goal of environmental sustainability a challenge. Hence it is the responsibility of the companies' manufacturing such vehicles to adopt green practices to ensure a sustainable growth. Hence it is important to find out if such companies are adopting green practices.

### III. RESEARCH GAP

Green HRM has become a buzzword in the recent times and has been studied extensively with regards to various industries including the automobile industry. Studies have included various practices followed by participants in different industries such as the IT, Food, Electronics, Automobile industry under which enough studies have been done on the Light commercial vehicles but little or no studies have focused on Heavy Commercial Vehicles, another important gap is that studies have not compared between companies from the developing countries and the developed countries. This paper aims to fill the gap by studying two Heavy Commercial Vehicle companies each from India and abroad.

#### Research Objectives

1. To study the Green HR practices of the selected top two heavy commercial vehicle manufacturing companies in India and two foreign heavy commercial vehicle manufacturers.
2. To find the common and the unique company-specific green practices of the selected companies with regard to GHRM practices.

### IV. RESEARCH METHODOLOGY

#### Data source:

This paper is purely descriptive in nature; the data collected for this is through secondary sources which includes various articles and the Sustainability Reports of the identified companies. The Sustainability report of 2015-16 and 2016-17 of selected companies are taken from their websites. The companies selected are market leaders in terms of market share. The identified companies are Tata Motors and Ashok Leyland from India, and Daimler AG and ISUZU being foreign companies.

#### Scope

The study revolves around the selected four heavy commercial vehicle manufacturers, out of which two are Indian and two are Foreign. Based on the total market share, TATA Motors and Ashok Leyland are the market leaders in India where as Daimler AG and Isuzu are the global leaders in this regard. In this study seven selected green HRM practices are considered. The green HRM

practices includes Water conservation; Emission control; Waste management; Energy management; Biodiversity preservation; Material management; Environment education. These have been selected since they're the most commonly used practices across various sectors and hence can be used as a set of parameters to compare the selected companies.

#### Limitations

- Study is based only on the available data published through sustainability reports on the company websites.
- Only two Automobile companies have been considered under each category i.e., Indian and Foreign.

### V. DATA ANALYSIS

- As the paper is basically descriptive in nature, a descriptive analysis of the secondary data has been done.
- The data for the selected Indian Companies and the selected foreign companies will be studied and then a descriptive comparison will be drawn between the two.

#### Green Initiatives and Sustainable practices followed by the Organizations under study:

##### INDIAN COMPANIES

##### 1. TATA Motors Limited

Being India's largest vehicle manufacturer and also well known for its socially friendly outlook, Tata Motors Limited tops the list among the Indian companies in this study. It dominates the Indian market and boasts a market share of nearly 44% in the annual year 2017-18 in the commercial vehicles segment. Tata Motors is also one of the leading heavy vehicle manufacturers in the world and operates this segment under its brand name "Tata Trucks", and in the year 2017 it was ranked 6<sup>th</sup> globally for commercial vehicle it had sold a staggering 45235 trucks around the world and had a big chunk of 13% of overall sales of the global market under its belt. It was listed among the 10 Indian companies in the Dow Jones Sustainability Index 2016. Tata Motors' environmental performance is monitored and checked by its Board-level Safety, Health and Environment Committee. Among other things in its greening process the company engages in water conservation, waste management, Biodiversity projects and importantly Energy conservation and Green House Gases emission control.

##### 1. Water Conservation

TATA is striving towards the goal of water conservation as it is evident from the annual report 2016-17 which shows that the specific water consumption per vehicle manufactured has although increased to 11.31 cubic meter

in 2016-17 from 10.1 cubic meter in 2015-16, the consumption level is still well below its 2014-15 figure of 11.76 cubic meter. Apart from extensive rainwater harvesting in all its manufacturing plants to reduce its surface freshwater withdrawal, it has also done a commendable job of ensuring that all its manufacturing sites and subsidiaries now have attained Zero Liquid Discharge status. ZLD status means that the organization has adopted a water treatment process where it treats and reuses all the wastewater in it and thus ensuring that there is no discharge at the end of the treatment cycle. The percentage of water recycled at the plants are increasing as it is evident from the previous data in its sustainability report 2015-16 which shows an upward trend as 12% wastewater was recycled in the year 2014-15 and in the very next year it rose up to 13.22%, in the same year a total of 1,00,672 cubic meters of wastewater was treated and reused in its operations.

## 2. Waste Management

TML in the process of production of its vehicles has to take up various activities such as painting, machining, fabrication, assembly etc., and such processes generate huge amounts of waste which pose a huge challenge in the disposal. Tata Motors is one of the few manufacturers that set the target of 'Zero waste to common waste disposal sites' for this purpose it undertakes various initiatives such as energy recovery from specified types of wastes through co-processing which is the process of using waste material as raw material or for the purpose of generating energy. TML also lays emphasis on reducing the total waste generated by it and even the waste that is produced despite all efforts through recycling and reuse are disposed of in a manner that does not harm the environment.

## 3. Energy Conservation and Green House Gases Emissions

In the year 2016-17 TML the direct and indirect energy consumption amounted to 16, 67,912 and 10, 52,171 Gigajoules respectively and hence we see that energy consumption is enormous. All offices and common spaces in the organization use only 100W LED bulbs, even lightings in the streets inside the premises and all lightings in productions areas use only LED lights as these consume less energy and are long-lasting.

The company has taken up important steps in order to reduce its carbon footprints, and an example for this is the Lucknow plant which has started using wind energy for its industrial needs and thus has reduced its CO<sub>2</sub> emissions from 614tCO<sub>2</sub> to 90 tCO<sub>2</sub>. To add to this it has also taken up in-house rooftop solar panel installations in many of its plants, the Pune plant which in the year 2015-16 alone produced 21.29KWh of electricity. TML has now become the second company in the country to join the RE100 which is a group of influential companies who are committed

toward using 100% renewable energy in all their operations.

## 4. Diversity and Skill Development

TATA Motors has made it a core value to give importance to people from various backgrounds and segments in order to retain them and support their growth in the organization. To ensure the safety of the employees it has set up the Occupational Health and Safety Policy which is followed throughout the company. The board level Safety, Health, and Environment is responsible to look after the safety measures taken for the benefit of the workers. The company has under the name of its subsidiary established the Jaguar Land Rover Academy for the purpose of skill development in the UK industry and aims to contribute highly skilled workers and engineers to the society in the future. TML has in the year 2016-17 spent a total of Rupees 28,332.89 Crores on employee benefits expenses as declared by it in its consolidated Income statement. Hence TML is bound on maintaining its knowledge capital through training and retention of its workforce and thus leading to sustainable growth.

## 2. Ashok Leyland

Ashok Leyland is the second biggest commercial vehicle producer in India in the medium and heavy commercial vehicle segment, 4<sup>th</sup> biggest producer of transports on the planet and 12<sup>th</sup> biggest producer of trucks all around. It has a whopping market share of 32.1% (FY 2016). Ashok Leyland is the pioneer in the bus segment. According to the Annual sustainability report from 1 April 2016 to 31 March 31 2017, one of the major values on which Ashok Leyland focused is its "responsibility for the environment". Ashok Leyland has improved its performance and enhanced efficiency in implementing and following all their green initiatives by focusing on the environmental footprint across their operations throughout their lifecycle. The various green initiatives taken by Ashok Leyland are as follows:

### 1. Water Management

Water administration is one of the major issues as the water demand is significant across all over its operation. The company persistently endeavors to decrease water utilization and keep up a Zero Liquid Discharge (ZLD) status for its destinations in various units. The rainwater harvesting capacity is 441,889 KL and it is notified that there is an overflow of water during the rainy season. As water is the major source used in the process of production, the company pulled back water from different sources like tankers, waterway, bore well, district supply and so on and also reduced its water consumption in canteens and hand wash area by replacing conventional taps with saving taps. The water utilization for the FY 2016-17 was 1, 99,857 KL which is 2% less than FY 2015-16. Water utilization for the revealing time frame has lessened by 11% from 11.08 KL

in FY 2015-16 to 9.88 KL in the FY 2016-17 through the water protection activities that incorporate water collecting, water reusing etc.

## 2. Emissions

Since emissions cause serious issues to the environment, necessary measures have been taken by the company in decreasing unfavorable impacts and accomplished natural objectives without undermining the development and to protect the global economy. Deduction of carbon impression level by the establishment of 120 CFM blower – Hosur: Ashok Leyland constantly monitors air emissions and have put essential controls and taken necessary measures to deal with air emissions within permissible limits. Ashok Leyland is utilizing compressed air for disseminating of paints in both cab paints and frame paints. Prior, the company used 500 CM compressor to serve the above need during non-production hours and holidays. At this point of time, the company introduced 120 CFM compressor which saved about 380 CFM. This measure also diminished the energy consumption and carbon footprint. Due to this initiative the company saved 1.97 lakhs units/annum of energy and diminishment of 162 tCO<sub>2</sub> of indirect emissions.

## 3. Waste Management

Ashok Leyland believes that the protection and management of the environment is a very important task to be achieved in the current scenario. It focuses on reducing, recycling and disposing of the waste in an eco-friendly manner. The company has also collaborated with cement plants for co-processing of hazardous waste generated by the company during the manufacturing process. In FY 2016-17 34% of the waste generated was sent for co-processing. It also pledges by 'Zero Waste to landfill' and focuses to recycle and re-use waste produced through initiatives such as co-processing, stabilization of ETP sludge etc. It also recycles non-hazardous waste such as scrap and packaging material. The company eliminates waste generation at source by taking all required efforts and ensures that the waste generated from its operations and activities are disposed off in an eco-friendly manner.

## 4. Energy Management

Out-flow from regular burning of fuels like coal, diesel, etc... leads to greenhouse gas emissions, thus leading to a direct impact on our atmosphere. To overcome these environmental issues, Ashok Leyland has taken it as a challenge to tackle energy needs and gas emissions by implementing energy management techniques. Ashok Leyland's energy needs are attained through a blend of renewable and non-renewable sources of energy. Renewable sources include wind energy and non-renewable sources are, Compressed Natural Gas (CNG), High-Speed Diesel (HSD), Liquefied Petroleum Gas (LPG), and Grid Electricity. In FY 2016-17, the company consumed 3,

42,708 GJ of total direct energy (HSD, CNG, and LPG) and 4, 01,291 GJ of indirect energy from grid electricity. The overall energy intensity for FY 2016-17 was reported as 5.25 GJ/ HECU4 which is 7% less than FY 2015-16 and conserved 16,633 GJ of energy in the reporting year.

**Introduction of rooftop solar plant:** Ashok Leyland has dispatched rooftop solar distinctive units adding up to a sum of 5 MW. The same has been introduced at Hosur 1 and 2, Bhandara and Ennore units. These establishments will every year create 15 lakh units that could bring about decrease of 1,230 tCO<sub>2</sub>e.

## 5. Material Management

Ashok Leyland considers material management as essential to its business as it helps in proper maintenance of resources and operational efficiency that is essential for the efficient use of raw materials. For the manufacturing of products, the company's major raw material is steel, while cast iron, lubricants, copper, aluminum, paints, tires, and tires are minor raw materials. In the FY 2016-17, the overall consumption of steel 38,051 MT. In the current reporting year, the material consumption intensity has decreased by 12% as compared to the FY 2015-16.

## 6. Biodiversity

Ashok Leyland has taken several initiatives to preserve natural resources. Tree plantation is one of the major initiatives. 22590 trees and samplings have been planted across all its sites in FY 2016-17. In the FY 2016-17, it has achieved a 94% survival rate for the saplings planted. Water bodies have been created from the run-off water, thus ensuring water conservation due to which many birds are observed at various sites. Due to its various initiatives, it has provided a safe habitat for the birds and animals like ducks, peacocks, deer, rabbits etc

## FOREIGN COMPANIES

### 1. DAIMLER AG

Daimler AG is a German multinational automotive corporation with its headquarters in Stuttgart, Germany. Although it is placed 13<sup>th</sup> in the global list for the biggest automobile companies with regard to manufacturing of all segments of vehicles it is ranked 1<sup>st</sup> when it comes to manufacture of trucks and has been a pioneer in this segment since the inception of the first trucks in the world, hence it has been considered for this study. It has branched out into the world market and operates in multiple countries, in India, it operates under the brand name of Bharat Benz which is a wholly owned subsidiary of Daimler AG and was founded in 2011. It has achieved great fuel economy in all its vehicles through the use of aerodynamics and better engine performance. The company has entered into the electric vehicles concept and also plans to release trucks that are run fully on electricity in the coming future to contribute to environmental sustainability

and to be a part of the growing trend in the recent years. The Company has a large employee force, and in the year 2017 it saw an increase of 2% in its employee numbers and reached a total of 2,89,321, thus the implementation of Green HRM and preserving of knowledge capital will go a long way.

### 1. Water Conservation

Industrial water pollution occurs when organization discharge wastewater into natural water bodies, Daimler AG takes special care and responsibility to make sure that no water is released into rivers or lakes without proper treatment. Although in the year 2017, the total discharge of wastewater saw a rise from 690 cubic meters to 1110 cubic meters, the past four years data shows a decreasing trend in this regard. The production of wastewater is inevitable to a certain limit and in order to purify such wastewater in many of its plants, it uses its innovative bio-filters using swamp plants to naturally decompose any pollutants. Apart from this Daimler has also set a target to reduce the water consumption for the process of production of vehicles by a minimum of 15% by 2022. The organization seems to already be on the path to achieving this as the total water consumption in during 2017 has fallen to 14,014 cubic meters from 15,104 cubic meters in 2016, which shows that the organization is actively working on water conservation.

### 2. Energy efficiency

Efficient use of energy not only helps in saving it and reducing wastage but also leads to a reduction in the release of greenhouse gases. To reduce the wastage of energy the organization has taken the means of advanced technology, by setting up intelligent switch off and stand by controls the unwanted wastage in energy during production breaks is completely avoided. Daimler has also replaced age-old tools, and machinery using modern machines with state of the art technology and also through the construction of newer well-equipped buildings. Daimler AG firmly believes that the future belongs to the renewable sources of energy and thus has started using solar energy for its operational proposes and plans to expand the usage in the coming years. The company has put into use over 1000 solar panels in its Chennai plant in 2016 and through is able to generate a total of 3.3 Megawatts of energy in this plant alone. Daimler also has a policy of creating awareness among the employees and the managers about the need to conserve energy through various events and conferences.

### 3. Emission control

Daimler has made it a policy to reduce the usage of fossil fuels, the burning of which leads to the emission of harmful greenhouse gases into the atmosphere. The company also believes that using advanced energy-saving technology in its operations helps in reducing the release of these toxic gases, and it has set a target of reducing the emission of Carbon-di-Oxide by 20% in comparison to its levels during

the period 1992-1994. The direct emission of carbon dioxide due the process of production has fallen considerably in the past few years and is now below 3000 tons per year; similarly, all other emissions are also on a downward trend as per the figures disclosed by the company. The usage of solar power in many of its plants has also provided a sustainable alternative for energy consumption without causing any form of pollution.

### 4. Waste Management

Daimler believes that waste management begins from the production stage itself, meaning that it ensures that through well structured and planned production process the production of waste can be reduced to a considerable level. Besides this, the company has ensured proper recycling and reuse of raw materials and supplies within its plants so that it can avoid any wastage of resources, as a matter of fact through these initiatives Daimler AG has an astounding waste utilization rate of 91%. To prevent the adverse effects of depletion of natural resources through wastage, the company ensures that its scarce resources usage is kept to a bare minimum. For the purpose of efficient waste management, it uses the "environmentally friendly manufacturing engineering system" in all its production operations and prevents and wastage of materials and thus reduces the waste generation.

### 2. ISUZU

Isuzu is a commercial vehicle manufacturing company in Japan. It is one of the largest outstanding players in the commercial vehicle manufacturing segment. ISUZU plays a major role in protecting the environment in all possible manners. According to the Annual Sustainability Report 2016-17, in order to implement environmental conservation activities in its business operation to protect the environment, ISUZU has established five bodies under the Global Environment Committee. The Global Environment Committee composed of officers from expert fields, holds the meeting to discuss the environmental issues and carry out the discussions in an effective way and makes a decision regarding environmental conservation. The company also carries out the Environmental law and regulation training for the employees in the company in order to deepen their required knowledge in the field of environmental protection.

#### 1. Environmental initiatives in procurement activities

ISUZU has established green procurement guidelines to promote environmental conservation with its business partner and enhance to follow the prescribed guidelines.

In the year 2016, ISUZU revised its Green Procurement Guidelines with respect to social requirements. The Green Procurement Guidelines are:

- a. It seeks its business partner to structure Environmental Management System in order

to effectively promote green activities in the process of procurement.

- b. Notification for the respective personnel responsible for particular environmental matters.
- c. Compliance with the environmental rules and regulations to carry out the respective activities in the process of procurement.
- d. To manage the environmentally hazardous substances in procurement activities to minimize the impact on the environment.
- e. Reduction of CO<sub>2</sub> emissions by implementing the respective green initiatives.

## 2. Environmental initiatives in logistics processes:

In order to reduce the CO<sub>2</sub> emissions in its logistics process, ISUZU has come up with a solution. It focuses to promote fuel-efficient driving through marine transportation by identifying new shipping routes in order to minimize the emissions.

## 3. Environmental initiatives in product development:

- a. Fuel economy improvement: ISUZU is focusing on technological development in the area of fuel economy in order to achieve top-level fuel efficiency. In the FY 2016, all the vehicles manufactured achieved fuel economy targets.
- b. Cleaner emissions: ISUZU is focusing on the evolution of high-efficiency diesel engines resulting in emissions and improved on-road fuel efficiency. In FY 2016, ISUZU started production of new engines to meet the problems of emissions.
- c. Reduction of environmentally hazardous substances: ISUZU is primarily focusing on the elimination of environmentally hazardous substances. In the FY 2016, ISUZU drastically reduced the hazardous substance restricted by ELV directive directions. Presently it is proceeding with various initiatives to eliminate the hazardous substance within the specified period of time.
- d. Promotion of Re-cycling: ISUZU is engaged with the development of Re-cycling oriented design that will lead to the maximum and effective utilization of resources. In FY 2016, ISUZU continued to promote product design in compliance with the recycling laws
- e. Development and diffusion of next-generation vehicles: ISUZU is focusing on to develop natural gas-fueled vehicles and hybrid vehicles, that helps in the reduction of CO<sub>2</sub> emissions. In the FY 2016, ISUZU resumed developing various types of vehicles in accordance with technology.

## 4. Addressing the environment in production activities

To minimize the impact on the environment, ISUZU branch in Japan and overseas are working all together to minimize

the resources and energy used. It has drastically reduced its energy consumption and resources used.

## Promotion of green production activities:

- a. CO<sub>2</sub> emission reduction activities: ISUZU has extremely reduced the energy consumption level by thoroughly focusing on its operation method. It is reviewing its conventional operational method in order to further identify energy conservation activities and implement them across the companies.
- b. Chemical substance reduction activities: ISUZU has come up with the measures to replace the hazardous substances by chemical not containing such environmental hazardous substances, thereby reducing the harm to the environment.

## 1. Water Management

The wastewater produced in the process of manufacturing is handled by treatment equipment prior to being released to sewer systems and public water areas. The discharged water is used by the company for manufacture process and other uses. ISUZU has realized the importance of water and has started to conserve the water by initiating the required measures in all the possible manners as water is a limited natural resource. In the FY 2015-16, ISUZU has started water risk survey with the aim of understanding water risk in the company.

## 2. Emission

ISUZU manages the boilers that produce smoke and also measure the number of air pollutants like Sulphur oxide and nitrogen oxide in order to make sure that air pollutants are controlled and maintained within the regulated values.

VOC emission reduction activities: ISUZU has given a major focus on the VOC emissions from its plants. It has reduced VOC emissions by improving its painting processes through various measures.

## Discharge reduction activities

ISUZU has promoted the discharge reduction activities by stimulating effective use of waste. The company has initiated various activities to reduce discharge that includes valuables. The company is trying its level best to restrict emissions of waste and valuables and aiming towards the re-cycling oriented society.

## 3. Waste Management

ISUZU is proposing towards a positive approach to promote waste reduction activities in the company. The amounts of materials used in the production process are being reduced and also material recycling is being implemented which ultimately reduces the use of additional resources. ISUZU is working as a group towards resource conservation activities that involve a reduction in the amount of waste generated in the process of production.

**4. Energy Management:**

ISUZU is making all the necessary efforts to maximize its environmentally friendly sites by installing LED bulbs or skylights. It has introduced reusable energy systems that lead to a reduction in the level of energy consumption which saves a maximum amount of energy.

**5. Environmental education**

In the FY 2016, environmental education was provided to all its employees by ISUZU. The environmental education was carried out by E-learning with group training. The

main aim of this environmental education was to educate, create awareness, encourage and motivate employees regarding CO2 emissions, environment conservation, waste reduction, water reduction, reduction of energy consumption.

Additionally, training was held for employees and internal environmental auditor on environmental laws and regulations, with an aim of increasing and deepening the knowledge in all the matters relating to the environment and to improve the capabilities of every individual in the organizations.

**VI. SUMMARY OF ANALYSIS & FINDINGS**

		Indian Companies		Foreign Companies	
<i>Companies</i>		TATA MOTORS	ASHOK LEYLAND	DAIMLER AG	ISUZU
<i>Green Practices</i>					
<b>COMMON PRACTICES</b>	<b>Water Conservation</b>	✓	✓	✓	✓
	<b>Emission Control</b>	✓	✓	✓	✓
	<b>Waste Management</b>	✓	✓	✓	✓
	<b>Energy Management</b>	✓	✓	✓	✓
<b>UNIQUE PRACTICES</b>	<b>Biodiversity Preservation</b>	✓	✓	NA	NA
	<b>Material Management</b>	NA	✓	NA	✓
	<b>Environment Education</b>	✓	NA	NA	✓

The above table consists of the selected companies and the list of green HRM practices followed by them. The tick marks under a company's name suggest the successful implementation of the said initiative, and across suggests that the company has not implemented the initiative as the information pertaining to it has not been mentioned in its sustainability reports for the selected period of study (i.e., 2014-2017).

We see from the above study the various green initiatives undertaken by the selected four companies that aim towards sustainable development. We can see that even without specific legal compulsions for the implementation of Green HRM practices in India the selected automobile companies have successfully implemented many Green HRM practices. We see from the above table that both Indian companies and foreign companies have a successful implementation of Water, Emission, Waste, and Energy management practices, even though the values may differ

based on the size of the organization. We can also infer from the above table in a few cases Indian companies have more green practices than the foreign companies, for instance when it comes Bio Diversity preservation, both the Indian Companies have implemented it successfully and are greatly contributing to the conservation of the native species of flora and fauna. As opposed to this, the foreign companies do not specifically concentrate on this segment and, have thus not mentioned the same in their Sustainability reports. When it comes to Material management we see that one Indian company, which is Ashok Leyland, and one foreign company, which is Isuzu has implemented it in its operational processes. Finally, when we consider Environment education, through a separate established institution for the said purpose, we see that only Tata Motors and Isuzu have undertaken this initiative. Although it is worth noting that the other two companies also impart environment education, it only



forms a part of the whole process and a separate institution is not established by them.

## VII. CONCLUSION

On the whole, we see that Indian companies fare well in most of the parameters that were considered for the study and are on a similar footing with the foreign companies. We see that only Daimler AG regardless of being the biggest heavy commercial vehicle manufacturer in the world does not have 3 of the initiatives that formed a part of the study, implemented in its operations. Hence we can conclude that although both Indian and Foreign companies have implemented many common initiatives and the variations between Indian and Foreign companies, in this respect is very minimal (i.e., with respect to the selected companies), but there still lies a huge scope for improvement. This scope can form a part of further studies by other researchers in the future.

Thus we see that the companies depend largely on the environment for all natural resources that are required for its production and operations. Automobile companies are more prone to cause damages to the environment which is likely to affect not only its operations and profits but the public at large. It is very positive outcome that many companies are undertaking Green practices to achieve environmental sustainability through Human Resource, but there is still a huge scope for the integration of the human resource function with such green practices to enable the companies to become green corporate citizens. By doing this, the company will not only reap benefits through cutting costs and additional profits and also bring awareness and also inspire them to imbibe a green culture in their lifestyle.

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