



Green Office Manual

A Guide to Sustainable Practices



Supported by

IndusInd Bank



Green Office Manual

A Guide to Sustainable Practices



Supported by
IndusInd Bank 





Supported by

IndusInd Bank



Copyright © 2009

Centre for Environmental Research and Education (CERE)

ISBN: 978-81-902018-7-2

Publisher: Centre for Environmental Research and Education (CERE)

Concept: Kitayun Rustom, CERE

Research Team: Arish Bharucha, Janjri Jasani, Tina Abraham

Illustrator: Somnath Pal

All rights reserved. No part of this publication may be copied, transmitted or reproduced in a retrieval system in any form or by any means without prior permission of the Publisher.

This booklet is printed using environmentally-friendly materials. The inks used are vegetable oil-based inks and the paper is eco-friendly bagasse-based paper.

Content

| | |
|--|--------|
| Foreword |05 |
| Why should Corporations Go Green |07 |
| A Practical Guide |08 |
| A Planned Approach |08 |
| Going Green: Step by Step |09 |
| Resource Usage and Responsible Purchasing |10 |
| Paper |11 |
| Printers and Printing |13 |
| Photocopiers |15 |
| Computers and Desktop Monitors |16 |
| Lighting |18 |
| Travel and Transportation |20 |
| Air Conditioners |23 |
| Stationery and Corporate Merchandise |25 |
| Waste Management in the Office: Reduce, Reuse, Recycle |27 |
| Greening the Office Environment - Quite Literally with Plants! |30 |
| Employee Awareness - Taking it Home |31 |
| Large Scale Office Design Interventions |32 |
| Technology Initiatives |33 |
| Non-Financial Reporting |33 |
| Case Studies |34 |
| Data Source |40 |
| Resource People for Green Office Products & Services |41 |

Foreword

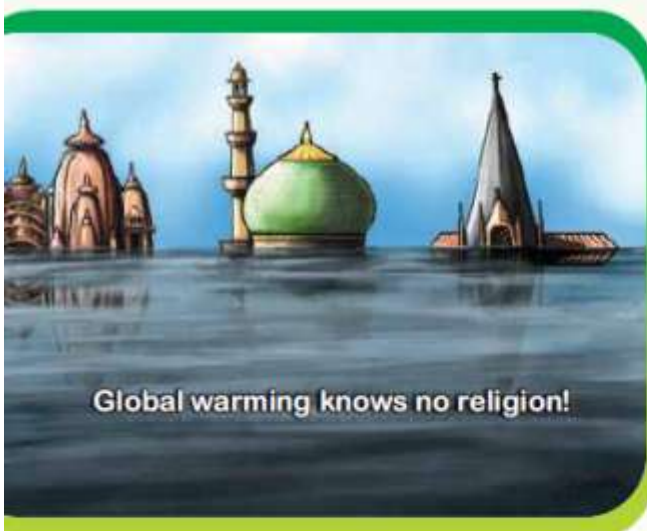
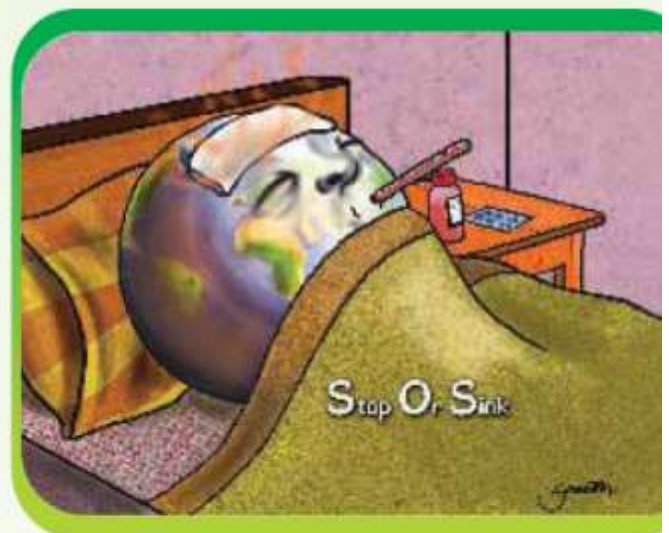
In the 4.6 billion years since Earth was formed, its temperature has fluctuated considerably. There have been times when our planet has been much warmer than it is today and also times when it has been much cooler. These changing weather conditions were, in the past, caused by natural phenomena. What is alarming is that today, overwhelming scientific evidence shows that for the first time in the long history of our planet, human beings and not nature, are responsible for the earth's changing climate.

Earth is now warmer than at any time in the past 1,000 years, and there has been a consistent rise in the global average temperature from the beginning of the industrial revolution, which matches the sharp growth of carbon emitted by human activities. The implications of climate change are serious and manifold and the problem needs to be addressed with urgency.

The most obvious effect of climate change is the rising temperature, but this is just the first symptom of a sick and damaged ecological system. This rapid rise in temperature has many serious implications. To begin with, a rise in global average temperatures leads to the melting of glaciers and polar ice caps which in turn leads to rising sea levels.

Current projections show that before the end of this century, sea level rises will affect areas of our earth populated by hundreds of millions of people. Most notably, from our subcontinent's perspective, much of the area of Bangladesh will be submerged in water, leading to mass migration and a potential refugee crisis of unparalleled proportions.

Changes in temperature also cause changes in weather patterns which can cause both heavy rains and severe droughts, making many wet regions wetter and dry regions even drier. This is



FOREWORD

Foreword

already being experienced in India and across the world. Extreme weather conditions such as hurricanes, floods, forest fires and heat waves are also on the rise and these have been directly linked to climate change. Furthermore, mosquitoes that spread dangerous vector-borne diseases such as Malaria and Dengue thrive in warmer conditions so global warming increases health risks.

Apart from the harmful effects of climate change, the detrimental and immediate impact of increasing pollution levels is only too apparent in our Indian cities. Air pollution causes and exacerbates respiratory problems and it is estimated that every year 1.6 million people die worldwide due to smog related illnesses. Water pollution contaminates over 80% of all freshwater bodies in India and affects the lives of millions of people who either lack access to safe drinking water or are still afflicted by preventable diseases such as Typhoid and Cholera.

Climate Change and pollution also pose a threat to stable and sustained economic growth. According to the Organisation for Economic Co-operation and Development (OECD), economic damages and losses arising from climatic destabilisation could cost the global economy up to US\$ 970 billion - on the basis of the present models, which, tend to be optimistic. It is therefore imperative for all sections of civil society, including multinational companies, small businesses and offices to earnestly redress environmental issues through sustainable practices.



Why should Corporations Go Green

“ There is no business to be done on a dead planet. ”

David Brower, Sierra Club Executive Director, 2008.

Tackling the environmental problems faced by our planet is not just a moral imperative; it makes good commercial sense as well. Corporate firms have the ability to reach out, educate and influence their many employees as well as customers and suppliers to adopt green practices as well as initiate eco-friendly practices in the office.

Going Green has many advantages:

- Measures designed to reduce the use of material resources and energy, are not only beneficial to the environment, but can also lead to considerable savings and help a company achieve cost-cutting targets.
- Going green forms a worthy and integral part of a company's overall Corporate Social Responsibility (CSR) programme and demonstrates your company's commitment to the environment.
- Green initiatives give commonality of purpose and bring about cohesiveness amongst employees while improving the condition of their working environment.
- Increasingly, government regulatory authorities, share-holders and customers expect global brands and companies to take definitive steps to minimize their environmental impact.
- Helps in meeting environmental reporting standards.
- Offers numerous public relations opportunities and increases visibility.
- Sustainable development helps prevent or ease the damaging economic effects of climate change.



“ Socialism collapsed because it did not allow prices to tell the economic truth. Capitalism may collapse because it does not allow prices to tell the ecological truth. ”

Oystein Dahre, Vice President ESSO, 2007

GO GREEN

A PRACTICAL GUIDE

A Practical Guide

Responsible environmental practices make good business sense and are synonymous with a well managed organization. Despite keen interest and the best of intentions to undertake environmental initiatives, the pressures of running an organization's core business often leaves managers little time and resources to research and implement environmental practices. There is plenty of information telling organizations what they should be doing but a lack of practical advice on how exactly to do it.

This booklet aims to solve teething problems by giving clear, concise information about environmental issues and listing the practical steps needed to create a green office environment. Although the manual is aimed at offices, the principles are equally applicable to all other sectors particularly schools, colleges, hotels and small businesses.

The Manual will help you:

1. Develop an appropriate environmental policy for your own establishment
2. Identify the key areas needing intervention - what can be done and how it can be done
3. Plan a successful and cost effective approach to reduce consumption patterns
4. Provide useful statistics and case studies, including prototypes that can be replicated
5. Dispel myths about sustainable practices
6. Provide contact details of eco-products and eco-services

A Planned Approach

Draw-up an environmental policy for your establishment setting out your commitment to environmental improvements. If the company has an environmental policy, then review the current environmental practices of your office and assess how they affect the environment. Identify the strengths and weaknesses of your policy and decide what can be done to improve its vision and implementation. There is often a gap between policy and action. Therefore, all policies must be backed up with an achievable action plan. Identify the practical steps you can take, set improvement targets and allocate responsibilities. An action plan may look impressive but it is only effective if you monitor improvement over a period of time. Regular reviews will help you ascertain what has been achieved, where the problems lie and what can be done to resolve bottlenecks. Finally, going green is an on-going process and an annual review will help define new objectives and targets to ensure continuous improvement. If it all seems too daunting a task, take one small step at a time.

A PLANNED APPROACH

Going Green: Step by Step

- Enlist senior management commitment for the Green Office Project.
- Form a Green Committee or Core Group in the office comprising of staff committed to spear-heading the Green Office Project.
- Ensure all key departments are represented on the Green Committee.
- Allocate time and resources to the Green Office Project.
- Conduct a baseline survey for each department to assess present resource usage and consumption patterns.
- Based on the survey results, draw up an environment management program focusing on improving resource and energy efficiency and minimizing waste within each department.
- Empower the Green Committee and raise employee awareness on environmental issues through workshops, seminars, film screenings, posters, mailers etc.
- Run regular campaigns on the benefits of energy conservation, waste management etc. through in-house magazine, intranet or any other internal communication channel.
- Encourage the Green Committee or Green Champions to implement initiatives that support sustainable behaviour in their own departments.
- Set monthly or quarterly targets for reducing energy/paper/stationery consumption on a personal and departmental level.
- Use this guide to implement energy saving measures for various office appliances across the different departments.
- Establish proper procedures for waste segregation by providing recycling bins for different materials.
- Promote the purchase of recycled materials such as copier paper, wherever possible.
- Buy green corporate merchandise as far as possible.
- Acknowledge good ideas and publicise successes, however small, and set up a reward system.
- Maintain the momentum and enthusiasm of the Green Office Project by periodically organising green activities outside the office such as nature trails, beach clean-ups, world environment day celebrations, photography competitions etc.



RESOURCE USAGE

Resource Usage and Responsible Purchasing

Our purchasing practices can have significant and far-reaching impacts both socially and environmentally. Where we buy products from; what they are made of; who has made them; and what will happen to them when they are finished, are all important issues which need to be considered. The *whole life* cost of a product needs to be pre-determined as products we use everyday – such as stationery, computers and vehicles – have hidden costs, and effects on the environment throughout their lifecycle. For example, at the beginning of a product's life it will have an effect on the environment as raw materials will be used to produce it; at the end of a product's life it may need to be disposed off in a landfill or incinerated; and, throughout its life it may require electricity or fuel to function.

Responsible procurement is about determining *whole life* costs and more importantly, deciding whether we need the product/service in the first place; whether the amount of extraneous packaging could be reduced; if transport can be reduced; if the product is part of an ethical production process; and, ensuring that you buy from companies that demonstrate they are environmentally and ethically responsible as well.

To elaborate, if you (a) buy an energy-efficient photocopier designed to work well with recycled paper and refilled toner cartridges, (b) copy double-sided whenever you can, (c) set up an effective paper recycling system, and (d) format the photocopier to power save when you're not using it, over its seven-year life you will:

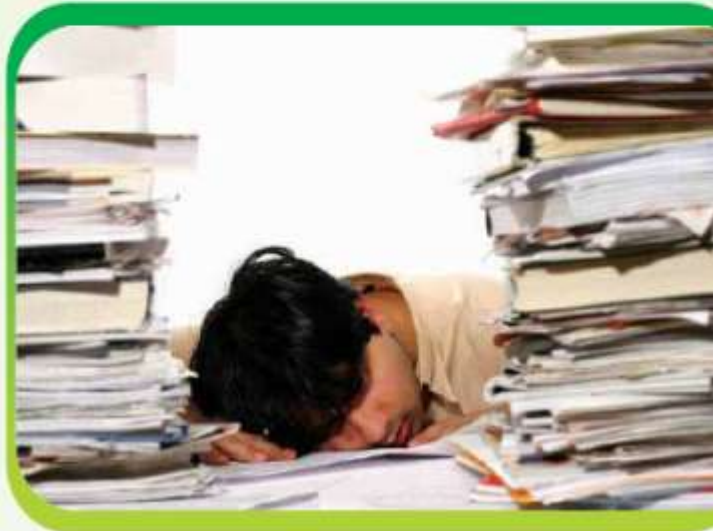
- Reduce the electricity you use by up to 80% and save on your electricity bills.
 - Halve your paper and toner bills.
 - Reduce greenhouse gas emissions from electricity, paper and toner by almost 75%.
 - Save 50 trees which would otherwise have been chopped down to make paper.
- Engage your staff in an environmentally-sustainable practice.
 - Increase productivity through improved staff morale.
 - Enhance your company's profits.



In effect, whether it is a piece of paper or any item of stationery used in the office, however small it may be, it should not only be viewed as a purchasable resource. Even if an office can afford the steep cost of energy or an expensive item of resource, we have to realize that every resource has a high environmental cost attached to it.

Paper

The advent of the personal computer and the internet were heralded to bring with them the dawn of the paperless office, but without a change in mindset, habits and practices this concept never truly revolutionized the business world. Today, it is essential for companies to start taking measures to reduce the amount of paper they consume, and also to use recycled paper wherever possible. Using non-recycled paper leads to deforestation which worsens global warming, wipes out the habitats of thousands of animal and plant species and is a leading cause of the unprecedented rate of extinction witnessed over the last century. Moreover, paper is also a dominant source of waste. India generates more than 7.2 lakh tonnes of dry waste per annum of which 40% is paper.



Actions for Conservation:

- Use recycled paper or non-wood based paper, eg. bagasse, wherever possible.
- Always try to print double sided. This will obviously reduce your paper consumption by 50% and also reduce your paper costs by the same amount.
- Only print documents that you really need. Use electronic documents as much as possible, especially for internal office work.
- Where hard copies are required, consider sharing copies of reports and memos within the office instead of printing a separate copy for each member of staff.

**Did
you
know**

Recycled paper can use up to 90% less water and 50% less energy than making virgin paper from trees.

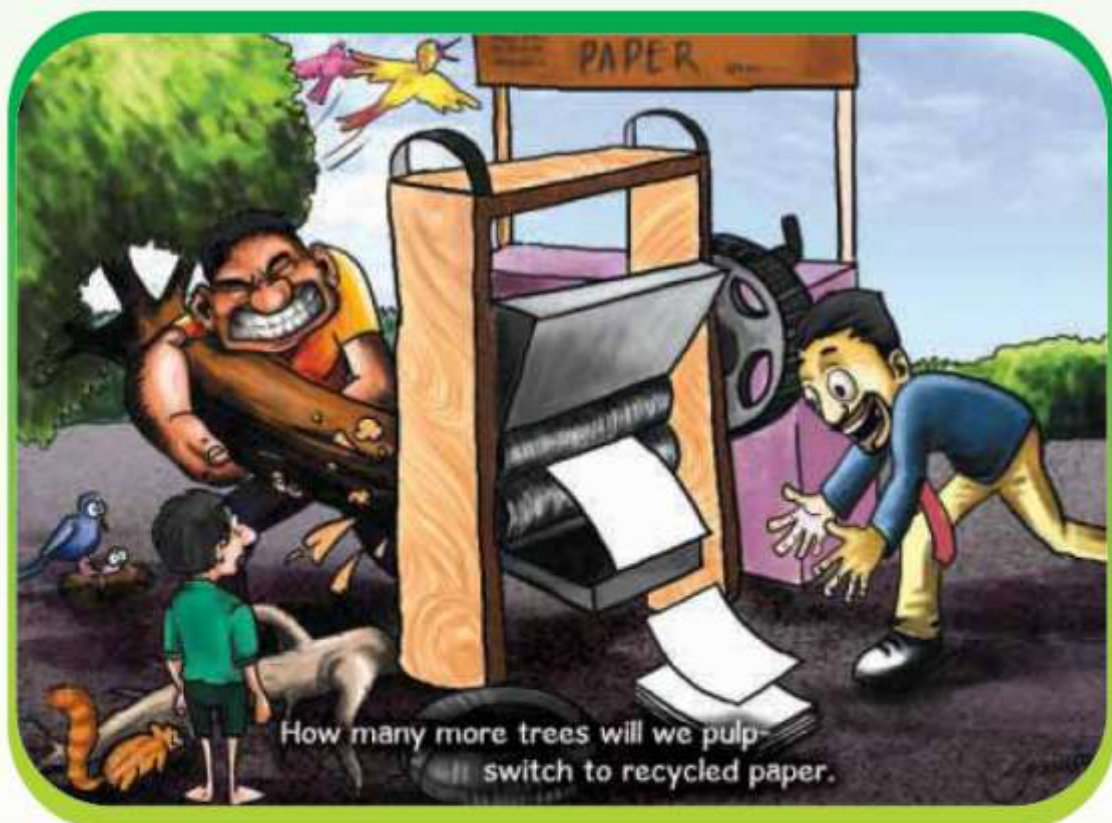
PAPER

Paper

- Preview documents before sending them and make sure they are formatted to reduce paper usage: if there are only a few lines on a fresh page try to reduce the text or formatting slightly so that an extra page isn't wasted.
- Buy unbleached (chlorine-free) paper. The process of bleaching paper causes water pollution and other airborne environmental damage.
- Re-use paper to make rough notes or for draft printing.
- Ensure you have proper designated bins so that used paper can be sent for recycling.
- For shredded paper have tie-ups with organisations that can collect this paper on a regular basis.*

* Stree Mukti Sanghatana is a Mumbai based organization that collects dry waste in bulk.

ITC has started a program called 'Wealth out of Waste' (WOW) to collect paper waste separately for recycling. ITC offers payment for waste paper.



Printers and Printing

The environmental impact of printing is in large part linked to the use of paper and hence, many of the recommendations in the Paper section are highly relevant. The process of printing also uses considerable energy and ink cum toner liquid, and it is necessary to consider how to reduce the impact of this common office activity vis-à-vis these resources as well.

In terms of energy consumed, much depends on the size, speed and type of printer. The average inkjet printer will consume approximately 30 watts (w), but a desktop laser printer will consume approximately 230w, a small office laser printer 320w and a large officer laser printer will consume as much as 550w when active. Inkjet printers are therefore preferable, and although they are slower than

laser printers, modern inkjets can produce printing of comparable quality. It is essential that all printers have a 'sleep' or 'standby' mode and that this is enabled in the office after a short period of inactivity. In inkjet printers, this will reduce the energy consumed to a third of what it is when active and in laser printers it will be half of that when active.

Actions for Conservation:

- Use inkjet printers wherever possible in the office. Have a combination of inkjet and laser printers and encourage staff to only use the laser printer for printing voluminous documents which need to be printed quickly.



**Did
you
know**

Upgrading to the latest MFD (Multi-Function Device) and getting rid of the separate fax, scanner, printer and copier machines saves over 20-40 kg of CO₂ per week and uses less space. They also warm up quickly and use next to no power on standby.

PRINTERS AND PRINTING

PRINTERS AND PRINTING

Printers and Printing

- Ensure your printer has a standby mode, which is activated after a short period of inactivity.
- When you purchase a printer ensure that it can print double sided.
- Make sure the printer has ink and toner saving settings and that these are used as default settings in the office.
- You can cut down on cost and environmental impact by refilling inkjet cartridges instead of buying new ones. This can be repeated 5-6 times before print quality suffers.
- Many companies now recycle laser cartridges too. Long-life cartridges that are cheaper to use per page are also available and some of the latest laser printers have a long lasting print drum and only require toner refills.
- Have a policy that printers are to be turned off and shut down at the end of the working day.
- Reduce your margin settings so that your printer uses less paper.
- Color printing uses more ink, so print in black and white whenever you can.
- To conserve even more ink, print in draft mode. It will generally lighten the shade, but you'll still be able to read your copy clearly.
- Reuse paper that's already printed on one side by manually feeding it into copiers and printers. Use it for internal documents like drafts and short-lived items such as meeting agendas or temporary signs.

Myth: *Refilled toner or ink cartridges leak everywhere and make an incredible mess.*

Reality: *This problem is avoidable and manufacturers and suppliers should be prepared to guarantee effective performance.*

For more tips on how to save printing ink and paper visit: <http://www.printgreener.com>



Photocopiers

Photocopiers are highly energy intensive machines and stringent power management measures need to be taken to reduce the impact of their use on the environment. Electricity consumption while copying varies from a few hundred watts to several kilowatts, generating from a 250g to more than 3 kg of greenhouse gases.

The major component of photocopier energy use is the heating of components which fuse toner to paper. These components are often kept hot even when the machine is idle or in standby mode and though less electricity is consumed, it can still be as high as 400w. The warm up time of a photocopier is therefore important. If the machine warms up quickly, it can be switched off when not in use thus saving considerable energy and money.



Actions for Conservation:

- Ensure that all office photocopiers are switched off at night, and where possible, at any time during the day when not in use.
- Make sure that the photocopier has an automatic standby setting and that this is quickly activated. Remember however that especially in the case of photocopiers, it is better if the machine is switched off.
- When buying or replacing a photocopier look for energy efficient features such as the speed with which the machine warms up. This will enable you to keep your photocopier off as much as possible.
- You can save energy by 'batch copying' which means saving up all your copying for a particular time or set of times in the day. This means the photocopier can be switched off the rest of the time.
- Practice efficient copying - use the size reduction feature offered on many copiers. Fit two copies onto one standard sheet.
- Also remember to adopt the paper saving measures mentioned above when photocopying.

Myth: Using recycled paper causes photocopiers to jam and makes you use more paper.

Reality: Modern equipment and good quality recycled paper is now readily available in India by which paper jams are easily avoided.

PHOTOCOPIERS

Computers and Desktop Monitors

Computers are now used in virtually all offices and form a vital part of any business all over the world. They can help to reduce our environmental impact by reducing the need for printed or photocopied documents and can therefore save paper, ink, toner, energy and other resources. Computers themselves are quite energy efficient, and their energy consumption can be reduced drastically if the right sort of equipment is purchased. A desktop computer uses approximately 60-120w when active, with modern devices being considerably more energy efficient than their older counterparts. In addition, a 15 inch Cathode Ray Tube (CRT) monitor will use 60w when active whilst a 17-21 inch monitor will use closer to 100w. These energy consumption figures can be considerably reduced.



It is essential that employees have a standby setting enabled after a short period (say 4 minutes) of inactivity. In standby mode a desktop computer will consume between 10-25w, about $1/3^{rd}$ to $1/6^{th}$ of what it consumes in active mode. Energy consumption can be further reduced when buying or replacing monitors by purchasing Liquid Crystal Display (LCD) monitors instead of CRT. LCD monitors consume roughly half of their CRT counterparts making them incredibly efficient. Further efficiency can be achieved by using laptops. These use only 15w and are therefore far more energy friendly than any sort of desktop and screen.

Did you know?

Screen savers are energy wasters. Most computers use about twice as much energy lighting up the screen as they use for processing. Originally, screen savers were designed to stop screens being burnt by a constant image, but they aren't needed for modern screens. Not only can screen savers use as much energy as a full screen of work, but many require considerable processing energy as well. If you want to save energy you can set your screen saver to 'none' or 'blank screen' or better yet, just turn off your monitor altogether.

Computers and Desktop Monitors

Actions for Conservation:

- Consider buying a laptop since it is far more efficient, both in its energy consumption and the materials that go into making it, than a desktop computer and monitor.
- Buy smaller monitors. A 17 inch monitor can consume 40% more energy than a 15 inch monitor.
- Also consider buying LCD screens as they are more space efficient, are healthier on the eyes and consume far less energy than standard CRT monitors.
- Try to ensure that your staff shut down their computers and monitors if they are not going to use the computer for 45 minutes or more.
- Make sure that all computers in the office have a standby setting which is activated after about 5 minutes of inactivity.
- Use computers to save on cost and energy consumption. Send electronic mails with document attachments instead of using couriers.

Myth: Turning off computers crashes the hard drive.

Reality: Switching off computers will have no significant effect on the useful lifetime of the hard disk. In the past larger hard drives were degraded by mechanical stress.

Today some manufacturers specify a life of 40,000 power cycles for their hard drives. That is equivalent to 30 stop/start cycles for each working day over five years.



COMPUTERS

Lighting

Lighting accounts for a considerable proportion of the total energy consumed in offices, with some studies stating that it amounts to 30% of energy consumption in offices generally. Fortunately, it is also one of the easiest areas in which energy consumption can be reduced to benefit the environment. Traditional light bulbs convert only 10% of the energy they use into light - the rest is wasted and escapes as heat. More environmentally friendly light bulbs such as CFLs (Compact Fluorescent Lamps) last longer and consume less than 1/4th the energy of conventional bulbs whilst providing the same amount of illumination. Even though CFLs are more expensive than conventional bulbs, across their life span, they lead to net savings.



Note on LEDs:

LED stands for Light Emitting Diode and is a new technology that will revolutionize the world of lighting. LEDs are highly energy efficient, even more so than CFLs and do not have the mercury contamination problem associated with CFL bulbs.



The quality of LED lighting is also better and even healthier as it does not emit an ultra-violet or infra red radiation. Caution - LED lighting is not recommended for reading purposes due to its stronger light and hence must be avoided in reading lamps and electrical devices positioned close to the eyes. However, it is ideal for larger spaces such as stairwells, corridors, foyers, parking lots etc.

Lighting

If you can, replace all your bulbs with LED lamps, which are freely available in the market and like CFLs while they are more expensive, the saving accrued over the lifetime of the bulb, far outweigh any initial costs.

Actions for Conservation:

- When replacing light bulbs ensure that you only purchase CFLs or LEDs so that in time you completely eliminate all traditional bulbs from your office.
- Get your employees to switch off the lights in a room when not in use even if only for a very short time.
- Try to use natural light wherever possible. Keep office windows clean and encourage your staff to open blinds rather than switch on electric lights. This reduces the dependency on electric lights and also creates a more pleasant, natural working environment.
- Place lighting in the right places and in the correct direction. This will help reduce the number of lights that need to be switched on for satisfactory illumination.
- Consider installing motion sensors for lights, especially in less frequently used areas of the office e.g. store rooms.
- Also consider putting timers on indoor and outdoor lights to reduce energy use.
- When designing a building or redesigning an old one, try to incorporate all the suggestions mentioned above.



**Did
you
know**

Properly designed and implemented day lighting strategies can save 50% to 80% of lighting energy.

LIGHTING

TRANSPORTATION

Travel and Transportation

Transportation of staff to and from work and business related travel form a very major part of the total emissions of most businesses. Air travel is particularly harmful to the environment, not only because it consumes vast amounts of fossil fuels, but also because it emits carbon at a far higher altitude into the atmosphere. In addition to global warming concerns, the chemicals that planes emit exacerbate the problems of smog and acid rain. Whilst business travel is often seen as one of the perks of a job, companies must take steps to reduce the amount of business related travel its employees undertake. Technology should be used to cut down on the amount of business travel undertaken by employees.

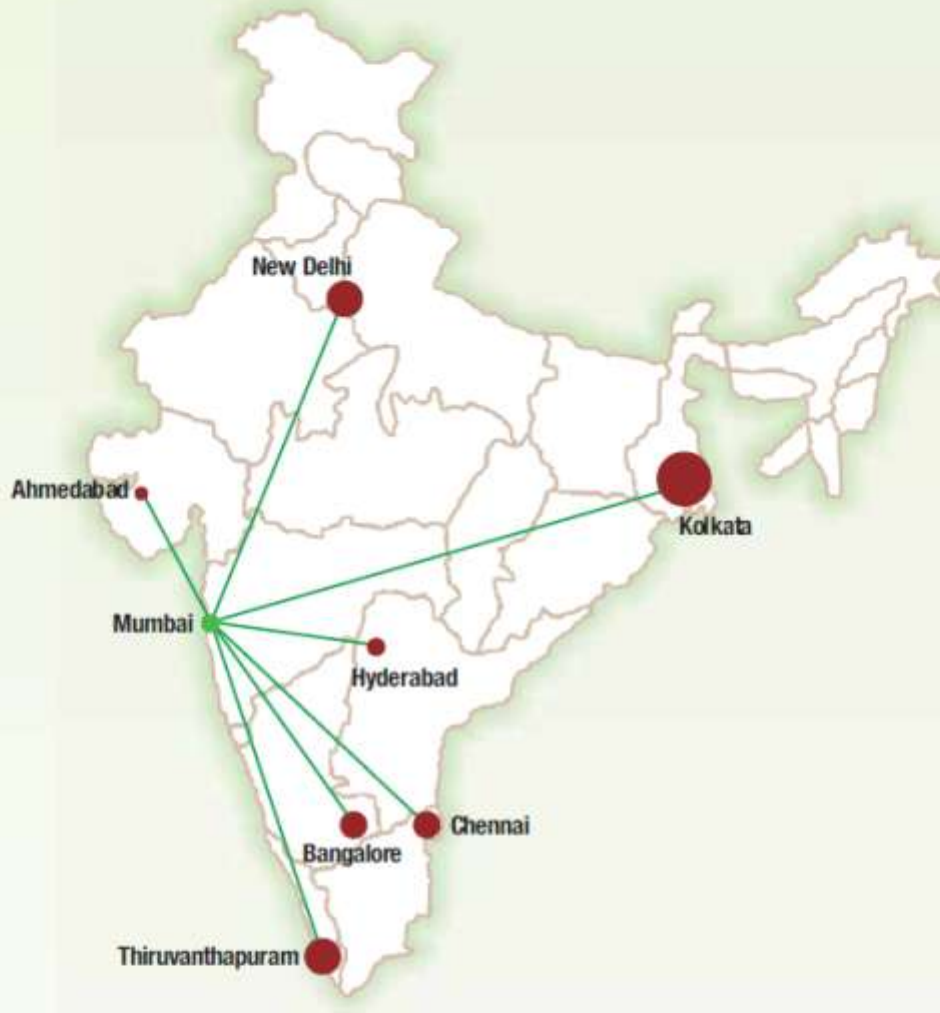


Video and telephone conferencing, instant exchange of e-mails and the ability to send large documents electronically can all be used to achieve this reduction in travel.

Steps should also be taken to encourage employees to use public transport to come to work. Where this is not feasible, companies should try to organize private hire buses which can take employees to and from their work place. Reducing the amount of carbon emitted by travel and transport could cut down a company's costs significantly and prove extremely helpful for the environment.



Travel and Transportation



CO₂ Emissions (kg/person)

| Destination | Mumbai | Kolkata | Chennai | Bangalore | Hyderabad | Ahmedabad | Thiruvanthapuram | Delhi |
|------------------|--------|---------|---------|-----------|-----------|-----------|------------------|--------|
| Delhi | 122.63 | 140.43 | 165.38 | 175.67 | 139.87 | 103.14 | 215.18 | Nil |
| Mumbai | Nil | 169.71 | 115.65 | 100.76 | 87.23 | 69.23 | 121.27 | 123.11 |
| Kolkata | 168.73 | Nil | 144.97 | 165.18 | 132.37 | 166.53 | 223.71 | 140.83 |
| Chennai | 115.50 | 146.05 | Nil | 53.00 | 71.00 | 154.28 | 78.74 | 165.66 |
| Bangalore | 100.77 | 165.38 | 52.46 | Nil | 70.51 | 134.82 | 55.87 | 176.32 |
| Hyderabad | 87.23 | 132.38 | 71.26 | 71.79 | Nil | 106.71 | 124.17 | 136.84 |
| Ahmedabad | 69.17 | 166.20 | - | 147.84 | 106.78 | Nil | 226.59 | 103.56 |
| Thiruvanthapuram | 122.31 | 224.80 | 78.74 | 55.87 | 124.17 | 233.03 | Nil | 211.36 |

Source: International Civil Aviation Organisation

TRANSPORTATION

TRANSPORTATION

Travel and Transportation

Actions for Conservation:

- Avoid flying to meetings (or for that matter using any other form of transport) by using video or telephone or web conferencing wherever possible.
- Offset your carbon emissions whenever plane travel is necessary- many airlines have a direct link at the time of booking tickets which helps you do this.
- Travel economy class wherever possible. This is much cheaper for the company and also reduces your personal carbon emissions for the flight.

Note: You can use the following websites to help you off set your carbon emission the next time you take a flight:

<http://www.co2balance.uk.com/>

<http://www.carboncreditagency.com/>

<http://www.carbonneutral.com/>

- Use trains, buses or cars for short journeys instead of using flights.
- Provide incentives for employees to take public transport, walk or cycle to work wherever possible - this can be cheaper than providing parking for employees.
- Publicise bus and train transport routes in the office.
- Encourage car pooling or share-a-taxi schemes at the office and arrange for people who live close by to each other to avail of these schemes.
- Arrange for private hire buses to bring employees to work and drop them home in the evening.

The average carbon emissions in grams per passenger kilometer of the various forms of transport:



172 g/pk PLANE
(economy)



131 g/pk CAR



89 g/pk BUS



65 g/pk TRAIN

Air Conditioners

Air conditioners are highly energy intensive and form a significant proportion of the energy consumed by offices. In Indian cities, where the weather is often uncomfortably hot, the need for air conditioners is understandable. However, there is a tendency to cool offices to uncomfortably low levels, thus driving up energy consumption and costs, as well as creating an unpleasantly cold atmosphere in the office. Measures should be taken to reduce office dependence on air conditioning where possible. Where air conditioning is necessary steps must be taken to reduce the energy consumed. Air conditioners should be set to a reasonable temperature which sufficiently cools the office without consuming vast and unnecessary quantities of energy and making the office feel like it is situated in the arctic!



Actions for Conservation:

- Keep the AC in your office at 23-24 °C. This is the optimum temperature for cooling the office sufficiently whilst being relatively economical on the energy consumption.
- Use timers and temperature control sensors to regulate output.
- Install reflective window tint on your windows to reduce the amount of heat absorbed inside the office.
- Use blinds to reduce heating of the office by the sun's rays and help reduce the need for air conditioning.
- Try to use fans instead of air conditioners, especially in the cooler months of the year. Fans consume 10 to 100 watts whereas ACs consume between 600-3000 watts and are substantially more expensive to run.
- Regular maintenance is required for AC units. Keeping the filter clean can reduce energy consumption by approximately 10%.

AIR CONDITIONERS

AIR CONDITIONERS

Air Conditioners

- Shade your AC from direct sunlight- this can boost efficiency by 5%.
- Ensure that if you have a central AC system, it has separate thermostats so that people can adjust the temperature in their work area to their comfort instead of having a uniformly cold office.
- Make sure ACs are promptly switched off at the end of the working day. If people are working late, they could be organized into one section of the office where the AC is kept on instead of having to cool the entire floor space.
- Make sure that the ACs are the right capacity. A simple rule of thumb is a one ton AC for a space of 200 sq. ft. (commercial) or one ton per 300 sq. ft. (residential).
- Check the Energy Efficiency Rating (EER)* of a new AC.
- Allow your employees to dress comfortably and casually at the office. They will be more comfortable and won't need the AC to be set to a very low temperature.

*Fact: *The Bureau of Energy Efficiency has rated most electrical appliances on a 5 star rating system such as televisions, air conditioners, refrigerators, microwaves, toasters, irons, washing machines etc. A unit with a higher star rating will consume less electricity than a lower star rated one (<http://www.bee-india.nic.in/>).*



Stationery and Corporate Merchandise

Stationery is another area in which wastage can be drastically reduced. Staff should be encouraged to share hole punches, rulers, staplers etc. For printer cartridges and pens - refills should be used instead of buying wholly new items. It is also better to buy ordinary pencils instead of the plastic pencils which are far more costly and have a greater impact on the environment.

Always create a list of office supplies and then mark out items that are not necessities. For example most computers today have an inbuilt calculator and fax system. Think! Do you really need an extra fax machine or a hand held calculator?

Corporate merchandise gives a direct insight into the vision, mission, policies and management of a company. Promotional products only provide messages to your clients about your company and its services while eco-friendly promotional products provide an added message of "we care for the environment!" Organizations should buy eco-friendly corporate gifts to demonstrate to their customers, employees, and clients that they are helping to save the planet even while promoting their business. There are a number of eco-friendly

options available in the market such as re-usable bags, solar powered clocks, ahimsa silk etc. Even the diaries and calendars can be made from eco-friendly paper which will be a continuous assertion of the company's environment friendly orientation.



STATIONERY

Stationery and Corporate Merchandise

Actions for Conservation:

- Do an audit of office supplies and make a list which should ideally have three sections: expendables, non-expendables, and work room supplies.
- Try as far as possible not to use single use items such as disposable ball-pens.
- Follow the steps outlined above to reduce paper usage such as printing double sided, formatting documents carefully, and sharing documents in the office.
- Follow the steps outlined on how to save stationery such as using refills for pens and cartridges and sharing punches and staplers.
- Discourage excessive use of stationery by implementing an ordering system. This allows you to monitor departmental trends and target high use areas for reduction.
- Set up a system whereby wastage is checked periodically. Ensure people shred documents and do not throw paper clips away.
- Use staples judiciously as it is a one time use item. Use paper clips instead wherever possible.
- Reuse envelopes for inter- and intra-office use and paper for making rough notes. Put multiple address boxes on the cover for easy usage.
- Hold an annual 'stationery amnesty'. A large amount of material can be recovered by asking staff to hand in all their unused equipment for re-use.
- Order supplies in bulk to reduce packaging.
- Re-use cartons and other bulk packaging material.
- Fewer sheets mailed means saving paper and reduced postage.



Waste Management in the Office: Reduce, Reuse, Recycle

Eliminating waste at source through careful purchasing and better utilization of materials is the best way to make dramatic savings in your waste costs and reduce your impact on the environment. Where waste cannot be eliminated completely, try to reduce the amount generated. Following this, you should aim to re-use and then recycle as many of the products in your office as possible. Disposal of waste to landfill or incineration should be a last resort after all the above options have been considered.

Reduce:

- Take steps to reduce energy consumption in all the areas outlined in the preceding sections.
- Select office supplies carefully and ensure you use products with less packaging material.
- Avoid using disposable catering products such as sachets of sugar and ketchup, plastic cutlery and polystyrene plates and cups.
- Ensure that vending machines allow use of china cups rather than only plastic vending cups.
- Do not provide bottles of mineral water to your guests and employees - this is highly harmful for the environment. Instead install filtered water coolers and fill jugs of water for your guests.
- Try not to over order food at conferences and meetings by confirming accurately how many people are attending.
- Help conserve water by installing low-flow faucets and toilets in restrooms and other common areas. This will also help conserve electricity by reducing your water heater's output.
- Reduce paper towel waste in washrooms by providing air dryers as an alternative. Take it a step further and provide reusable linen towels that can be laundered.



Reuse:

- Make the best use of computer equipment by upgrading and reusing old machines for low power work, e.g. as print servers.
- Renovate furniture rather than buying new replacements. This can save up to 50% of the cost of new products.
- Donate to local centres and charities that reuse computers, furniture, & other materials from businesses.

WASTE MANAGEMENT

WASTE MANAGEMENT

Waste Management in the Office: Reduce, Reuse, Recycle



Recycle:

It is important not only to ensure that you collect paper and other used materials within your office for recycling, but also to complete the recycling circle by purchasing office materials made from recycled components. Paper, stationery products, toilet paper and refuse sacks, glass, cans and plastics are all recyclable. An effort should be made to educate employees on the benefits of recycling including segregation of waste. Separate bins should be provided for glass, paper, plastic and metal so that the recycling process is made more efficient. Arrangements should be made for these various bins to be collected and sent to the respective facilities for recycling.

Waste Management in the Office: Reduce, Reuse, Recycle

E-waste:

E-waste or electronic waste refers to a type of waste consisting of any broken or unwanted electrical or electronic device. This includes computers, monitors, mobile phones, entertainment systems and other such devices. It is extremely important that e-waste be properly dealt with at e-waste processing centres. If treated properly, e-waste is a valuable source for secondary raw materials. However, if not treated properly, it is a major source of toxins and carcinogens. India produces 3.3 lakh tonnes of e-waste annually. The market for used electronics has expanded considerably in India because of higher re-use and cheaper repair capability. The regions around Delhi and Bangalore have particularly well equipped e-waste processing centres. You should ensure that all your discarded electronic items from the office professional bodies qualified to treat e-waste. *

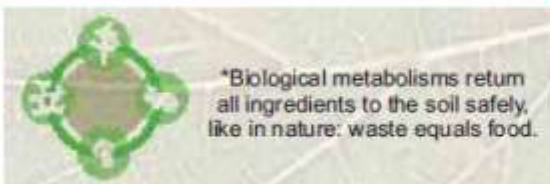


* **Ecoreco is a company that uses excellent technology and machineries for recycling of electrical & electronic waste at its recycling facility in Mumbai.**

Cradle to Cradle (C2C)

The concept of 'Cradle to Cradle' conveys a message of Do Good instead of Do Less Bad. Cradle to Cradle, also called C2C, is essentially a revolutionary approach applied to the design and manufacture of all the products that we use in our everyday lives. C2C draws its inspiration from the nutrient cycles

we find in nature, where one man's waste is another organism's food (quite literally). In C2C all the materials and energy used to make something flows cyclically in an endless loop where it is either used as material for another application or is harmlessly returned to nature. In C2C no natural resource must be wasted and nothing must ever reach a dumpsite. For example, with C2C you don't try to design a bottle from less plastic but rather design a bottle from materials (such as glass) that can fully enter a new life cycle: either back to nature or back into the design process as a new product.



*Biological metabolisms return all ingredients to the soil safely, like in nature: waste equals food.



*Technological metabolisms use materials that can be disassembled and reused indefinitely - and never head for the landfill.

WASTE MANAGEMENT

OFFICE ENVIRONMENT

Greening the Office Environment

One of the easiest and most rewarding ways of going green at work is simply to bring in some plants. Office plants have a lot of advantages. People enjoy the look and presence of plants; they are aesthetically pleasing and show your staff and visitors that you care about your office environment.

Just as importantly, plants have been shown to significantly improve the air quality inside buildings by absorbing toxins and raising humidity. Modern office buildings spew out hundreds of chemicals from the new carpets, paints, upholstery, computers and plastics. Researchers have found that one potted plant per 100 sq. ft. of floor space can help clean the air. Plants make great gifts as well.

Given below is a list of six plant varieties that can grow effortlessly and easily in offices in India. These plants can grow in the shade and do not require much care.

Quite Literally with Plants!



Money Plant



Ficus benjamina



Philodendron



Nephthytis (White Butterfly)



Aglaonema



Diffenbachia

**Did
you
know**

Potted plants improve office workers health and reduce the number of sick leave staff take. Research carried out by the Agricultural University of Norway suggests that plants in the working environment have a beneficial health effect.

Psychologists looked at 305 office workers in three offices with differing amounts of greenery. An American study, at Washington State University, found that plants reduced workers' stress and improved their reaction times by 12%. Workers in a green office also had lower blood pressure and less mental fatigue.

Employee Awareness - Taking it Home

One of the most effective ways for companies to help protect the environment is through raising employee awareness about environmental problems and solutions so that they can take this knowledge home with them and spread it amongst their families and friends. Frequent workshops, lectures, seminars and presentations should be arranged for your employees across all levels to educate them about the following:

- Global warming
- Harmful effects of air and water pollution on health
- Importance of reducing, reusing and recycling
- How to segregate waste properly
- Awareness about the energy consumption of the various electrical appliances
- Importance of energy-saving measures when using these appliances
- Cost savings that can be made by going green
- Need for civic responsibility in society and so on.

There are many non-profit organisations such as the Centre for Environmental Research and Education (CERE) that could help in educating employees on environmental issues through presentations, group discussions, lectures and booklets and these should be availed of where possible. If employees are aware of the environmental threats facing society and the means by which they can mitigate these threats, they will not only adopt green measures at the office (their sincere cooperation is vital for any green office initiative), but also at home. Through them, their friends and family will also become aware and will all make an effort in society to save energy consume less and ensure that they and others around them do not needlessly pollute the environment.



EMPLOYEE AWARENESS

LARGE SCALE INTERVENTIONS

Large Scale Office Design Interventions

When making new premises or refurbishing the office, there are a number of steps that can be taken to create an environment friendly office.

- Design and build buildings using energy efficient techniques and products, including photovoltaic systems, proper insulation and treated windows.
- Design for dual plumbing to use recycled water for toilet flushing or a gray water system that recovers rainwater or other non-potable water for site irrigation.
- Use dimensional planning and other material efficiency strategies. For example, design rooms on 4-foot multiples to conform to standard-sized wallboard and plywood sheets.
- Utilize passive design strategies like building orientation, use of shading and natural light to improve building energy efficiency.
- Design landscapes using native plants that require minimal irrigation. Use micro-irrigation for areas needing water.
- Strive for LEED (Leadership in Energy and Environmental Design) certification.
- Choose durable materials and furnishings to reduce the costs and waste associated with replacement. When possible use construction and building materials that are environmentally friendly or made from recycled goods.*
- Instead of using standard paints or wallpaper use eco-friendly paints for your office building and interiors.**
- Wherever possible, install a rain water harvesting system.



* Instead of using plywood for designing cubicles, desks and benches – use chipboard made from recycled beverage cartons. More on www.damanganga.com or <http://www.ecolinkindia.com>

** AURO is the first paint producer worldwide to be certified as "carbon neutral company" by the Climate Neutral Group. More on www.auropaintindia.com

TECHNOLOGY INITIATIVES

Technology Initiatives

There are many initiatives which are a little more complex in their implementation but can have a great positive impact on the environment.

- Server consolidation and virtualisation in data centres with more carefully planned airconditioning that optimises cooling and energy consumption.
- In community processing centres, attempt thin computing which utilises the spare capacity available in a typical high end desktop processor to facilitate multiple work screens.
- Invest in modern technology and all-weather machines, such as ATM's which can operate with minimum airconditioning and thus saves electricity.
- Manage work forces, eg. sales personnel, in shifts so as to share resources.
- Corporate sign boards can be powered by solar energy with onsite panels.
- Opt for factory-fitted CNG models for company vehicles.

Non-Financial Reporting

A new trend is growing in the dynamics of corporate reporting which rewards companies that report their Environmental, Social and Governance (ESG) information along with their financial performance. Investors, analysts, regulators, media and other stakeholders are looking for this type of information to gain a more comprehensive view of the company's performance and a sense of comfort in knowing that a company cares about the environment. It also gives greater understanding of the company's performance and its risk factors to the users of this information. According to the KPMG International 2008 Survey on Corporate Responsibility Reporting, 80% of the Global Fortune 250 companies today release ESG-related data, up from 64% in 2005. ESG reporting is not yet

mandatory and may take a couple of years to be adopted by all companies. Being a new trend, the reporting formats are not yet standardized but to counter these lacunae, work is already underway to develop an information standard called XBRL (Extensible Business Reporting Language) to provide a uniform standard for ESG data.



NON-FINANCIAL REPORTING

CASE STUDIES

CASE STUDIES (IndusInd Bank)

Banks have a meaningful role to play in the pursuit of sustainability and IndusInd Bank is taking its responsibility to the community and the environment seriously. As part of their sustainability agenda, IndusInd Bank launched a campaign titled *Hum aur Hariyali* which is an integral part of the Green Banking Project launched in the International Year of Planet Earth, 2008.

The aim of the Green Banking Project is primarily to increase awareness about environmental issues; and through this awareness, achieve the goal of sustainable development. The initiative endeavours to green the bank's office spaces, reduce resource consumption, minimize carbon footprint and support environmental initiatives.

IndusInd Bank has a comprehensive plan to reduce their carbon footprint and some of the initiatives they have put in place are:

- Making available the contents of the project on the intranet/website for creating awareness amongst the employees.
- Training sessions have been conducted by the Centre for Environmental Research and Education (CERE).
- Popularising "e-statements" by constantly appealing to all account holders.
- Various initiatives have been taken for reduction in the usage of paper - giving more emphasis on double-sided printing and avoiding faxes and photocopying.
- Energy conservation has been implemented by reducing excessive lighting, putting off ACs during the lunch hour and by staggering the timings of photocopiers for optimum use.



CASE STUDIES (IndusInd Bank)

- Launching / implementing bank wide projects like Solar Powered ATMs, Thin Computing, E-Archiving and retrieval to minimize resource usage and e-waste.
- Introduction of conference calls, web casts and video conferencing to minimize travel costs.
- By creating flexi-office space and facilitating a work-from-home plan and e-conferencing.
- By greening data centres and virtualization initiatives.
- By partnering with vendors to extend green practices and e-procurement.
- By switching over to cleaner fuels like CNG and LPG for the bank owned cars.
- Supporting finance programs with incentives to go green.
- By participating in sustainable outbound and community activities. Supporting social forestry programs like planting trees, and maintaining gardens which display green messages.



CASE STUDIES

CASE STUDIES

CASE STUDIES (The Orchid Hotel)

The Orchid Hotel is a unique example of an organisation which has employed environment friendly practices in every aspect from architecture and design to all the products it uses and the services it provides.

Design and Architecture:

- The hotel has employed Passive Energy Conservation Efforts in its design by making maximum use of natural light in design and using eco-friendly cement and paints.
- The interiors are done in Nuwud MDF (Medium Density Fibre wood) which is manufactured using cotton stalks and wood recycled from old buildings.
- They also have triple glazed windows to maximise AC efficiency.



Energy:

- The hotel has unique energy saving measures. It uses energy efficient lighting like PL Lamps/Fluorescent Tubes and other techniques like using fuzzy logic (which senses the load inside the refrigerator and cools it accordingly) in mini bars.
- Electronic Reduced Voltage Soft Starter cum Energy Saver for AC Compressor and the heat generated from the air conditioners is used to provide hot water to the guestrooms, laundry, toilets and kitchen.
- Another unique and interesting feature is the master control panel in the guest rooms. On pressing the green button the thermostat of the air-conditioning unit is stepped up by 2 °C . The saving in electricity resulting from the 2 °C increase in temperature is translated into rupee terms and the same is displayed on the guest folio and profile. A certificate is then issued to the guest who has voluntarily participated in conserving energy. A database is maintained of all these guests and the hotel has a direct mail link with them, telling them about our ongoing environmental activities.

CASE STUDIES (The Orchid Hotel)

Water:

For water conservation, they have sewage treatment plants, water efficient cisterns and flushes and drip irrigation for the lawns.

Garbage:

- The hotel strives to make the area a zero garbage zone through waste reduction and recycling.
- The hangers used in guestroom are made from sawdust and the fruits are served on request so as to avoid wastage.
- Reusable laundry bags and cane baskets are provided and a laundry button is incorporated in the master control panel, eliminating the use of laundry pick up cards.
- Newspapers are delivered on request.
- Specially designed cloth shopping bags with the environmental messages are provided for guests to go shopping.
- Even stationery is made from eco-friendly material and all paper products at The Orchid Hotel contain at least 50% recycled content.
- The hotel uses cut flowers to the minimum and uses potted plants instead. Many other measures like using slippers made from natural reed and cane trays for shoes to be sent for polishing instead of using a plastic bag.
- Other measures include refillable flasks in the rooms and the glasses too are turned upside down and kept in the tray, thereby doing away with having to wrap each glass in a plastic bag and consequently generating more waste for the hotel.
- Single serving items are minimized and the hotel uses cloth mats instead of paper ones.



CASE STUDIES

CASE STUDIES (Wipro)

Wipro Technologies, one of India's leading I.T Firms, believes that Social, Economic & Environment issues are an essential part of good Corporate Citizenship along with its regular business operations. Wipro endeavours to minimize the impact of its business activities on the environment while advancing economic development.

Wipro has developed the following framework for eco-action. There are five themes and seven goals identified for implementation.

The themes are

1. Ecological Surplus Organization: Remodel internal operations (reduce, recycle and offset) to reach neutrality/surplus in the four elements of ecological sustainability (energy, water, waste and biodiversity).
2. Business Investments: Identify a portfolio of sustainability investments that will generate new lines of revenue and profits.
3. Beyond Wipro: Partner with regional, national and global groups as part of larger sustainability initiatives in energy, water, waste & biodiversity. Motivate employees to effect sustainability-driven changes in their personal lives and to influence others in their circle.
4. Transparent Reporting: Progress towards a framework of sustainability-centered measuring and reporting, based on globally accepted guidelines e.g. GRI (Global Reporting Initiative), GR3 principles, the AA1000 framework.
5. Risk Planning & Mitigation: Assess risks to Wipro arising from climate change and ecological degradation. Publish the risk-mitigation plan.



CASE STUDIES (Wipro)

The Seven goals for eco-action are

- 1) To become a carbon-neutral organization within a specified time frame and then to become a carbon-positive organization within a defined time frame.
- 2) To become a water-positive organization within a specified time frame.
- 3) To set new standards in recycling of waste.
- 4) Recycle electronic and non-electronic waste to a set target in a specified time frame.
- 5) To achieve a defined level of biodiversity footprint within Wipro's campuses by a defined timeline. To facilitate the preservation and spread of biodiversity outside Wipro through appropriate partnering.
- 6) To achieve transparency in Wipro's sustainability reporting in line with globally accepted reporting frameworks Aa000, GRI, etc. Wipro's 2008-09 Annual Report should be in line with above.
- 7) To incorporate the expected effects of climate change and other areas of environmental degradation into Wipro's risk strategy. Wipro's risk planning and mitigation must have a distinct section on the above.

EcoEye Charter - Five Themes



| | |
|-----------------------------------|--|
| 1 Ecological Surplus Organization | Remodel operations (reduce, recycle & offset) to reach neutrality/surplus in the four identified areas (energy, water, waste & biodiversity) |
| 2 Business Investments | Build a portfolio of investments that will open new opportunities of sustainable business |
| 3 Beyond Wipro | Associate/partner with suppliers, NGOs, government, forums (regional, national & global), etc, as part of larger sustainability initiatives in energy, water, waste & biodiversity |
| 4 Transparent Reporting | Establish a framework of sustainability centered measuring & reporting based on G3 guidelines |
| 5 Risk Planning & Mitigation | Assess risks to Wipro arising from climate change & ecological degradation; Publish the risk mitigation plan |

© 2008 Wipro Ltd

CASE STUDIES

ENERGY CONSUMPTION

Energy Consumption by Office Equipment

| SNO | OFFICE APPLIANCES | TYPE | E (Active) | E (Suspended) | DATA SOURCE |
|--------------------|-------------------|---------------------------------------|------------------------|---------------|---|
| 1 | Desktop Computers | | 60-250 | | www.michaelbluejay.com |
| | | | 130 | | BarryHydro Distribution Inc. |
| | | | 55 | 25 | Kawamoto et al. (2001) |
| 2 | Monitors | Monochrome | 30 | | BarryHydro Distribution Inc. |
| | | Colour | 60 | | BarryHydro Distribution Inc. |
| | | CRT | 80 | | www.michaelbluejay.com |
| | | LCD | 35 | | www.michaelbluejay.com |
| | | CRT 14-15 | 61 | 19 | MACEBUR (1998) |
| | | CRT 17-21 | 96 | 16 | MACEBUR (1998) |
| 3 | Laptops | | 15-45 | | www.michaelbluejay.com |
| | | | 11 | | BarryHydro Distribution Inc. |
| | | | 15 | 3 | Kawamoto et al. (2001) |
| 4 | Printers | Dot Matrix | 50 | 26 | BarryHydro Distribution Inc. |
| | | Laser | 300 | 150 | BarryHydro Distribution Inc. |
| | | Inkjet | 10 | 3 | BarryHydro Distribution Inc. |
| | | Inkjet | 32 | 10 | Meyer & Schaltegger (1999) |
| | | Inkjet | 53 | 13 | MACEBUR (1998) |
| | | Inkjet | 17 | NA | Kawamoto et al. (2001) |
| | | Laser | 231 | 28 | Meyer & Schaltegger (1999) |
| | | Laser | 278 | 27 | MACEBUR (1998) |
| | | Laser-Small Desktop | 130 | 75 | Wilkins & Hosni (2000) |
| | | Laser-Desktop | 215 | 100 | Wilkins & Hosni (2000) |
| | | Laser-Small Office | 320 | 160 | Wilkins & Hosni (2000) |
| Laser-Large Office | 550 | 275 | Wilkins & Hosni (2000) | | |
| | | Laser | NA | 77 | Kawamoto et al. (2001) |
| 5 | Photocopiers | Low Speed (< 21 cpm) | 115 | 62 | Australian National Appliance and Equipment Energy Efficiency Committee |
| | | Mid Speed (21-44 cpm) | 180 | 75 | Australian National Appliance and Equipment Energy Efficiency Committee |
| | | High Speed (> 44 cpm) | 290 | 97 | Australian National Appliance and Equipment Energy Efficiency Committee |
| | | <12 cpm | 778 | 56 | Meyer & Schaltegger (1999) |
| | | 12-30 cpm | 1044 | 179 | Meyer & Schaltegger (1999) |
| | | 31-69 cpm | 1354 | 396 | Meyer & Schaltegger (1999) |
| | | 70+ cpm | 2963 | 673 | Meyer & Schaltegger (1999) |
| | | Floor Mounted Photocopier (mid range) | 600-1000 | 100-250 | BarryHydro Distribution Inc. |
| | | Small Personal Photocopier | 250 | 60 | BarryHydro Distribution Inc. |
| 6 | Facsimile | | 100 | 15 | BarryHydro Distribution Inc. |
| 7 | Air Conditioners | Central AC (2.5 tonnes) | 3500 | | www.michaelbluejay.com |
| | | Window Unit AC | 900 | | www.michaelbluejay.com |

RESOURCE PEOPLE FOR GREEN OFFICE PRODUCTS & SERVICES



PAPER

CERE Resources

Chlorine-free, bagasse-based paper
Eco-friendly toilet paper, hand napkins,
kitchen rolls

Cell: 098673 55443

E-mail: cere_india@yahoo.co.in

Garnett Specialty Paper Pvt. Ltd.

Recycled, chlorine-free paper

Tel: 0260-2400521

E-mail: contact@garnettpapers.com

Website: <http://www.garnett.co.uk/>

Indian Native

Recycled Paper and Eco-friendly Printing

Mr. Neeraj

Cell: 09821236438

E-mail: indnative@satyam.net.in

Le Papier Inc.

Recycled, handmade paper

Tel: 022-30918377 / 24914155

E-mail: smeeta@lepapier.com

Ariem Enterprise

Handmade Stationery

Mr. Sameer Vaidya

Cell: 09223362266

E-mail: ariens4u@yahoo.co.in /
ariens@indiatimes.com

Indo Afrique Paper Mills (P) Ltd.

Bagasse and other recycled paper

E-mail: info@indoafrique.com

Tel: 020-26345283 / 26345364



ENERGY

ABPS Infrastructure Advisory

Mr. Ajit Pandit & Mr. Balwant Joshi

Email: contact@abpsinfra.com

Autonic Energy Systems Pvt. Ltd.

Mr. Sachin Rele

Tel: 022-28801990 / 28806699

Email: inquiry@autonicworld.com

Website: www.autonic.in

Tata BP Solar India Ltd.

Tel: 080-66601300 / 40702000

Tel: 020-26138783 / 26138262

Email: tatabp@tatabp.com

LEDLITE Corporation

LED Lighting Products

including Solar Powered LED Lighting.

Service types: consulting,

design, engineering

Tel: 022-22041632

RESOURCE PEOPLE

RESOURCE PEOPLE FOR GREEN OFFICE PRODUCTS & SERVICES



WASTE

Stree Mukti Sanghatana

Ms. Jyoti Mhapsekar or Ms. Sharada Sathe
Tel: 022-55745848 / 25297198
Email: smsmum@vnsi.com

Green Cross Society

Mr. Shantaram Shenai
Tel: 022-26329978, Cell: 09324156273
E-mail: garbageguru@vsnl.com,
wastetohealth@hotmail.com

E-Waste Recycling

Eco Reco Recycling Limited
Tel: 022-40052951 / 52 / 53
Email: info@ecoreco.com
Website: <http://ecoreco.com>



WATER

Eureka Forbes Institute of Environment

Mr. Rudolf D'Souza
Tel: 022-24301725
Email: rudolf@eurekaforbes.co.in

Dr. Ajit Gokhale
Cell: 09870423023
Email: ajit_naturalsolutions@gmail.com

Mungekar Associates

Mr. Nandan Mungekar
Email: mungekar_asso@yahoo.com
Cell: 09869055711

OFFICE PLANTS & LANDSCAPING

Ms. Vijaya Chakravarty
Email: vijaya.chakravarty@gmail.com
Cell: 09870481887



COMPUTERS, LAPTOPS, PRINTERS & IT SOLUTIONS

Wipro InfoTech offer a range of products (desktops and laptops) and services that are environment friendly and energy efficient as well as non hazardous and solve e-waste problems.

More on: <http://www.wipro.co.in/Products/greenpc/html/0002core.htm#1>

HP Products and services are totally geared towards integrating environmental concerns such as energy efficiency and provisions for reuse and recycling.

More on: <http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/index.html>

RESOURCE PEOPLE FOR GREEN OFFICE PRODUCTS & SERVICES



ECO-PAINTS

AURO is the first paint producer worldwide to be certified as "carbon neutral company" by the Climate Neutral Group.

Website: www.auropaintindia.com



GREEN CORPORATE GIFTS

Nature craft, folk craft and eco-crafts make for unique corporate gifts. Try to buy corporate gifts from organisations that support an important cause, produce goods that have a minimal impact on the environment and carry a message of conservation and sustainability.

More on:

<http://www.auroville.com/> (online shop)

<http://www.kala-raksha.org/>

<http://www.tilonia.com/>

http://www.inheritanceindia.co.in/craft_gallery.htm

ecocomer@vsnl.net

<http://www.yusufmeherally.org/products.html#17>

<http://shrujan.org/products.html>



ROOFS, CHAIRS & BENCHES MADE FROM TETRA PAK WASTE

Totally waterproof and fireproof roof sheets made from the poly-AL component of tetrapak waste.

Daman Ganga Pvt. Ltd.

Mr. Tushar Shah

Website: www.damanganga.com



GENERAL

For more information on making your office greener and sustainable or for further information on any of the information and resources mentioned in this guide please contact:

Centre for Environmental Research and Education (CERE)

Ms. Kitayun Rustom

E-mail: cere_india@yahoo.co.in

Website: www.cere-india.org

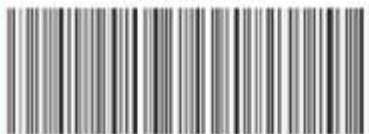
RESOURCE PEOPLE

Green Office Manual

The *Green Office Manual*, developed by CERE with the support of IndusInd Bank, is a quick and easy-to-use guide on sustainable practices and resources in the corporate office environment. This Green Guide offers green tips on a range of topics from the environment-friendly use of stationery to the installation of renewable energy. In addition to offering green advice on the consumption front, the Guide also recommends step-by-step directions to offices on going green. These steps help inform the reader about employee awareness, eco-friendly consumption patterns and the use of energy efficient and cost effective alternatives to current office practices. In addition to a host of general green tips, the *Green Office Manual* also incorporates success stories and case studies of sustainable practices adopted by companies as a demonstration of the importance of the *green office* and the effectiveness of corporate sustainability initiatives.



Price Rs. 100/-



ISBN - 978-81-902018-7-2

Centre for Environmental Research and Education (CERE)

J. S. Municipal School, 3rd Floor - Room # 78, Nana Chowk, Mumbai - 400 007, INDIA.
Tel: 022-23811522 / 23811581 • E-mail: cere_india@yahoo.co.in • Website: www.cere-india.org