

## **Do Green Practices result in better financial performance?**

**-Dr. Nirlesh Kothari \* and Nikita Mehta#**

*“The more we strive for development, the more we need to endeavor for sustainability.”*

The model of economic progress we have adopted is based on exploitation of natural resources and generation of effluents causing immense damage to the natural environment. Considering detrimental impact of deteriorating ecological balance on the life on earth, it becomes imperative to safeguard our environment by adopting “green” business practices which minimizes such impact. “Green” practices refer to best practice environmental and carbon management, and sustainability practices.

General perception about green practices is related high cost of adoption, long gestation periods, and resultant high prices of products and services; preventing businesses to voluntarily adopt green practices. It is observed that this perception is fading and several companies have adopted green practices. This paper attempts to study such companies in terms of impact of green practices (Energy Efficiency, Waste Management, Water Management and Green Building Practices) on their business and financial performance, stability, profitability and growth. It explores “Going Green” as a viable, long-term business strategy.

Green Economy India, a consulting organization in the area of green development, education, entrepreneurship and training; has provided a list of Indian organisations which have adopted practices in India. The list includes 39 private sector companies which have been taken up for further exploration and study. The study comprises analysis of market and financial performance of these companies since the adoption of green practices or during last 10 years. The study indicates that contrary to general belief, most of these companies have sustained or improved their financial performance; there seems to be no negative impact of green practices. On the contrary, the green practices have helped these companies to improve their public image, and helped in achieving improved performance.

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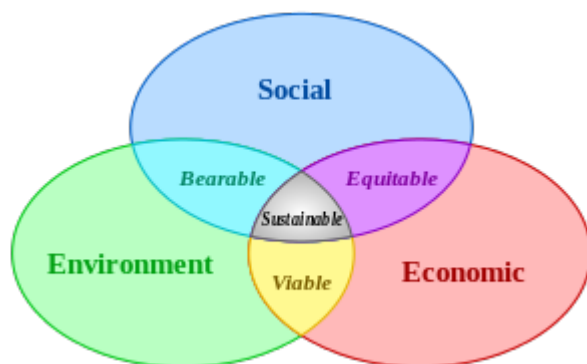
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## Introduction

"Going green" means to pursue knowledge and practices that can lead to more environmentally friendly and ecologically responsible decisions and lifestyles, which can help protect the environment and sustain its natural resources for current and future generations. *Environmental concern and promotion of good environmental practices is increasingly being taken seriously by corporate India.* Terms like 'sustainability' and 'carbon footprint' are become part of business parlance. The green initiatives have a positive impact on the organisation's corporate reputation. Besides, the returns can be tangible as well. In a trend catching on quickly, companies are increasingly volunteering to undergo an annual environmental audit, to highlight their green practices and convert those into competitive advantage. Documentation of sustainability is done in a structured manner through Sustainability Accounting coined by Global Reporting Initiative now known as GRI. Scope of Sustainability Accounting includes social and environmental accounting, corporate social reporting, corporate social responsibility reporting, and non-financial reporting. It is considered in a subcategory of financial accounting that focuses on the disclosure of non-financial information about a firm's performance to various stakeholders; capital holders, creditors and other authorities. Sustainability accounting in managerial accounting contrasts with financial accounting in that managerial accounting is used for internal decision making and the creation of new policies that will have an effect on the organization's performance at economic, ecological, and social also known as triple bottom line or Triple-P's; People, Planet, Profit level. The topic is fairly new and being led in Europe.

The concept can be elaborated through the following Venn diagram:



Source: IUCN

Sustainability Accounting is a tool used by organizations to become more sustainable. The most widely used measurements are the Corporate Sustainability Reporting and the triple bottom line accounting. These recognize the role of financial information and indicate how traditional accounting is extended by improving transparency and accountability by reporting on the Triple-P's.

Scope of Environment includes Energy, Water, Greenhouse gases, Emissions, Hazardous and non hazardous waste, Recycling and Packaging. Social includes community investment, Working conditions, Human rights and fair trade, Public policy, Anticorruption, Diversity and Safety. Economic includes

Accountability and Transparency, Corporate governance, Stakeholder value, Economic and Financial performance.

In spite of increasing awareness about environmental conservation, there is a common perception that green practices are expensive and reduces profitability. This paper attempts to test this perception through a study of environmental and financial Performance of several Indian listed companies which have adopted green practices. The study has been carried out through compilation of cases studies of these companies with respect to their green practices in their operations, the benefits derived and their financial performance over last 10 years.

The cases studies have been compiled on the basis of 6 primary parameters of Environment conservation which are considered important aspects of adopting green practices:

1. Energy Efficiency-Scope 1-Carbon Emission directly with the use of fuel or any other energy
2. Energy Efficiency-Scope 2-Carbon Emission indirectly through purchase of electricity
3. Energy Efficiency-Scope 3- Carbon Emission indirectlyemission through inbound logistics, air travels, etc.
4. Water Management
5. Waste Management
6. Green Building

## **Background**

Going green makes strong business sense according to management expert Michael Porter. MNCs, today, are actively engaging themselves in promotion of environmental causes. Google, for example, is gradually switching to renewable energy (such as wind power) and greening their power supply. Coco Cola is actively involved in the cause of water stewardship. Their community watershed programmes are designed to support healthy watersheds and sustainable programmes to balance the water used throughout their production process. The company also has a focused view on energy efficiency.

## **In India**

To encourage the movement, the Ministry of Power and the Bureau of Energy Efficiency have come up with a Perform, Achieve and Trade (PAT) programme for big energy consumers. The government has identified 478 companies that together consume 75 per cent of industrial energy and given them targets to reduce energy consumption over a period of three years.

On the corporate side, in 2004 CII unveiled the CII-Godrej Green Business Centre (GBC) in Hyderabad - a public-private partnership project between the Andhra Pradesh government, the Pirojsha Godrej Foundation and CII, with technical aid from USAID. According to Jamshyd Godrej, CMD, Godrej & Boyce, and chairman, CII-Godrej GBC, there is an enormous potential for green business in India. CII has initiated the 'GreenCo' rating for companies based on their environmental performance across nine parameters, including energy efficiency, water conservation, use of renewable energy and waste management. The industry chamber's Indian Green Building Council is actively involved in the green building movement, with more than 15 chapters across India and ventures such as Green Product Certification Process and Green School Certification Process, awareness programmes, with 516 certified green buildings already in place and several other initiatives in the pipeline. That Indian construction ecosystem is turning eco-friendly is evident from the fact that as of May 2015, the country has at least 3,155 green building projects, covering more than 3 billion sq ft.

Heavy energy users-such as those in steel, cement and paper-have adapted quickly to this change. Cement companies such as ACC and Vasavadatta are developing sustainable technologies in manufacturing, and real estate firm DLF ensuring some of its properties adhere to high standards of energy efficiency. In other sectors, Hindustan Unilever is aiming to cut carbon emission by 22 per cent, Pune-based Kirloskar Brothers is marketing a line of highly energy-efficient pumps, while in Jaipur UltraTech Cement helps burn 100 tonnes of municipal waste at its waste treatment plant every day.

Companies are sensitizing employees to environmental issues. Some organisations are going beyond conventional green practices and coming up with interesting, innovative and impactful initiatives. "Offices can use tubular day lighting devices (that bring sunlight, minus the heat) into a room. There is no electricity cost of running these. They can also install infrared controlling films that don't allow heat into a room, so the requirement for air-conditioning is very limited. Additionally, offices can use films such as Di-noc in their interiors. These look and feel exactly like wood (of virtually any type), but do not require the cutting down of trees. After coming across such exemplary examples of green practices, further more study is imperative and hence a systematic cases shall be discussed further in the paper.

### **Research Objective**

This study aims to explore adoption of green practices by private corporate sector with respect to their financial viability and other intangible benefits. The idea is to create awareness regarding innovative green practices which may lead to increased operational efficiency, as well as better economic and financial performance resulting in capital appreciation of the investment in those companies. To further explore if it results in a long term strategy for survival and growth for the company satisfying all stakeholders.

## **Methodology**

This is an exploratory research and attempts to study sustainability reports of various listed companies implementing green practices. Primarily samples were taken from [www.greeneconomy.com](http://www.greeneconomy.com) which validates green practices of those who are participating in best practice environmental and carbon management, and sustainability. There are 39 such companies out of which only 17 companies have disclosed their financial performance data. Out of 17 companies only 7 companies have disclosed their green practices efforts and outcomes in their sustainability report. Case studies have been compiled outlining their green practices outcome on broad parameters; Energy Efficiency (Scope 1, 2 and 3), Water Management, Waste Management and Green building as defined by GRI and the track of financial performance on the scale of Sales turnover, Operational Profit, Profit after tax over the period of last 10 years (2005-2015).

Selected Companies Cases are:

1. Arvind Limited
2. Infosys
3. TCS
4. Hindustan Unilever
5. Mahindra and Mahindra Conglomerate
6. Praj Industries Ltd
7. Bharat Electronics Ltd.
8. Other, out of the selected group

## **Case Studies**

## 1. Arvind Limited

Arvind Ltd was incorporated in 1931, flagship enterprise of the USD 1.5 billion Lalbhai Group. One of the largest denim companies in the world and one of India's largest textiles and apparel conglomerate, Arvind is powered by the collective expertise of over 25,000 employees. With a vision of 'Enriching Lifestyles', it has expanded its presence across diverse genres such as Textile, Garments, Advanced Materials, Chemicals & Dyes, Retail, Telecom, Engineering and Real Estate and Sustainable Agriculture. Conglomerate strives to be more sustainable and eco-friendly, and values sustainability for businesses, people and environment

### Energy Efficiency-

- a. 2.8 MW capacity windmill at Porbandar contributes to partially offset consumption of grid-based electricity at Naroda.
- b. Recovers condensate and reuse it in boilers – resulting in better energy efficiency.

### Water Management

- a. Santej facility is a Zero Discharge plant that recycles 94% of the water which is then used in other processes.
- b. Collaborated with Ratan Tata Trust to implement rainwater harvesting in Akola, Maharashtra.
- c. It ensures 360-degree water economics for industrial and municipal projects by providing a wide range of customized solutions for water recycling and reuse. An example is Mechanical Vapour Re-Compression technology saves up to 80% energy at their Zero Liquid Discharge (ZLD) Plant.

### Waste Management

- a. To reduce water consumption and waste, liquid indigo is used instead of powder.
- b. Salt recovered from deployment of MVRE is used for commercial purpose, thus reducing landfill waste.
- c. Caustic recovery plant installed at Naroda and Santej recovers and reuses the caustic soda thereby improving water effluent quality.

### Financial Performance

Arvind has been consistently performing well since last 10 years, green environmental practices have never been a hurdle in their performance. Their commitment towards green environment is phenomenal and inspirational for other MSMEs. They have achieved sustained financial performance over last 10 years as reflected by following figures:

Sales	Operating Profit	Profit After Tax
11.1%	8.5%	11.0%

Arvind is contributing its small share in the field of green practices and they believe persistent practice can lead to operational efficiency and profitability.

## 2. Praj Industries

Harbingers of India's Bio-based technology for Bio Fuels, they have been successful in giving technology to the rest of the world. Today, Praj offers innovative solutions for beverage alcohol and bio-ethanol plant, brewery, water & wastewater treatment plant, critical process equipment and systems and bio-products. A global in more than 60 countries across 5 continents; Praj has acquired international repute for responsible and reliable solutions. Even after achieving this level company still has a very strong will to work more on environmental and social front. It is very clear from their vision, which states 'we aspired to be the most preferred organisation for all stakeholders through environmental friendly, sustainable solutions that can make the world a better place'. Approach towards green practices is as follows:

### **I. Energy Efficiency:**

- a. By virtue of being in the business of ethanol gives the company a credit of reduction in GHG Emissions. Ethanol can remove 0.6 Metric Tonnes of CO<sub>2</sub> per kilo litre of ethanol blended in fuel.
- b. Ecofine Distillation Technologies like Ecofine wash to ENA, Evaporation distillation resulted in energy reduction upto 40%.
- c. Ecosmart Distillation Technology led to 40% reduction in the energy consumption.
- d. EcoSmartNextGen Distillation Technology with up to 60% reduction in steam.
- e. Ecovap MVR based evaporation technology makes it practically 'steam-less' process.
- f. Lignocellulosic ethanol technology of using biogases as feed stock and microbial fermentation process is expected to reduce the greenhouse gas emission by 75% as compared to gasoline as transport fuel.
- g. IGBT based welding instead of transformer based and thereby saving upto 50% of electricity consumption.

### **II. Water Management:**

- a. EcovapBiomethanated spent wash based ZLD Technology results in upto 80% water Recovery.
- b. Ecophotox ZLD Technology of complex effluent to reduce water footprint upto 60%
- c. Recycling steam of condensate water to boilers and savings 3 MT water per day.
- d. Use of treated water for gardening and thereby saving 5 MT per day.

### **III. Waste Management:**

- a. Zero liquid Discharge and Reduce, Recover, Recycle, Reuse solutions are already been implemented for distilleries, textile and many other areas.Praj has developed system that generates revenues in the form of extracted salts, generate power from the system during the process of treating wastewater.
- b. Introducing high ethanol titer (12-15%v/v) fermentation ensuring 30-40% effluent reduction.

### **IV. Green Building and Environment**

- a. Use of Mass transportation facilities
- b. Free saplings distribution to employees.

- c. Practicing rain harvesting for recharging the wells
- d. Sensor activated faucets to reduce water wastage.
- e. Drip Irrigation in gardening
- f. Water Meters to control water consumption.
- g. Roof top solar Power system contributes 10% of LT side power

**Financial Performance**

Company has been growing at a CAGR of around 11-12% since last 10 years. Their Profits has modestly increased to more than 11%.

Sales	Operating Profit	Profit After Tax
12.2%	11.3%	11.1%

Company is not only adopting green practices to improve its profits but also provides innovative solutions for their clients. Their mantra towards green practice seems to be ' Charity begins at Home'. It through environment friendly practices company is able to cater newer areas to its clients.



### 3. Tata Consultancy Services Limited

Tata Consultancy Services is a flagship company of Tata Group. Tata is known for the best practices in process, product, and policy in India. TCS has contributed a lot in the field of green and sustainable development, not just through in-house practices but extending this to their clients in going green.

TCS views sustainable growth as an imperative for a sustainable future. One Earth is not enough to meet the needs of the people it is housing today. The rate of resource consumption is almost 1.5 times the rate at which nature can replenish itself. The cumulative pressure on the planet is leading to the deterioration of the natural resources which have been at disposal since time immemorial. At this rate, by 2050 even three earths will not be enough to meet the needs.

Reversal of this impact on the environment is possible only through a collaborative effort of governments, businesses and society. This crisis poses an opportunity for businesses to innovate and be a part of the solution by radically changing the way they do business in their operations, supply chain, products and services. TCS acknowledges the role it needs to play as a responsible corporate citizen and targets to decouple the growth in business and the impact on the environment through conscious changes in its strategy across the value chain. From green buildings to green IT to green supply chain, the commitment is to grow sustainably and also help customers achieve sustainable growth through green solutions and service offerings.

#### **I. Energy Efficiency-**

- a. 0.7 million tonnes of Co<sub>2</sub>e & 926990 Mwh of electricity avoided
- b. 550% increase in solar thermal installation
- c. 39% reduction in specific Electricity consumption
- d. 34% reduction in specific Carbon Footprint
- e. 4 LEED certified campuses
- f. 2.3% of total power from renewable sources
- g. 61% reduction in business air travel emissions
- h. Achieved PUE between 2.0 to 1.77 across key data centers

#### **II. Water Management**

- a. 13% reduction in specific Water consumption
- b. 1.2 million kL of water usage avoided
- c. 217396 cum of rainwater harvesting potential created
- d. 2.9 million of kL of water recycled

### III. Waste Management

- a. 100% paper waste is recycled
- b. 100% hazardous waste is disposed through government authorized recyclers
- c. 100% e-waste is disposed through government authorized recycler
- d. 14% biodegradable on-site recycled

### IV. Green Building

- a. All new offices coming up are designed as per LEED Green Building standards for high energy and resource efficiency.
- b. Key features includes energy efficient design of building envelope, energy efficient electrical and mechanical equipment, onsite renewable energy (rooftop solar photovoltaic panels), solar thermal installations (hot water generators), chiller waste heat recovery units, solar PV based peripheral lighting systems, etc.
- c. Added solar water heaters in 4 offices in India (taking the total to 28 offices) increasing its solar water heater capacity by 5.5 times over 2007-08 (21). This helps reduce the energy used in heating water in kitchens and gymnasium washrooms.

#### Consulting for Green Practices of clients

TCS not only strives to take green initiatives but also to their clients; through consulting on Green Supply Chain best practices. Most of the customer could reap the benefit of this concept of TCS which was as high as more than 50+ in all aspects of green supply chain practices.

#### Financial Performance

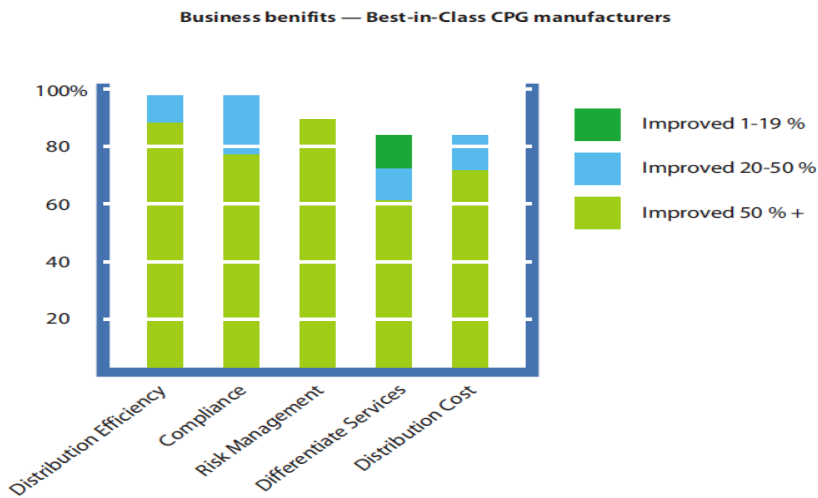
Company's overall performance has been stellar on all the financial parameters company has been able to growth at more than 20%. Highlight is Operating profit; company has a very high level of commitment toward green consciousness.

Sales	Operating Profit	Profit After Tax
20.7%	22.6%	21.6%

Green practices are perhaps the company's long term strategy and the manner in which they have been practicing from last 8 years has been phenomenon. Operation profit increasing at such high rate is commendable. Moreover, it is not only the green practices limited to themselves but also to their clients. TCS has been able to proactively involve in the consultancy of best practices in Green Supply Chain. Company has been able to achieve about 20-50% improvement in distribution efficiency, compliance, risk management, differentiated services and ultimately

reduction in distribution cost. Following are the details:

### Business benefits of Green Supply Chain Best Practices



Source: Make it Green-TCS Way

### Environmental Benefits of Green Supply Chain Best Practices

Adopting Green Supply Chain best practices results in multiple environmental benefits. These benefits are visible across retail chains, Consumer Goods manufacturers, Consumer Goods logistics and Transportation Service providers. These benefits include improvements in energy and waste reduction, less packaging in related activities, and decreased GHG emissions. Consumer Goods manufacturers can decrease GHG emissions and waste by investing in LEED (Leadership in Energy & Environmental Design) certified green buildings and retrofitting their distribution centers to be more environments friendly. The above mentioned processes will enable the Consumer Goods manufacturers to access carbon credits. Unused credits could be sold to other organizations worldwide.

It can be surmised that the commitment towards green practices has given TCS an opportunity to add more business.

#### **4. Bharat Electronics Ltd.**

Bharat Electronics Limited (BEL) was established at Bangalore, India, by the Government of India under the Ministry of Defense in 1954 to meet the specialized electronic needs of the Indian Defense Services. Over the years, it has grown into a multi-product, multi-technology, multi-unit company servicing the needs of customers in diverse fields in India and abroad. BEL is among an elite group of public sector undertakings which have been conferred the Navratna status by the Government of India.

##### **I. Energy Efficiency-**

- a. Generation of wind energy (Green Energy) through 5.5 MW capacity wind mills reduces release of Green House Gases into the atmosphere.
- b. About 9.98 million KWhrs of electrical energy was wheeled from wind power plants installed at Davanagere and Hassan of Karnataka state for captive consumption it contributes 37.5 % of energy consumed by Bangalore Unit.
- c. Upgradation of Air Compressor plant by replacing water cooled reciprocating compressor with state-of art energy efficient air cooled compressor resulting in reduction of energy consumption at the central Air Compressor plant and the Energy saved is made available for other usages.
- d. GHG Emissions was about 4.8 MT of CO<sub>2</sub>/ Rs. Crore Turnover in 2010-11 which has reduced to 3.5 MT of CO<sub>2</sub>/ Rs. Crore Turnover during 2011-12.

##### **II. Water Management**

- a. Conservation of potable water by using recycled sewage water from Bangalore Water Supply and Sewage Board for horticulture resulting in reduction of consumption of 200 ML (Million litres) of fresh potable water every year. This also improves the ground water level and greenery around the Company Campus.
- b. Rainwater harvesting and innovative recharging of bore wells enable us to collect the runoff water and recharge the ground water table. The large-scale rainwater-harvesting reservoir at Bangalore unit has a capacity of 170 million litres with expected annual yield of around 234 million litres.

##### **III. Waste Management**

- a. Concerted efforts are made to reduce, recycle, and reuse waste so that paper and plastic can be recycled and reused rather than sent to landfills.
- b. By introduction of appropriate chemicals that generate less hazardous sludge in

detoxification of wastewater and by adoption of cleaner technology, hazardous waste generation has been reduced at the process level itself.

- c. Cyanide-free Zinc and Copper plating processes, use of sodium hydrides, sodium hypochlorite and sodium Meta bisulphate in place of lime, bleaching powder and ferrous sulphate, help in reduction of large volume of hazardous sludge.

#### **IV. Green Building**

- a. Around 1,35,750 different species of plants are grown in the campus which has been inhabitant for varieties of birds and other creatures supported by fruits and flower bearing of these plants.
- b. Around 3,74,000 Square Meters lawns and 23,000 meters hedges are nurtured in the campus. Green plantations, spreading over 170 acres of land stand as a testimony for BEL's commitment to Afforestation.

#### **Financial Performance**

Being highly competitive industry and at the same time catering to Indian government has lead to lower Sales, operating profit and PAT. It has improved in a very modest range of 5-7%.

Sales	Operating Profit	Profit After Tax
7.0%	5.2%	7.6%

The company is certainly committed to green practices but they have to make it more intense. Currently, they have been doing well in the field of wind energy, but their scope of green practice is limited and hence requires more efforts to translate it in operational efficiency.

### **5. Hindustan Unilever Limited**

Hindustan Unilever Limited (HUL) is India's largest Fast Moving Consumer Goods Company with a heritage of over 80 years in India and touches the lives of two out of three Indians.HUL works to create a better future every day and helps people feel good, look good and get more out of life with brands and services that are good for them and good for others.

#### **I. Energy Efficiency**

- a. CO2 emissions per tonne of production in 2014 reduced by 37.5% compared to the 2008 baseline. Major contribution to this reduction has come from using alternative forms of energy like biogenic fuels, solar photovoltaic energy, etc. in manufacturing operations.

They have taken steps in consultation with original equipment manufacturers (OEMs) for upgrading our existing biomass boilers and hot air generators across sites.

- b. CO emissions from their logistics network reduced by 20 bps (from 74.1 kg CO per tonne to 73.9 kg CO per tonne) in 2014.
- c. Continued to roll out environment friendly freezer cabinets that use hydrocarbon (HC) refrigerant.
- d. In order to reduce air travel, approximately 2000 meetings were conducted through tele-conferencing.

## II. Water Management

Water usage (cubic meter per tonne of production) in the manufacturing operations reduced by 44% compared to 2008 baseline. Major contribution to this reduction has come from reusing treated water in gardening, toilet flushing and harvesting captive rainwater collected on roof tops.

## III. Waste Management

- a. 88% reduction in total waste generation in 2014 over 2008 baseline. Some of the initiatives which have helped reduce disposed waste footprint are usage of spent coffee, tea waste in biomass boilers, composting of ash and co-processing waste in cement industries. All 38 manufacturing locations are zero non-hazardous waste to landfills.
- b. Optimizing packaging resulted in savings of 700 tonnes of plastic and around 4,900 tonnes of paper in 2014
- c. Recycle packing has been started where 80% of the PET is being used.

### Financial Performance:

Company has been able to show good growth on all parameter. Operating Profit has increased more than any other parameter indicating improvement in operating efficiency.

Sales	Operating Profit	Profit After Tax
10.6%	12.8%	12.3%

'Small is Beautiful', company has been involved actively in small activities for reducing waste and optimizing resource through green practices. Perhaps, persistent practice enables to outperform on operating profit. HUL is successful in killing two birds with a stone, green practices leading to higher operating profit as well as PAT.

## 6. Infosys

Infosys is a global leader in consulting, technology, and outsourcing and next-generation services. They enable clients in more than 50 countries to outperform the competition and stay ahead of the innovation curve, helping enterprises renew themselves while also creating new avenues to generate value. They provide enterprises with strategic insights on what lies ahead and helps to transform and thrive in a changing world through strategic consulting, operational leadership, and the co-creation of breakthrough solutions, including those in mobility, sustainability, big data, and cloud computing.

### **I. Energy Efficiency**

- a. Per Capita Electricity Consumption reduced to 4.34%
- b. Investment in solar energy to produce 15 MW as to source 29.1% of the overall energy required.
- c. Scope 1 and 2 Carbon emissions reduced to 4.32%.
- d. Retrofit Air-conditioning helped to achieve 13.5 MW reductions in load in last 4 years and 3.4 MW during last year.

### **II. Water Management**

- a. Installation of heat pumps instead of electric heaters and savings is as high as 3.5 times and eliminate use of 4000kW.
- b. 42% of the total water requirement in new buildings is through rain water harvesting.
- c. Reverse Osmosis treated to be replaced by capacitive de-ionization which reduces the rejects of 10-12 % compared to 40-60% in RO. Also, energy consumption is lower to 60%.

**III. Waste Management:** Zero liquid discharge policy helps us in achieving 100% reuse and recycle in aerobic membrane bioreactor (MBR) technology. This requires 30% less energy and 60% less sludge.

### **IV. Green Building**

- a. 89465 saplings across the campuses in India were distributed
- b. LEED award has been given to 2 of its building in Bangalore and Chennai and hence total 12 buildings are LEED Platinum rated.
- c. Add 600 new energy meters to monitor Enterprise-Level energy consumption for building management, chiller plant, diesel generator sets.
- d. Monitoring of usage through metrics like per capita consumption, energy performance of the

building "office" or "after office" to identify opportunities for further investigation.

- e. Received the highest green certification GRIHA-5

**Financial Performance:**

Infosys has been growing persistently over the period of 10 years. Operating Profit has increased at the rate of 18.6% which is indeed a very good sign of operating efficiency.

Sales	Operating Profit	Profit After Tax
18.0%	18.6%	17.5%

Company is working on cost reduction in the area of energy extensively, being an IT company apart from salary; infrastructure maintenance cost is the second major cost. They have smart practices in energy savings and hence they have been able to reduce operating cost and are benefitted in increasing operating efficiency.



## 7. Mahindra Group

The conglomerate operates in 20 key industries, providing insightful and ingenious solutions that are global in their ramifications. Companies act as a federation, with an optimum balance of entrepreneurial independence and synergy. From Mobility to Rural Prosperity and IT, from Financial Services to Clean Energy and Business Productivity they are empowering enterprise everywhere.

### I. Energy Efficiency

- a. LED lights, magnetic levitation water cooled chillers with COP of 5.02 resulting in overall energy saving of 34.3% over AHSAE baseline.
- b. Use of low VOC content materials for better indoor air quality and thermal comfort design as per ASHRAE-55.
- c. Annual CO<sub>2</sub> savings from the windmill is 57.47 MTCO<sub>2</sub>
- d. Solar power contributes 2% of the total power requirement of Hinjewadi Campus with an estimated annual savings of 24.52 Lac.
- e. LED lights, magnetic levitation water cooled chillers with COP of 5.02 resulting in overall energy saving of 34.3% over AHSAE baseline

### II. Water Management

- a. 68% of run-off water is harvested. 35.7% of water saving due to initiatives like low flow fixtures, drip irrigation, sensor based urinals etc.
- b. The use of micro irrigation systems resulted in several benefits including savings in water consumption between 30% and 50%. Farmers also saw a decrease in the use of fertilizers and increase in the yield.
- c. Through this micro irrigation project, 8.40 million m<sup>3</sup> water savings during FY 2013-2014 against the 6.1 million kl total water consumption by the entire Group.
- d. The treatment of domestic & process wastewater resulted in savings of 425 m / day of water. The enhancement of storm-water percolation check dam capacity led to increase in water storage - capacity to 1,100 m per annum. Storm-water harvesting 3 added 2,500 m of water per annum.
- e. 10% treated water was being used for grill cleaning.

### III. Waste Management

- a. Utilisation of paint sludge for primer making and Solar sludge drying bed for paint sludge.
- b. Waste to Wealth - an initiative regarding the management of solid waste and wastewater and familiarizing participants with the newly introduced laws pertaining to hazardous, e-waste and

biomedical waste management. Program focuses on Innovative and proven approaches to waste segregation, removal, generation of useful by-products like biogas, CNG, briquettes as fuel, recycling of furniture and disposal of solid waste.

- c. Wooden boxes are replaced with MS cage for transport of engineering parts saving 2,400 kg of wood a year.
- d. 1,930 liters of diesel and 4.2 tons of CO<sub>2</sub> are saved by using hydraulic press which compresses waste and helps a vehicle take 8 tonnes of waste compared to just 2.25 tonnes earlier. As a result 15 trucks are required now instead of 45 earlier.

#### **IV. Green Building**

- a. 53% landscaped area. Landscaping with native and adapted vegetation, grass pavers for driveways, vegetative green roofs etc.
- b. Solar power plant has a capacity of 250 kWp per day with solar panels on Block III, Block IV and Food Court. The project was executed by Mahindra EPC.

#### **Financial Performance**

Mahindra & Mahindra has grown about 19% in Sales while its operating profit at 19.5%, while PAT at 22%.

Sales	Operating Profit	Profit After Tax
18.9%	19.5%	22.0%

Sustainability is a common agenda among all the entities of Mahindra group. the report takes into account 20 different key sector, M&M being the flagship company of the group contributes maximum. Perhaps, green practices have been adopted as a strategy and it might be due to their venture in real estate area. Agriculture and waste management based innovations have been effective. Top management is giving high importance in this area and results backed with that decision. Hence, this practice may continue for long and company can reap benefit out of it.

#### **Limitations**

Out of 39 companies listed on Green directory, only 8 companies had financial information and out of these only 7 had proper documentation of their green practices. Perhaps, documentation is also a big hurdle in the study; most of them are not bothered about documenting their green practices.

the sample in the research comprises more of service sector based companies. And hence, in order to substantiate the objective of the research, 2 more companies have been compiled. These are from manufacturing sector and has been involved in green practices for quite long. These two companies are; ACC and Kirloskar Brothers Limited.

## Other Examples

### ACC-

Cement major ACC is a good case in point when it comes to green building initiatives. Step into its Mumbai headquarters near Churchgate and you will be hard-pressed to believe the building spread across 68,000 sqft is 75 years old.

#### I. Energy Efficiency

- The company has reduced its specific carbon footprint by more than 33 per cent since 1990, and as per its Low Carbon Technology Roadmap, this will further reduce by 20 per cent by 2040.
- Thane complex is powered by the company's three wind farms of 19 MW installed capacity in Tamil Nadu, Rajasthan and Maharashtra.

#### II. Waste Management

- ACC commissioned its first waste heat recovery power generation unit of 7.5 MW, which has a potential to reduce nearly 44,180 tonnes of carbon dioxide per year while providing 7.5 per cent green energy for the plant.

#### III. Green Building

- An airy atrium, cubicle-free open workspaces, terrace gardens and intelligent lighting and cooling systems that get activated only when needed.
- In 2009, the building received the LEED gold certification and 5-star energy efficiency status from the Bureau of Energy Efficiency.
- La Residency in Thane, and the Central Control Room building inside its new Chandrapur cement plant received platinum certification from the Indian Green Building Council.

## **Kirloskar Brothers Limited**

A walk through the sprawling Kirloskar Brothers Limited's (KBL) corporate office campus in Pune can well be a lesson in botany. The group became India's first pump manufacturing facility to receive the GreenCo rating. Its plant in Dewas, Madhya Pradesh, was recognised as a 'Green Company' by CII's GBC. The units in Dewas and Kaniyur have received the CII GreenCo silver rating certification. signed the CII code for "ecological sustainable business growth" and adopted the principle of 3R-Reduce, Reuse and Recycle.

### **I. Energy Efficiency**

- The Dewas plant has reduced specific energy consumption by 30 per cent in the last five years.
- 45 per cent of all power consumption at Dewas is wind energy and the facility has cut down carbon dioxide emission by 10 per cent in the last five years.
- reduce emissions due to transportation and has cut down the number of vendors from 87 to 72 besides reducing long-distance suppliers from 69 to 36.

### **II. Water Management**

- The gardens and ample open spaces are lined with native species of trees and plants, and they require less water and maintenance. The water used is treated waste water.
- It has put up rooftop rainwater harvesting projects. This has helped the Dewas plant reduce water consumption by 40 per cent over the last five years and become a zero water discharge facility for the last 15 years.

### **III. Waste management**

- It reuses 70 metric tonnes of mild steel scrap and recycles 100 per cent cast iron scrap.

### **IV. Green Building**

- Yamuna', the first LEED platinum-rated green building in this region. In step with KBL's eco-friendly policies, the corporate office focuses on water conservation and harvesting, while waste from the cafeteria goes into the vermin-compost.

## **Conclusion**

Awareness regarding the economic and financial benefits of green practices is slowly and gradually permeating in Indian corporate world. Those companies who have taken the initiative on this front are undisputedly performing well financially too. All the companies in the case study have grown in terms of Sales, Operating Profit and PAT, of course, growth varied from company and sector. Water Management and Energy efficiency; Scope 1 and 2 has been the top agenda for all the companies, they have made tremendous efforts in these two segments. Reductions in energy by the use of non-conventional sources of energy like solar and wind is endeavored by BEL, Mahindra & Mahindra, TCS and Infosys. Operating profit has increased in the range of 5-23% CAGR, least of BEL but decent in its sector and highest is of TCS. While, PAT has increased at 7-22% CAGR, again the best is of TCS and bottom is of BEL.

The attempt of highlighting green practices and profitability clearly testifies how green practices have lead to higher growth and profitability. Green Practices are always perceived positively in the minds of customers, suppliers, employees, owners, government and society at large. And thus, it may help the company to enhance its image, establish a high level of credibility and goodwill; and attract more customers and prospective investors. It can be concluded that green practices do not only lead to profitability in long run but it can serve as a conscious and lasting strategy for the company.

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