A collection of positive stories on the environment

OF THE WORLD

Issued in global interest by Responsive Industries Limited and Axiom Cordages Limited
Disclaimer

Toss this book away at your own peril. This is not just another book on the environment. This one is different. In content, colour and energy. It celebrates (ah, when was the last time we ever did on anything related to the environment) the green champions of the world. In evangelical style, we want every single member of our homo sapiens fraternity to read this. Hence, the book is unpriced. Copy liberally, scan, upload and share. Don’t xerox or print! Also, a word for all those from whose books and magazines we have copied and credited: don’t take us to the cleaners. There is some thing more precious at stake. Our lives!

Responsive Industries Limited manufactures PVC-derived products like vinyl flooring, artificial leather cloth, soft sheeting and rigid blister packaging products that are completely recyclable. We are responsive to consumer needs, making us environmentally responsible. We manufacture flooring for homes, offices, malls, hospitals, schools, bus coaches, railways and airplanes, among others. We control 85% of the flooring needs of the Indian bus coach industry. We also manufacture soft sheeting for use in stationary, table mats and raincoats. Our artificial leather cloth is used in automobiles, soft luggage, upholstery, bags and shoes. Our blister packaging products cater to pharmaceutical and FMCG companies, and Responsive is one of the first to get the prestigious US DMF (FDA) registration. Responsive’s factories comply with the highest eco-friendly procedures and materials. The result: more than just a product manufacturer, we are a globally respected brand.

Axiom Cordages Limited is a new-generation rope manufacturer using advanced equipment, proactive marketing and an innovative outlook towards its products and customer satisfaction. Axiom cordages are manufactured using state-of-the-art equipment and knowhow from Europe. Our ropes are made from high-grade co-polymers, making them one of the safest, strongest and most reliable braided and twisted ropes in their category. The use of a fully equipped R&D facility and testing laboratory complement sophisticated manufacturing processes and equipment in use. The result is that Axiom cordages meet all international standards and more than pass the strict test parameters of demanding inspecting agencies like Bureau Veritas, DNV and Lloyds Register of Shipping, SGS, Germanischer Lloyds, etc.

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The paper used in this document is environment friendly.
Dear fellow greeners,

This is a book on the environment but not about the number of kilometres of the Arctic ice cap we have lost, the decline in the number of polar bears, the increase in Celsius all over and all that.

This is a book on why - despite the worsening environment - there is still hope.

Compiled and created with an objective.

To inspire.

Let us all make the world a better place to be in!

Sincerely,

Atit Agarwal, CMD, Responsive Industries Limited and Axiom Cordages Limited
You may be overcome, however, by feelings of helplessness. You are just one person in a world of 6 billion. How can your actions make a difference? Best, you say, to leave it to decision makers. And so you do nothing.

Can we overcome apathy? Yes, but only if we have hope. One reason for hope lies in the extraordinary nature of human intellectual accomplishment. A hundred years ago, the idea of a 747, of a man on the moon, of the Internet remained in the realm of science fiction. Yet we have seen those things and much, much more. So, now that we have finally faced up to the terrible damage we have inflicted on our environment, our ingenuity is working overtime to find technological solutions. But technology alone is not enough. We must engage with our hearts also. And it’s happening around the world.

Even companies once known only for profits and pollution are having a change of heart. Conoco, the energy company, worked with the Jane Goodall Institute (J.G.I.) in Congo to build a sanctuary for orphaned chimpanzees. I formed this partnership when I realized that Conoco, during its exploration, used state-of-the-art practices designed to have the least possible impact on the environment. Many other companies are working on clean forms of energy, organic farming methods, less wasteful irrigation and so on.

Another reason for hope is the resilience of nature – if it is given a helping hand. Fifteen years ago, the forests outside Gombe National Park in Tanzania had been virtually eliminated. More people lived there than the land could support. J.G.I. initiated the Lake Tanganyika Catchment Reforestation and Education Project (TACARE), a programme active in 33 villages around the park. Today people improve their lives through environmentally sustainable projects, such as tree nurseries and wood lots. We provide health care, family-planning and education.
programmes, especially for women. As their education increases, their family size tends to drop.

While pollution still plagues much of the world, progress is being made. This May (2002) in Sudbury, Ont., I saw new forests that were recolonizing hills destroyed by 100 years of nickel mining. The community raised the money and worked for months spreading lime and planting vegetation on the blackened rock. I released the first brook trout into a once poisoned creek there.

Animal species on the brink of extinction can be given a second chance through protection and captive breeding – even if preserving a habitat conflicts with economic interests. A company in Taiwan planned to build a rapid-transit line right through the only major remaining breeding ground of the rare pheasant-tailed jacana. There was an outcry, but it was the only economically viable route. Environmentalists worked with the company to come up with a solution – moving the breeding ground. Water was diverted back into nearby wetlands that had been drained by farmers, and suitable vegetation was replanted. In 2000 five birds hatched in their new home, and when I visited there the next year, even more birds had moved to the site.

I derive the most hope from the energy and hard work of young people. Roots & Shoots, J.G.I.’s programme for youth from preschool through university, is now active in 70 countries. The name is symbolic: roots and shoots together can break up brick walls, just as citizens of Earth together can overcome our problems. The more than 4,000 groups of young people are cleaning creeks, restoring prairies and wetlands, planting trees, clearing trash, recycling – and making their voices heard.

I feel deep shame when I look into the eyes of my grandchildren and think how much damage has been done to Planet Earth since I was their age. Each of us must work as hard as we can now to heal the hurts and save what is left.

Source: Written by Jane Goodall for the Time magazine

When priests start turning green, it means the world has got serious. KE Sreejit, chief priest of the Ayyapan temple in Adyar, campaigned against plastic use during the Sabarimala pilgrimage from November to January. His insistence: use butter paper and biodegradable bags instead.

Source: The Times of India
The environmental engineering department of IIT Kanpur developed a toilet to re-use flushed water rather than discharge it with the excreta. The solution: not allowing water and solid waste to mix. Vinod Tare, the brain behind the toilet, says: “This will bring down fresh water consumption to a large extent, considering that each flush consumes 5 to 10 litres of water.” When these toilets are flushed, the vortex movement of water cleans the pan surface and pushes the solid waste downwards into a tank at the centre. While the centrifugal force – acting outwards from a centre of rotation – presses water to the surface of the pan, the geometric design of the surface guides it through a circular path downwards towards the separator. At the separator, the water is guided into pipes in the sides that take it to another tank. The separation, says Tare, is close to 99 per cent. The pipes, fitted with poly vinyl chloride microfilters to clean the liquid, do not cost more than Rs 100 and last for at least a year.

Source: Business Standard, 5.2.08

Japan is the most energy-efficient developed country on earth, according to most specialists, who say it is much better prepared than the United States to prosper in an era of higher global energy prices....Its population and economy are each about 40 percent as large as that of the United States, yet in 2004 it consumed less than a quarter as much energy as America did, according to the International Energy Agency, which is based in Paris. Products that meet the Top Runner goals are awarded a green sticker, while those that fail get an orange sticker. Japan’s trade and industry ministry says consumers heed the stickers, pushing manufacturers to raise the energy efficiency. The average air-conditioner now uses two-thirds less electricity than in 1997, and the average freezer 23 percent less, the ministry said.

Source: Martin Fackler's article in The New York Times (6th January 2007); quoted by Thomas L. Friedman in his book Hot, Flat and Crowded

**Zero-Waste Toilets!**

**Land of Rising Conservation**
Deanburn Primary School in Bo'ness is a futuristic, eco-friendly school that opened in September 2005. It has grass roofs to help insulate the building, keeping it warm in winter and cool in summer. Rainwater is used to flush the toilet by means of a gutter system that collects the water and channels it into the cisterns. The school also has 'breathing walls' to reduce the need for artificial ventilation. Recycled wallpaper in classrooms improves air quality. The school also features a wind turbine, excess electricity from which will be sold to the National Grid to help raise funds for education. The building is being seen as an icon for Falkirk Council's imaginative design approach to protect the environment using sustainable methods and construction materials.

In his book Hot, Flat and Crowded, Thomas Friedman tells the story of a Marine Corps general in Iraq who requested solar panels to power his bases. Asked why, he explained that he wanted to win his region by "out-greening al Qaeda." Instead of trucking in gas from Kuwait at $20 a gallon — money that fuels oppressive petro-dictatorships — in convoys that are vulnerable to roadside bombs, why not beat the insurgents by taking away their targets and their funding?

Source: www.wired.com
Virgin Atlantic flew a jumbo jet from London to Amsterdam, with one of its four fuel tanks filled with a blend including babassu oil and coconut oil derived from nuts picked from the Amazon forest, to show that it could produce less carbon dioxide than normal jet fuels. The Boeing 747, which reached a planned maximum altitude of 7,620 meters, or 25,000 feet, had one unmodified engine running on a mixture of about 25 percent biofuel and the rest on standard jet kerosene. This is significant as the European Commission indicated that greenhouse gas emissions from aviation accounted for about 3 percent of the total in the European Union and had increased by 87 percent since 1990 as air travel became less expensive.

Virgin Atlantic powered by biofuel

ECOFONT IS A TRUETYPE FONT DESIGNED TO SAVE INK and toner, developed by the Utrecht-based Spranq creative communications agency. The agency shot the open-source Vera Sans font full of holes. As the Company’s website claimed: “After Dutch hokey cheese, there now is a Dutch font with holes as well.” According to Spranq, the Ecofont can cut your ink or toner usage by “up to 20 percent” - although the company warned that “the smaller the fontsize, the lower the saving.” Ecofont is available via a free download, and is compatible with Windows Vista, Windows XP, Mac OS X, and Linux.
Captain Planet, a fictional character in an animated television series, is summoned whenever the five Planeteers combine the forces of their elemental rings, emphasizing the show’s premise that only by collaborating can people protect the planet and provide solutions to environmental problems. The Captain does not belong to any specific culture or ethnicity; his hair is forest green and skin sky blue.
Spurred by a desire to beat Pakistan, Bihar has planted one crore saplings on a single day, engaging three lakh people under the rural job scheme. Islamabad's environment ministry had made it to the Guinness Book of World Records by planting 541,176 saplings on July 15 2009. The Indian reply was nearly 20 times better and has ensured three years' employment for three lakh elderly villagers, who have now been tasked with protecting the saplings after planting. The project was spread across 7,500 villages in six districts in north Bihar's Tirhut division. Tirhut commissioner S.M. Raju, the man behind the mission, told The Telegraph: "As soon as I read about Pakistan's environment ministry getting the Guinness certification, I planned to beat that record." While non-fruit-bearing trees such as the neem, arjun, jamun, gulmohar and peepal were planted along the state and national highways, fruit-bearing ones such as the guava, mango, lychee, lemon and amla were planted in the villages.

Source: The Telegraph, article by Nalin Verma

Surya is the world's first energy-donating nightclub. Period. Ecological and night club? Ahhh. This is how the concept works: the high-tech dance floor generates the friction that generates the electricity. Plus urinals are waterless, taps are automatic, toilets are low-flush, tables are of magazines, walls of old mobile phones and sofas are of bathtubs! There's just no limit to thinking green....

Proprietor: Andrew Charalambous (Dr Earth). Venue: Pentonville Road, North London.
Germany's bright idea

Every night at 11, Dörentrup village in central Germany switched off all streetlights to save money. Dieter Grote and his wife worried about their children’s safety. Grote contacted the local utility Lemgo and worked out a solution: turning on village lights with a telephone call. The result: Lemgo developed a special modem and software and with Grote launched Dial4Light – the first project of its kind in Europe. The residents of Dörentrup can now switch on the lights on a specific street whenever they like after registering for the scheme online and providing a phone number. Each time they need to see in the dark, they call the Dial4Light number, either recite or enter the six-digit code – which can be found online or on every lamp in each street - that corresponds to the stretch of road they want lit. Within seconds, the lights are on, and they'll stay on long enough for someone to walk from one end of the street to the other. Utility company Lemgo estimates it will cut Dörentrup’s carbon emissions by some 12 tons each year compared with leaving the streetlights on all night.

Lemgo says there are plans to launch the scheme in five other countries, including Norway, Sweden and France, and also says it has received requests for its technology from as far away as Dubai and the U.S.

Trivia

British Airways introduced a ‘CO₂ emission calculator’ on its website, letting passengers pay to offset the carbon dioxide generated by their flights. Lufthansa recently equipped an Airbus A340 with a 1.5-ton mobile laboratory to track gases and compounds.
Wish green

Narmada Samagra, a group aiming to clean River Narmada, minted 500 special curative coins (composition: 96% copper and 4% silver) for the International River Festival held in February, offering pilgrims with the scope to wish green as they fling coins in the river. Inspired by the therapeutic effect of the copper-silver ionisation, the group now intends to make another 25,000 coins, which will be sold through traders and select jewellers in Madhya Pradesh.

Green guru

A 400 km environment awareness walk in the Himalayas yielded a collection of 60,000 waste plastic bottles, 10,000 chewing gum wrappers and 5,000 carbonated drink cans, collected by monks and nuns from ravines near streams and rivers. This was conducted by the 12th Gyalwang Drukpa, spiritual head of Drukpa lineage, with 750 monks, nuns and other disciples from Manali to Leh. "Conditions were very tough but the journey was gratifying because in today's uncertain world where we search for true happiness, we got an opportunity to commune with nature, which was really therapeutic," the Drukpa said. The Drukpa’s was easily one of the biggest contingents ever attempting such a trek comprising 38 trekkers and cooks as well as 320 mules carrying supplies.
South Korean scientists have succeeded in producing polymer without the use of fossil fuels. The team from the prestigious KAIST University and the Korean chemical company LG Chem focused their research on Polylactic Acid (PLA), a bio-based polymer which holds the key to producing plastics through natural and renewable resources. “We succeeded in producing the polymers used for everyday plastics through bioengineering, rather than through the use of fossil fuel based chemicals,” said Prof. Sang Yup Lee, who led the study. “PLA is considered a good alternative to petroleum based plastics as it is both biodegradable and has a low toxicity to humans. By developing a strategy which combines metabolic engineering and enzyme engineering, we’ve developed an efficient bio-based one step production process for PLA and its copolymers,” said Lee. “This new strategy should be generally useful for developing other engineered organisms capable of producing various unnatural polymers by direct fermentation from renewable resources,” he added.

Greentechnology

Xerox Corporation, an American company, has invented a eco-friendly technology to make prints whose images will last for a day, allowing paper to be reused. To prioritize the green concept, the company intends to launch high-density paper and mechanical paper, besides shifting firms from paper to electronic documentation. At present, the company is trying to improve its carbon footprints and is encouraging installation of various green technologies across its firms.

(Source: adapted from Economic Times, 4.9.08)
A new study has found that kids living in greener neighbourhoods are more active. Researchers from Universite de Montreal, Canada have shown that the presence of nearby parks was strongly associated with girls walking to school and boys engaging in leisure walking. For every additional park located within a half mile of their home, researchers found, the likelihood of walking to school more than doubled among girls and leisure walking by boys increased by 60 percent. This is important because active transportation is a promising public health strategy for increasing overall physical activity, and for helping curb the obesity epidemic, said Tracie A. Barnett, Ph.D., lead author of the study and a researcher at Sainte-Justine Hospital Research Center and Université de Montréal in Montreal, Canada. For the analysis, the researchers looked at 600 kids enrolled into the Quebec Adipose and Lifestyle Investigation in Youth (QUALITY) study.

Source: The Hindustan Times

Swedish power giant Vattenfall, which has a large presence in Germany, is implementing the first conventional thermal power plant with carbon capture and storage technology (CCS). This means emission-free coal-fired power plants will become a reality, with the first such facility slated to start commercial production in the Lausitz region near Berlin by 2015. Instead of using air, the coal is fired in an atmosphere of pure oxygen and re-circulated flue gas. By cleaning and condensing out the flue gas current, the remaining CO2 can be separated at 98% concentration and made available in a compressed form for storage and reutilisation.
Arjun Vallury’s home has natural light even in the basement. The taps let out just 1 litre of water a minute — a fifth of what gushes forth from other taps in the neighbourhood. He makes 40 per cent of his electricity with solar power plant. All his water is solar heated. His two-storey, 15,000-sq-ft building is the only residential structure in the country to have an internationally recognised ‘Platinum’ tag. All this cost just about 10 per cent more than a regular home of the same size would have taken to construct. In just six months after he built his dream home, Vallury was saving over 60 per cent in power bills.

Source: Hindustan Times, article by Chetan Chauhan and Aditya Ghosh

Rainwater harvesting systems on the roof can collect water to be used to flush toilets.

Solar panels can heat bath water.

Wind turbines on the roof can be used to generate electricity.

Non-toxic paints should be used on the walls. These use water rather than petroleum-based solvents and do not emit smog-producing pollutants.

Use Compact Fluorescent Light bulbs (CFLs), which use 20% less energy than incandescent bulbs.

Dual-flush toilets help conserve water with controlled water outlet options.

Use graywater from baths sinks, kitchens and washing machines to flush lavatories.

A rain garden can help reduce storm-water run-off.

Native landscaping requires less irrigation and maintenance.

A green building can cost between 5 and 10 per cent more to build than a regular building, but these costs can be recovered in just 2 years in power and water savings.
The new Hyderabad international airport developed by GMR group, for example, is a green facility. The airport is Asia's first airport to register under USGBC LEED NC certification for silver rating, and is going to be the world's first certified green building. The airport consumes 25% less energy than what a similar facility without the environment-friendly features would consume. The new airport has an integrated cargo complex, flight kitchens, cargo agents building, 308 room hotel, fuel pumping, airline offices and many other additional facilities. The energy-efficient features of the new airport comprise reduced overall conductance for the walls and roof, high performance glass with low shading coefficient, optimum visual light transmittance, overhangs and vertical fins to reduce solar gains, efficient chillers, efficient lighting using T5 lamps, amply day-lit common spaces with photo sensor-controlled electric lighting, economiser and primary and secondary chilled water pumping for increased energy-efficiency. The pumps used in the airport’s air conditioning system are variable speed driven, which takes care of energy consumption; it has a pick-up sensor, which based on the heat load and number of passengers automatically controls the temperature of the airport. "The energy consumption without the green features would have been around 23 million KWH per annum but with all the green building technology the actual consumption is estimated at 17 million KWH," said a spokesperson for the GMR group.

Source: The Economic Times, 3.6.08
ST JAMES SCHOOL IN KOLKATA SWITCHES OFF FANS, LIGHTS AND air-conditioners in the whole school - first for 10 minutes and then, over days, up to half an hour. While this unique programme is the school’s bid to help conserve power, authorities feel it will also teach kids the basics of tolerance and perseverance. This follows a survey that showed that the school will be able to save 340 units of power, which, if quantified in monetary terms, works out to Rs 1,430 by cutting off power for 10 minutes. The money saved will be spent on providing scholarships to students who cannot afford to pay tuition fees. Even the principal is not exempt; even his air-conditioners go dead!

Source: The Times of India, 15.4.08

The environmentally friendly coffin is a strong, three-layered cardboard produced from sustainable trees. The 15-kg coffin supports a 200-kg body and requires half the energy for combustion compared to an ordinary coffin, resulting in just a third of the hazardous gas emissions. For each coffin purchased, Tri-Wall KK plants 10 trees in a national reserve in Mongolia. Masuda calculates that in 20 years those trees will have absorbed about 60% of the CO₂ from a typical funeral.

Source: Hindu Business Line, 21.4.08
A recent A T Kearney analysis reveals that during the current economic slowdown, companies that show a “true” commitment to sustainability appear to outperform their industry peers in the financial markets. In 16 of the 18 industries examined, companies recognised as sustainability-focused outperformed their industry peers over both a three- and six-month period, and were well protected from value erosion. Over three months, the performance differential across the 99 companies in this analysis worked out to 10 per cent; over six months, the differential was 15 per cent (see figure). This performance differential translates to an average $650 million in market capitalisation per company. The findings suggest that investors may reward “true” sustainability-focused companies that demonstrate the following characteristics.

### Rewarding experience

**Utilities**

**Telecommunications**

**Technology**

**Oil and gas**

**IndtL goods & serv.**

**Construction & matr.**

**Healthcare**

**Insurance**

**Financial services**

**Banks**

**Travel and leisure**

**Retail**

**Media**

**Personal goods**

**Food and beverage**

**Automobiles & parts**

**Chemicals**

**Basic resources**

**Note:** Indexed stock prices at 3 months = September 8, 2008 and at 6 months = May 19, 2008 to November 24, 2008. Percentage performance differential calculated by taking the percentage point difference of averaged sustainability companies’ indexed performance to the market indexed performance over the market indexed performance. Sustainability companies include DJSI World 60 2008/2009 DJSI 2008 Supersector Leaders+Goldman Sachs SUSTAIN focus list for mature industries. n=99 sustainability companies.

Sources: Bloomberg; AT Kearney analysis.
If someone has a palm shoot in his hands, he should plant it.

Prophet Mohammed

'I never use plastic bags. Instead I have little bags made out of jute material, like we had in the old days. Using the traditional jute bags not only helps the environment, but it creates jobs for Afghans who sew the bags.'

Prince Mostapha Zaher

'I don't want to give just one tip, because that could make you close your mind. But we have to live with less. Less food, less meat, less fuel, less shopping.'

Yann Arthus-Bertrand

"We have stopped using gold objects in our parish. God should not be worshipped with products that cause suffering and destroy nature."

Marco Arana

"Everything in the universe belongs to the Lord. Therefore take only what is for you. Do not take anything else, for you know not from whom it belongs."

Isha Upanishad
And one good thing I have realised while teaching my children is that environmental studies have been introduced as a subject in school for the last 4-5 years. So that's a very good thing.” Shahrukh Khan, actor

"Take nothing but pictures. Leave nothing but footprints. Kill nothing but time"
Development motto of Dubai Waterfront

'Take the stairs. You don't use any electricity and get some exercise too.'
Takashi Yabe

'Plant a garden today, even if in boxes! Save all that energy used to transport food over thousands of miles.'
Nnimmo Bassey

'Use your computer's built-in power-management features to set your system to go to sleep, including blanking the screen and turning off the hard disk after 15 minutes of idle time.'
Bill Weihl

‘Remember itadakimasu. Reciting this word is a common way to open a meal in Japan, and literally means "I humbly accept the gift of your life." It's based on Shinto tradition and the idea that for one organism to survive, another often has to die.'
Casson Trenor

'Grow your own vegetables. As long as you have clean earth and you don't live near a site that produces pollution, this is the best way to ensure you have pollution-free food.'
Olga Speranskaya

"I’ve insulated my house, I don’t eat much meat, I cycle where it’s practical, compost waste, and so on.”
Mark Edwards, photographer and curator

‘Go veg once a week! Meatless Mondays! Imagine if the world reduced its environmental footprint by changing our diets one person at a time.’
Dorjee Sun

’And one good thing I have realised while teaching my children is that environmental studies have been introduced as a subject in school for the last 4-5 years. So that’s a very good thing.” Shahrukh Khan, actor
When Hindustan Sanitaryware & Industries Ltd. started manufacturing vitreous china sanitaryware in the Sixties, its products would consume a minimum 15 litres per flush. Later, when Bureau of Indian Standards recommended 12.5 litres per flush, the company went ahead and introduced closets designed to flush with less than 10 litres. Not satisfied, HSIL launched ‘Constellation’ that consumed 5 litres and thereafter ‘Super Constellation’ that reduced the benchmark to 3½ litres. The 5 litres per flush model can potentially save 29,200 litres a year for a family of four - of potable water. The company recently developed a range of sensor urinals that flush 700 ML – 1.5 litres per flush, while its Aqua Free Urinal does not require water at all.

Gandhian Hasmukh Patel brought water to the parched rivers and rivulets of Amirdagd by creating a network of 90 check-dams in the hilly terrain. He has also been at the forefront of disseminating information to the villagers regarding economically-viable patterns of farming. This has benefited 50,000 tribals across 42 villages of Amirdagd taluka in Gujarat’s Banaskantha district. So instead of a single maize crop during the monsoons, farmers are able to reap three crops of mustard, wheat, castor and millets. The more enterprising have turned horticulturists and are now growing fruits like pomegranate and mango along with vegetables on land holdings as small as 0.25 acre. Tribals have been able to adopt a low-cost irrigation drip that costs just Rs 700 and helps grow vegetables and fruits on small land holdings. Patel did all this by raising Rs 7 crore from organisations like the American Red Cross, Sir Ratan Tata Trust and the International Water Management Institute on the one hand and engaging the tribals to contribute their labour. The result was a project cost that was a third of what it would have taken the government.

Source: India Today, June 26, 2008, article by Uday Mahurkar
Mohammed Islam Khan’s bangle factory in Firozabad (Uttar Pradesh) faced closure in the mid-Nineties when the Supreme Court ordered 292 coal-based factories around the Taj Trapezium Zone to either switch to cleaner fuels, relocate or shut down. Khan partnered with TERI, with the support of the Swiss Agency for Development and Cooperation (SDC), to develop clean, energy-efficient technologies based on natural gas for pot furnaces. Their model cut energy consumption by nearly 30 per cent compared to the other retrofitted gas-fired pot furnaces. The resistance was economic: the old coal furnace cost Rs 1-2 lakh, the TERI furnace cost Rs 30-40 lakh. Khan took the plunge. It took nearly two years for technology problems to be ironed out. Since 2000, 40 out of around 80 glass bangle factories in Firozabad have adopted the TERI furnace. “Earlier, if you walked into the factory in a white shirt, you’d come out all blackened. Now, the air is cleaner, my workers are healthier,” says one of those who installed four efficient TERI furnaces.

Source: From an article in India Today by Chitra Subramanyam, June 26, 2008

Wipro campus, Bangalore’s Electronic City: The first thing you are likely to notice is the windmills that power streetlights; kitchens are fired by methane gas produced from food waste; does not engage with partners or suppliers who do not adhere to energy efficiency and waste management norms. Meets 52 per cent of its water requirement with recycled water. Designed and implemented its data centres in such a way that the company saves 20,160 units of electricity a month, saving 45 kg of CO₂ per annum of total GHG emissions.
**Mahindra and Mahindra:** In 2007, it formally unveiled its bio-diesel Scorpio and Bolero DI vehicles for real world usage trials. The green Scorpio has an indigenously developed CRDe technology. The company is collaborating with IIT Kanpur, Indian Oil Corporation’s R&D centre and Lubrizol for its bio-diesel ambitions.

Launched its first electric three-wheeler called Bijlee, a first-of-its-kind battery-operated vehicle.

Available in the Scorpio M2DI and Bolero SLX BS3 in the Indian market, Mahindra's FuelSmart system with micro-hybrid technology enables the SUV’s engine to switch off automatically at a traffic light when idle and in neutral gear. The engine starts seamlessly once the driver depresses the clutch before moving forward.

**Vijendra Singh Shekhawat** is an expert on dung (camel, elephant or cow). He collects animal dung to make paper that is patented and exported to the UK and Germany. He says: "Years ago, I was riding my bike when a bus drove over a pile of dung, scattering it everywhere. Some even got into my eye. I stopped to clean up and noticed, for the first time, how fibrous it was!" He took it home, cleaned it, cooked it and tried to make paper out of it." After eight months, he had usable paper on his hands. He now pays Rs 100 for a bag of dung. The environment-friendly paper is completely natural — the yellow colour comes from tesu flowers, the green from the skin of pomegranates and leaves of trees.

Source: The Week, December 28, 2008, article by Mandira Nayar
A few years ago, Moushuni in the Sunderbans had to do without electric power. Now, it gets six hours of electricity every evening, thanks to the two solar plants installed in 2001. From being a no-name entity, Moushuni is today one of the 47 villages in and around the Sunderbans area that run only on alternative energy. When there’s not enough sun, the plants have gasifiers where they burn twigs with the help of diesel and convert the heat into electricity. “Earlier, we had to cross the river and walk a dozen miles just to get a document photocopied,” says Pulak Maity, 49, a schoolteacher. Now the bazaar has a photocopier and a digital studio. The village school is on its way to getting a computer lab. For Rs 75 per three-point and Rs 130 per five-point connection every month, the residents now have the comforts that many people in the rest of the country have long enjoyed—television sets, fans and even refrigerators.

Source: India Today, September 24, 2007, article by Swagata Sen
When Reliance Industries started its refinery in Jamnagar, it was considered impossible to turn a barren land into a greenbelt. Today, mangoes grown in Jamnagar are sold in Harrods, London.

RIL's mangrove plantations in Jamnagar have helped in arresting sea coast erosion and provided a habitat for marine organisms. The refinery green belt has attracted a few blue bulls, wild asses and boars. Quite a good number of foxes and rabbits live here. Around 65 species of birds and 15 species of butterflies frequent the place. Besides, the extensive greening has helped enhance rainfall in the vicinity over the last decade!

Hotel ITC Sonar in Kolkata became the first hotel in the world to obtain Certified Emission Reductions (CERs) issued under the aegis of the United Nations Framework on Climate Change Convention.

A Certified Emission Reduction (CERs) is the technical term for the output of Clean Development Mechanism (CDM) projects. The CER is a unit of Greenhouse Gas reduction (expressed in terms of Carbon Dioxide equivalence) that has been achieved and certified under the provisions of Article 12 of the Kyoto Protocol. These CERs are tradable internationally with countries and companies that have not met their greenhouse gases reduction targets.

The result: the hotel will save Rs 8.3 million a year, nearly 19% of the hotel’s total annual energy bill. The sale of CERs will provide additional revenue of more than Rs 1.5 crores over the next few years. ITC Sonar’s unique achievement reflects ITC’s commitment to contributing to the ‘triple bottom line’ of economic, social and environmental capital of the country. This approach has already made ITC a carbon and water positive corporation and will make it a ‘zero solid waste’ company in the near future.
For decades, Kolkata always believed the stretch of the Maidan on Chowringhee extending from the park street metro station towards Elliott park was a jungle. And actually it was. Weeds. Garbage. Excreta. If someone dismissed it as ‘no man’s land’ then it was so with good reason. Until some citizens transformed its destiny in late 2009. They attacked with spades, shovels and sickles. Gradually, 50,000 sq ft re-emerged from under tonnes of trash. More than 40,000 kg of garbage was evacuated. What was remarkable was who that the citizens who made this a reality were not seasoned corporate types (though they pitched in at specific points) but a school. Khalsa High School. Who deputed 40 students each morning. Allocated a couple of teachers to supervise the cleaning. Took attendance on the park! “This has served to remind students about their responsibility to their city and its cleanliness,” said Satnam Singh Ahluwalia, secretary of the school.

ITC is the only company of its size and diversity, to be carbon positive, water positive and solid waste recycling positive.

Maximising its renewable energy portfolio (30.6% of energy consumption in 2008-09 is from renewable resources. Installation of additional wind turbines and a large green boiler, among others are in progress)

Enlarging its carbon positive footprint by large-scale social and farm forestry programme, which will cover more than 100,000 hectares over the next few years. This exemplary initiative has already greened over 90,000 hectares.

ITC already has eight registered CDM projects including two unique projects - the Social Forestry Project, the first of its kind in India and second after China to receive CDM registration and the ITC Sonar being the only hotel in the world to earn carbon credits.

All ITC buildings are progressing towards the Green Building concept. ITC Green Centre at Gurgaon is the world’s first largest LEED certified platinum rated Green Building.

[Source: itcportal.com]
In a landmark carbon financing in India, the municipal corporation of Greater Mumbai has earned Rs 26 crore for the scientific closure of a garbage dumping ground. The money essentially was for the capture and combustion of methane gas emanating from the dump, which substantially reduced greenhouse emissions. "We hope to earn a total of Rs 73 crore from the Gorai dumping ground carbon credits, which would be Rs 11 crore above the entire cost of the project," said additional municipal commissioner R A Rajeev. As heartening as the cash-from-trash bargain was the transformation of the 50-acre dumping ground, more than twice the size of the Oval Maidan, from a stinking mountain of garbage into a contoured, landscaped hill. Garbage was being dumped at this plot adjoining the Gorai creek since 1972. Thirty-five years later when the dump was closed in December 2007, the 2.3 million tonnes of accumulated waste had stacked up to 32 metres, as high as an 11-storey building. The contractors flattened the top of the garbage mound and created gentler slopes after which it was sealed in layers.

Source: Times of India, September 2009

About a decade and a half ago, Delhi was one of the world’s 10 most polluted cities, with vehicles accounting for 70 per cent of polluting emission. Pollution levels exceeded World Health Organisation standards by nearly five times. Things were in such a state that Delhiites complained that on most days they couldn’t even see the sun due to the smog. This is how Delhi responded: 1328 units categorised as hazardous were forced to shut. A premixed lubricating oil and petrol replaced the loose supply of these fuels for two-stroke engines. The court ordered the retirement of commercial vehicles older than 15 years and the conversion of all commercial passenger vehicles to compressed natural gas. Delhi’s thermal power stations began to use beneficiated coal, with an ash content of less than 34 percent (coal ash content 40 percent). A mass rapid transit system, known as the Metro, was introduced in 2000. Result: In 2003, Delhi won the US Department of Energy’s first ‘Clean Cities International Partner of the Year’ award for “bold efforts to curb air pollution and support alternative fuel initiatives.”
According to an estimate, ‘green’ buildings in India have increased from 20,000 sq ft area in 2004 to 275 million sq ft in 2009.

When Maharani Paints, a small company in Faridabad, realised that to become vendors of industrial paints to Punjab Tractors, they would have to find a radical solution to a problem they hadn’t thought of till then, they did what any small company with big ambitions would do. They accepted the challenge. This was 2002.

Growing automobile production increased the quantum of sludge (paint waste) that is difficult to dispose. Multinationals tried to recycle sludge and ended up producing cheap quality primer with low industrial applications. Those who tried incineration complained of the cost, using 110-120 litres of fuel per ton of sludge, releasing toxic gases and still leaving large ash waste.

Punjab Tractors passed this problem to Faridabad-based Maharani Paints who found a way to recycle 95-98% of sludge into reusable commercial primer. They even managed to save all the costs associated with transportation fuel required for incineration; by converting a ton of sludge, it found a way of saving 1.1-1.2 tons of virgin raw materials. Best of all, it has supplied Punjab Tractors significant quantities of sludge-converted primer. Today, 80% of the daily primer requirement of the Hero Honda plant in Gurgaon and 70% of the primer requirement of Hero Honda’s ancillary units is met by Maharani Paints.

Even better, Maharani Paints eliminated some production processes, reducing costs. The result: it commissioned 20 sludge conversion plants across India creating 700 jobs and increasing recycling.

Source: The Economic Times, 11.4.08
The Orchid, Mumbai: Asia’s first certified eco-friendly five-star hotel and world’s only Ecotel to be certified as ISO 14001. Undertakes vermiculture in nine bins on its hotel site. Achieved ‘zero garbage’ status. Used the more eco-friendly refrigerant gas R22 instead of CFC refrigerants. The mono screw chillers—which have the least number of moving parts operates on a stepless efficiency range of 10% to 100%. Attached to the air-conditioning system is the STL tank to store cold energy during off-peak hours. This stored energy is then used during the peak hours /periods, reducing compressor overloading and power consumption. The heat generated from air conditioners provides hot water to the guestrooms, laundry, toilets and kitchen. The interiors of Vindhyas (specialty restaurant) is made from recycled wood from old buildings! Wastewater is treated and then reused for air conditioning and gardening. The cement used contains 15-20% fly ash.
No untreated municipal sewage and industrial effluents will flow into the river Ganga by 2020 as part of 'Mission Clean Ganga'.

An estimated investment of Rs 15,000 crore over the next 10 years will be required to create the necessary treatment and sewerage infrastructure and the required resources will be provided by the centre and states over a ten-year period on a shared basis after consultations with the Planning Commission.

Source: Business Standard, 06.10.09
come on Mr. Brown. Saving the planet’s so simple a six year old can get it.

We just need everyone to agree three simple things in Bali next week:
1. Stop cutting down trees
2. Make All Stuff Energy Efficient
3. Only Make Clean Energy

Help me get the message over to Mr. Brown and Text SIMPLE 2 to 80800 free, e-mail him at mibrown@thesolutionissimple.org or send him this ad.

www.thesolutionissimple.org

-enoughsenough.org

PROTECTION IN PROGRESS!
Making a difference

1. **Bank of America**: Reduced paper use by 32% from 2000-2005, despite a 24% growth in customer base! Recycles 30,000 tons of paper a year, good for saving roughly 200,000 trees. Offers employees a $3,000 cash back reward for buying hybrid vehicles.

2. **Ceres**: Billed as “the largest coalition of investors, environmental and public interest organizations in North America.” Focused on ensuring that companies accurately disclose the environmental aspects of their business practices to investors and shareholders. Persuaded Dell Computer to support national product “take back” legislation. Convinced Bank of America to spend $20 billion on the growth of eco-friendly business practices.

3. **General Electric**: Since 2006, sold over $12 billion of its Ecomagination products (including solar panels).

4. **Dupont**: Appointed an ex-Greenpeace head as adviser to the Board. Reduced greenhouse gas emissions during the 90’s by 63% – ahead of the Kyoto Protocol timetable.

5. **Toyota**: Offered Prius, the world’s first mass-market hybrid vehicle. The Environmental Protection Agency recognized it as the most fuel-efficient car in the U.S.

6. **Dell**: Its “no computer should go to waste” recycling programme. Dell allows customers to return any Dell-branded product back to the company – for free. The company has even gone so far as to establish programmes that accept computers, monitors, or printers from other companies for safe disposal as well.

7. **Honda**: Pledged to reduce its carbon dioxide emissions by 5% between 2005-2010, and that’s excluding the 5% it already achieved from 2000-2005.

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Urinate in the open and save the planet

The National Trust of Britain has asked men to urinate on their compost heaps to help fertilise their gardens and save on flushing. Reason: Peeing on a compost heap activates the composting process, helping produce a ready supply of organic matter. The practice is already being encouraged at stately homes around Britain where ‘pee bales’ have been deposited in secluded areas. Tamzin Phillips, the National Trust’s “compost doctor”, said: “An average flush of the lavatory can use anything from four and a half to nine litres of water each time, but what people may not realise is that this water is treated to the same standard as drinking water and shouldn’t be wasted.”

Source: The Telegraph
Maldives President Mohamed Nasheed and his cabinet headed to the bottom of a turquoise lagoon for the world’s first underwater cabinet meeting. Clad in black diving suits and masks, Nasheed, 11 ministers, the vice president and cabinet secretary dove 3.8 metres to gather at tables under the crystalline waters. As black-and-white striped Humbug Damselfish darted around a backdrop of white coral, Nasheed gestured with his hands to start the 30-minute meeting. *We are trying to send our message to let the world know what is happening and what will happen to the Maldives if climate change isn't checked,*” a dripping Nasheed told reporters as soon as he re-emerged from the water. Nasheed and the ministers used a white plastic slate and waterproof pencils to sign an "SOS" message from the Maldives during the 30-minute meeting. If UN predictions are correct, most of the low-lying Maldives will be submerged by 2100.

In the same continent, Nepal held the world’s highest Cabinet meeting on the slopes of Mount Everest to highlight the danger that global warming poses to Himalayan glaciers.

The 23 cabinet members sat at folding tables next to the Everest base camp at 17,192 ft (5,250 metres) altitude and signed a commitment to tighten environmental regulations and expand protected areas.

Source: www.timesonline.co.uk
Water is returning to the North Aral Sea. Simple fact, big implications. Here is the background: In the 1950’s, the Soviet government diverted the Aral Sea's two tributary rivers into irrigation for cotton and rice crops. Gradually, waters receded and left two highly salted, smaller bodies of water that could sustain only a single species of fish. The water diversion meant to sustain agriculture in Central Asia destroyed its fishing industry and affected the area’s climate. That devastation prompted the Kok-Aral Dam project, an $85.8 million fix finished in 2005 and largely financed by the World Bank. It is part of a larger rescue operation costing a total of $260 million. Just one year after its completion, the dam exceeded expectations. A New York Times article from 2006 noted that ‘In dozens of villages in the region, frigid green water now laps against long-abandoned harbours, and fishing vessels retrieved from open-air desert graves have been put back to sea.’ The Aral Sea, which was once drained of 75 percent of its water, has this year taken on millions of cubic feet of new water years ahead of schedule, surpassing even the sunniest predictions made when a new dam was completed last summer, the paper added. The journey of the Aral Sea, from the fourth largest sea in the world to the sixth to a recovery project surpassing expectations, stands as an environmental miracle ...

Source: www.celsias.com

Recovering the Aral Sea

Toyota has created two derivatives of the cherry sage and gardenia at its factory in Toyota City, Japan. The flowers were specifically chosen due to their ability to absorb nitrogen oxides and create water vapour. These attributes clean the surrounding air and lower temperatures at the factory. Other environment-friendly efforts at the plant include roof-mounted solar panels, photocatalytic paint on exterior walls, reflective solar tubes that provide interior light and even slow-growing grass that only needs to be mowed twice per year.
Janine Benyus
Janine Benyus’ 1997 book *Biomimicry: Innovation Inspired by Nature* has a unique message that nature’s design genius has led to the creation of bat-inspired ultrasonic canes for the blind, synthetic sheets that collect water from mist and fog as desert beetles do, and paint that self-cleans like a lotus leaf.

Jose Goldemberg
Co-authored a paper that showed how possible and profitable it was to harvest a clean and renewable fuel like ethanol from the country’s abundant sugarcane. Inspired, Brazil became a global pioneer in biofuels; ethanol has reduced the country’s carbon emissions by 46.6 million tons annually — 20% of its total carbon footprint.
Prince Charles
His Duchy Home Farm went organic in 1986. His farm supplies barley, beets, carrots, milk, mustard, oats, parsnips and wheat to Duchy Originals from 1992 onwards.

Cameron Diaz
Pays carbon offsets for all her travel and does not flush after urinating.
Benjamin Kahn
Following Red Sea storms he and his divers collect reef fragments to give to 5,000 school kids to grow like saltwater saplings in classroom tubs. Then divers carefully glue the living fragments back onto the reef.

Karl Ammann
Swiss wildlife photographer. Worked undercover, using hidden cameras in jungle markets or triggering his shutter with infrared sensors laid along hunting paths. Protects primates from being killed.
Mikhail Gorbachev

Green Cross now addresses everything from climate change to chemical contamination.

Barnabas Suebu
Stood up to deeply entrenched business and military interests that richly profited from Papuan timber. Recommends trading carbon credits arising out of the conservation of the province’s forests, which extend over 77 million acres (31 million hectares) because it can generate far more revenue on the Chicago Climate Exchange than from logging.
Al Gore  
Maker of the book and documentary An Inconvenient Truth. Shared the Nobel Peace Prize, with the U.N.'s Intergovernmental Panel on Climate Change, for being "probably the single individual who has done most to create greater worldwide understanding of the measures that need to be adopted" to combat global warming.

Robert Redford  
Without Redford there would be no Grand Staircase-Escalante National Monument in Utah, a 1.7-million-acre (7,571 sq km) expanse of land that he fought to keep out of commercial hands from 1975; inspired President Clinton to close it to development.
Richard Branson
In 2006, he pledged to invest $3 billion over 10 years — including 100% of any proceeds from Virgin’s airlines and train companies — into developing clean fuels, renewable energy and environmental technologies. Focuses on flying lighter aircraft using low-carbon fuels. Is offering $25 million in prize money to spur inventors to find ways to remove greenhouse gases from the atmosphere.

James Lovelock
His ideas about Gaia (self-regulating living system) have started a change in the conception of biology that may serve as a vital complement to the revolution that brought us the structures of DNA and proteins and the genetic code. Gaia works only because it is open to the universe, powered not by finite internal stores of fuel but by the endless flow of solar energy through the system as a whole.
Sunderlal Bahuguna
Inspired an effective and non-violent way to stop tree felling and protect the environment. Got women from small Himalayan villages to bodily hug trees to dissuade loggers. His notable contribution to environmentalism in general was the Chipko slogan "Ecology is permanent economy." Walked 5,000 km across the Himalayas from 1981 to 1983 to gather support for the movement. Result: Ms. Gandhi banned felling green trees in 1980. Sunderlal was awarded the Padma Vibhushan, India’s second highest civilian honour, on January 26, 2009.

Abul Hussam
Counters arsenic in drinking water with a filter that is affordable, effective and environmentally sustainable. Can potentially benefit 137 million people. Removes 98% of arsenic content as well as other mineral impurities that make water hard. A number of rural women have started washing their hair with filtered water as a result.
David Suzuki
Became Canada’s premier young geneticist, an award-winning bench scientist who became a professor at the age of 33. Created a TV series called The Nature of Things, aired in 50 countries. Unflagging environmental champion. Toured Canada to give a string of speeches about the need for an international agreement on CO₂ emissions.

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Wang Canfa
Director of the Beijing-based Center for Legal Assistance to Pollution Victims that logged more than 10,000 calls and pursued over 100 cases, some with as many as 1,700 plaintiffs. Blocked an animal-testing lab from opening in a Beijing residential neighbourhood, succeeded in getting a Hebei steel factory (accused of pollution) to move, won a $730,000 ruling against a paper mill and chemical plant in Shandong province responsible for killing fish.

Von Hernandez
His relentless campaigning succeeded in making the Philippines the first nation in the world to ban waste incineration. Preaches the virtues of composting and recycling instead.

Wangari Maathai
Encouraged people to plant trees – more than 40 million – to prevent soil erosion and provide firewood for cooking. Forced the Kenyan government to drop plans to build an outsized office tower in a park in Nairobi. Became the first environmentalist – and the first African woman – to win the Nobel Peace Prize.
John Doerr
His firm Kleiner Perkins Caufield & Byers poured hundreds of millions of dollars into green-tech start-ups. His portfolio includes a company developing power plants driven by the heat of the sun, and another that will mass-produce cheap solar cells to roll out on roofs like tar paper. He has bet on a high-performance plug-in hybrid car; on biologists making cellulosic ethanol from nonedible plant material; and on a Berkeley team that has re-engineered yeast to ferment sugar into fuels indistinguishable from those we get from oil.

D.P. Dobhal
Uses simple bamboo stakes to measure the rise and fall of Himalayan glacial mass at altitudes of up to 13,120 ft. (4,000 m) in his job at the Indian government’s Wadia Institute of Himalayan Geology.

Ray Anderson
This chairman of a carpet tile company Interface realized he was in a wasteful, fossil-fuel dependent business. Set a goal of eradicating the company’s environmental footprint by 2020. Has since cut dependence on fossil fuels by 45% and water and landfill use by as much as 80%.

Hammer Simwinga
Nurtured hundreds of community-based ventures – ranging from fish-farming and beekeeping to the production of sunflower oil – that showed thousands of villagers how to prosper without poaching. His project has boosted the income of its roughly 35,000 participants a hundredfold.
Berita KuwarU’wa
Inspired his tribe (U’wa) of 5,000 to threaten suicide if multinational oil companies drill for oil in their home land in the cloud forests of Colombia.

Christine Loh
A forceful liberal voice in Hong Kong’s oligarchic legislature, she recorded a major environmental victory in a landmark 1997 ordinance to protect Hong Kong Harbour. Today, as an international adviser to the G8+5 Climate Change Dialogue, and a director of the Association for Sustainable and Responsible Investment in Asia.

Residents of Vauban
This district on the outskirts of Freiburg (Germany) has banned cars in most places. Plus no home garages, no street parking and a charge of some $30,000 for a space in one of two multi-storey car-parks. The impact has been dramatic: the car-ownership rate among the 5,000 residents is just 220 per 1,000, compared to 520 in Freiburg itself.

Chip Giller
His website Grist is a one-stop shop for news, reports and opinion with a satiric twist. Has 750,000 daily readers.
As California Governor, he signed agreements with Canada, Mexico and the United Nations encouraging cooperation on clean technology, while pushing greenhouse-gas reductions at home. Enacted the first statewide cap on carbon emissions, the first statewide green building code and the first statewide fuel-efficiency standards.

Bindeshwar Pathak

Developed a twin-pit toilet that can be installed in any village, house or mud hut. While one pit is in use, the other is left covered. Within two years, the waste in the covered pit will dry up, ridding itself of pathogens, so that it is suitable for use as fertilizer. The toilets use 0.4 gal. (1.5 L) of water per flush, as opposed to the 2.6 gal. (10 L) required by conventional toilets. They also eliminate the need for manual scavenging, so Pathak’s NGO — now called the Sulabh International Social Service Organization — also runs rehabilitation programmes for out-of-work scavengers, teaching them the skills they need to find new jobs. In 2003, Pathak set up a vocational center in Alwar, Rajasthan, where women are trained in tailoring. Perfected an excreta-based biogas plant that generates biogas for heating, cooking and electricity.
Norman Myers
Wildlife photographer in Kenya’s game reserves in the 1960s. While conservationists of the day guessed that the planet might be losing one species per year, Myers’ research in the early 1970s revealed that the rate was probably closer to one species per day. His research into “biodiversity hotspots” provided a framework for conservationists to prioritize their work.

Thomas Harttung
Creator of the world’s largest box scheme. Sends crates of organic farm produce to thousands. To reduce carbon emissions, all produce travels by truck or boat. His machine burns old crates in an oxygen-depleted environment to produce a charcoal-like biochar that works as a potent fertilizer and has the capacity to sequester carbon dioxide. Supplies 60% of Aarstiderne’s power needs.

Dorjee Sun
Brokered the world’s first commercial avoided-deforestation project in Indonesia, with investment bank Merrill Lynch paying to protect 1.9 million acres (770,000 hectares) of pristine jungle in exchange for the value of the carbon locked inside the trees, carbon that can later be sold on the emerging international market. Hired former rebels from Aceh’s civil war to patrol the forest for illegal loggers.

David Attenborough
No living person has done more to make the people of Planet Earth aware of the world around them. His 13-part BBC series Life on Earth is reckoned to have been watched by 500 million people.
Elezeard Bouffier
Planted 100,000 acorns. In Provence, Europe. When grown, the oak trees covered 11 kilometers in length and three kilometers at its greatest width. All planted alone.

Helped by the wind that scattered the seeds. As the water reappeared, there reappeared willows, rushes, meadows, gardens and flowers. Story of his passion first published in 1954 by Vogue magazine. Inspired reforestation worldwide.

Dawa Steven Sherpa
Climbed the 8,848-metre peak in 2007. Now runs the world’s highest bakery at 5,330 m. Every Nepalese Rupees 100 that a patron pays at the world’s highest bakery goes to remove 100 kg of garbage from Mt Everest. In 2008, Dawa’s Eco Everest Expedition 2008 brought down a tonne of garbage. This year it was almost six tonnes - 4,646.5 kg of garbage and over a tonne of helicopter debris. One tin can was marked ‘1964’!

Kiminobu Kimura
Just another Japanese. He, his wife, and two teenage children all take turns bathing in the same water. Afterward, the still-warm water is sucked through a rubber tube into the nearby washing machine to clean clothes. Wet laundry is hung outside to dry or under a heat lamp in the bathroom. “In Japan, it’s natural to think about saving energy,” Mr. Kimura explains. “We learned not to waste from our parents, who had learned it from the hardship of the war and after,” he said.

Pokkudan
Born an untouchable and illiterate Pulaya. At 52, started planting over 1,00,000 mangrove saplings in Kerala. In response to garbage dumps and deforestation of nearly 10,000 mangrove trees in the name of development. Inspired people to fight back. Kannur’s department of forests set up a nursery under him with around 30,000 seedlings. Local self-government institutions (LSGIs) began to book cases for mangrove destruction. Environmentalists say that over four decades mangrove forests in Kerala have dropped from 700 sq km to 17 sq km. But of the remaining wetlands, Kannur has 45 per cent. All due to one man.
Mick Bremans
His company Ecover is based in the town of Malle in what Bremans calls the world's first "ecological factory." The building recycles wastewater, has shrubs and grass on its roof to save energy, and has no central heating or air-conditioning. Bremans has also reduced transportation, in part by sourcing perfume ingredients closer to home. The result: lower costs and fewer carbon emissions. Had to drop its Vegan Society logo after rejecting a cut-off date for animal testing — despite Bremans’ offer to donate his own blood as an alternative for some allergy tests.

Habiba Sarabi
Governor of Bamiyan, one of Afghanistan's least developed provinces is establishing Afghanistan's first national park. Banned picnickers from parking vehicles on the fragile banks. Stopped a popular motorboat service that ferried tourists from one end of the principal lake to the other for fear that the vibrations — and the fuel — would disrupt the growth of the crystalline deposits that produce the area’s spectacular geography. Tore down the ramshackle restaurants and shops that had cropped up on the water’s edge.

Gidon Bromberg, Nader Al-Khateeb and Munqeth Mehyar
The Jordan River is full of raw sewage. The Sea of Galilee is at its lowest recorded level, and the Dead Sea is drying up. One of the most passionately contested parts of the world, it is also one of the worst treated.

Friends of the Earth Middle East (FoEME) built partnerships between Arab and Israeli communities in the Jordan River valley to teach water conservation.

Lee Myung Bak
As Seoul mayor, tore out the jam-packed elevated highway that ran through the heart of Seoul and restored the buried Cheonggyecheon stream, a foul urban waterway, into an environment-friendly civic jewel.
Marc Ona
Campaigned to halt a gigantic mining project in the heart of Gabon’s rain forest. Gabonese officials scaled back the project. Ona wages his battle from a wheelchair as he suffers from polio. "When powerful people see someone who has fought disadvantage his entire life blocking their way in a wheelchair," Ona says with a chuckle of satisfaction, "they tend to think in alarm ‘This guy’s serious.’"

Mohammed Dilawar
Runs a project to preserve what he believes is one of India’s most threatened birds - the house sparrow. Began to design wooden nesting boxes. In less than three years he sold more than 1,000 of these "nests" and bird feeders.

Balbir Singh Seechewal
Liberated the Kali Bein, a 99-mile-long river considered sacred by the Sikhs, from a filthy drain into which six towns and more than 40 villages emptied their waste. In 2000, Seechewal and his volunteers cleared the entire riverbed of water hyacinth and silt, revived natural springs and began to fill the river.

Mohamed Nasheed
In March, his government announced that the Maldives would, within 10 years, become the world’s first ever fully carbon-neutral nation with an array of eco-energy projects. Tourists will have to fork out a daily green tax. Soon after taking office, he announced a plan for a sovereign wealth fund to finance the purchase of land, perhaps in a larger country such as Australia or India, that might serve as a new home for the entire Maldivian population. Walks to work every day.

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Yuyun Ismawati
Indonesian environmental engineer who advocated for responsible hotel garbage disposal in Bali and slum cleanup. Ismawati and her network have helped set up solid-waste-management programmes in seven slums across the country, encouraging locals to make traditional handicrafts out of recycled materials.

Vandana Shiva
Teacher, ecologist, activist, feminist and organic farmer. Focuses on the preservation of agricultural diversity. Promoted Navdanya (Nine Seeds) to encourage farmers to produce hardy native varieties of crops that can be grown organically with natural fertilizer and no artificial chemicals. Navdanya has spread to some 80 districts in 12 states and has collected more than 2,000 seed varieties. Navdanya provides an alternative approach to modern farming.

Takashi Yabe
His argument: oceans contain 1,800 trillion tons of magnesium, enough to meet the world's energy needs for the next 300,000 years. Refining it at temperatures up to 4,000°C (7,200°F) derived from sunlight. Has plans to sell refined magnesium for fuel-cell batteries. Seven times more powerful than lithium-ion batteries, magnesium batteries run many of today's hybrid and electric vehicles.

Syeda Rizwana Hasan
Chief executive of the Bangladesh Environmental Lawyers Association. Bargained for better environmental and labor regulation in Bangladesh's 36 shipbreaking yards. In 2003, Hasan petitioned Bangladesh's Supreme Court to certify that all ships arriving in the country for breaking were free of toxins. In March, the court ordered the closure of all yards operating without government environmental clearance – in other words, all of them.

Kory Johnson
This nine-year-old recognized that many families – including her own - in her neighbourhood in Phoenix, Arizona, had lost a loved one to cancer. Formed Children for a Safe Environment (CSE) against school advice. Took on the enormous ENSCO hazardous waste incinerator and dump; through letter writing, public education, protests, demonstrations and children's art projects, she teamed with Greenpeace Action. Arizona's governor eventually cancelled plans for the incinerator.

Nathan Lorenz and Tim Bauer
Invented two-stroke-engine technology to create greener auto-rickshaws for Southeast Asia and India. Introduced a range of virtually smokeless stoves reducing toxic emissions by up to 80% and fuel consumption by some 60%.

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Honda
Focusing on two alternative fuel technologies, the natural gas powered "Civic GX" and the hydrogen fuel cell "FCX." Promised to reduce CO2 emissions from its factories and vehicles by 5 percent between 2005 and 2010 - on top of the 5 percent it achieved between 2000 and 2005.

Continental Airlines
Besides spending more than $16 billion over the past ten years to replace its fleet with more efficient aircraft, it installed fuel-saving winglets that reduce emissions by up to 5% on most of its Boeing 737s and 757s, and reduced the nitrogen oxide output from ground equipment at its Houston hub by over 75% since 2000. Has 13 full-time staff environmentalists who track carbon emissions and chemical recycling daily.

Suncor
Improved emissions intensity (the amount of oil it extracts per ton of greenhouse gases emitted) 25 percent since 1990. Ditto for energy, sulphur dioxide and nitrogen oxide. Part of an initiative to develop carbon-capture techniques. Hopes to double its production by 2012, but its water management is so advanced that it expects to draw no additional water from Alberta’s Athabasca River.

Goldman Sachs
Its equity analysts in Europe now factor environmental, social and governance issues into their reports.

Tesco
Wind-powered stores, high-tech recycling, biodiesel delivery trucks - Tesco does all that. In 2007 the company pledged to cut the average energy use in its British buildings in half by 2010; it says it will get there two years early. Will estimate the "carbon cost" of each item. Determines senior-management bonuses partly on meeting energy-and waste-reduction targets. Awards points for consumers who bring their reusable shopping bags.

PG&E
Generates 56 percent of its retail electricity sales from non-greenhouse-gas-emitting sources. Subsidizes homeowners who buy energy-efficient appliances with $75 grants. Has a pilot project in the San Joaquin Valley in which cow manure is turned into electricity.

Swiss Re
Warned as early as 1994 about the bottom-line threat in the form of higher claims from storms and other weather-related disasters. Pioneered products like weather-based derivatives to hedge these risks. Buyers can bet on future heat waves or cold snaps with puts and calls on specific periods of time and temperatures, much as conventional options have a preset strike price for a stock.

Hewlett-Packard
Will take back any brand of equipment; its own machines are 100 percent recyclable. Promised to cut energy consumption by 20 percent by 2010. Audits top suppliers for eco-friendliness, and its omnibus Global Citizenship Report sets the standard for detailed environmental accountability. --Oliver Ryan
www.grist.org - Grist is the Colbert Report of climate change, the Daily Show of deforestation, the Oprah of oil dependency — except with real reporting and analytical journalism.

www.treehugger.com - TreeHugger is the go-to guide and news feed for sustainable living. Covers pretty much the entirety of the sustainable lifestyle, offering tips on how to "green" your baby, wedding, funeral, and everything in between.

http://dotearth.blogs.nytimes.com/ - A relatively new, must-read newspaper blog, Revkin's commentary roams from inspiring to enlightening to plain old silly. His voice adds a refreshing lightness to the most leaden environment-related questions.

www.realclimate.org - An assembly of climate researchers gives readers what's lacking virtually everywhere else — straightforward presentation of the physical evidence for global warming, discussed with patience, precision and rigor.

http://noimpactman.typepad.com/blog/ - Beavan, the founder, swore off using toilet paper for a year and is now writing a book about the experience. No Impact Man has become a prominent commentator the old-fashioned way — through creative action.

www.ecorazzi.com - If you want to know what rock stars, fashion designers, actors and other celebs are doing to green the Earth, look no further than Ecorazzi.

http://switchboard.nrdc.org/ - Switchboard’s team of more than three dozen writers makes it one-stop shopping for commentary on far-flung topics: what parks add to cities; why greens and business make good bedfellows; why there is a black market for bees.

www.mongabay.com - A personal encounter with deforestation years ago — when a Malaysian rainforest was razed and ground into wood chips to serve a local paper plant — turned mathematician-economist Rhett A. Butler into one of the Web’s foremost champions of rainforests and biodiversity.

http://climateethics.org/ - ClimateEthics is both sober and sobering, a mature, dispassionate look at how global warming changes the meaning of personal and aggregate right and wrong.

http://climateprogress.org - Joe Romm’s Climate Progress blog, a project of the liberal Center for American Progress, counters bad science and inane rhetoric with original analysis delivered sharply, usually with either humour or incredulity or both.

10 top green websites according to *Time*
In 1997, the Danish government announced a competition to convert energy systems of participating islands to RE in 10 years. Samsoe won the competition. But after the euphoria of winning, everything dissipated. The island received no prize money or special tax breaks or government assistance. But Søren Hermansen, an environmental studies teacher, persisted.

He pointed to the blustery island's untapped potential for wind power. Gradually, community leaders came around and in 1998, Samsoe Energy Company was set up to implement the 10-year energy conversion plan that included: erecting land-based and offshore wind turbines to cover electricity consumption; reduce total energy consumption and increase energy efficiency; adjust people's pattern of behaviour; expand district heating combined with utilisation of biomass resources and expand the use of small wind turbines, solar panels for individual homes.

The residents gave up their oil-burning furnaces for centralised plants that burned leftover straw or wood chips to produce heat and hot water. They bought shares in new wind turbines. They invested in 11 large land-based turbines to meet their electricity needs. They supported the construction of 10 massive offshore turbines (the Danish government assured the price of electricity for 10 years).

Result: Samsoe has become a model for eco-tourism. Samsoe produces more clean power than it consumes; residents claim that they have cut their carbon footprint by 140 per cent. The island produces 10 per cent more clean electricity than it uses, with the extra power fed back into the grid at a profit. The island now runs on 100 per cent renewable energy.

The island has also managed to inspire other countries. In March 2009, the Greek island of Agios Efstratios, or Ai Stratis, became the first island in the country and the Aegean to be entirely powered by renewable sources, including solar and wind energy. Samsoe (Denmark) is an island that runs on 100 per cent RE.

Source: The Hindustan Times, article by Kumkum Dasgupta
When Gamesa Energy notified citizens of Llanfynydd in Carmarthenshire, Wales, of their plans to build a test wind turbine just outside the village to study the feasibility of a larger project, the villagers responded with an unusual protest. They temporarily changed the name of their village to (deep breath) Llanfryddawelllelenolhynolbarcudprindafyhyddtrienw syrhafrnaol, which in Welsh means “a quiet beautiful village, an historic place with rare kite under threat from wretched blades.” Their rationale: the turbine will so alter the character of the village that a name change is warranted.

A million cellphone text messages succeeded in stopping the construction of a chemical factory on Xiamen Island (Fujian) which threatened local residents and farmland. The idea came to a farmer who, after he unsuccessfully petitioned the central government to halt the project, decided to launch his own campaign against the local government. Residents feared that the paraxylene plant would cause irreparable damages to the area as the area chosen for the factory is swept by strong easterly winds and industrial emissions that would have been blown in the direction of residential areas and farmland.

The World Naked Bike Ride is an annual protest of indecent exposure to vehicle emissions.

Three journalism students had got their Facebook profiles deleted after they posted pictures of themselves eating feral cat. Why would someone eat cat, you might ask? The three women were trying to draw attention to factory farming.

Take Jennifer Thornburg, for example. According to the environmental blog ‘Webecoist’ Thornburg changed her name to cutoutdissection.com in an effort to protest dissection in schools. Her driver’s license is proof that she made this change.
Greenpeace climbers dressed as Disney characters ascended the building of Disney UK headquarters in Hammersmith, west London, to protest against the use of toxic chemicals in Disney-branded pyjamas. They unveiled a banner reading 'Disney: Stop Selling Toxic Pyjamas to Kids'. Disney staff arriving for work not only saw the banner, which measures eight metres by four and a half metres, but were also given leaflets explaining the potential damage their employers were wreaking upon children's health by continuing to sell toxic pyjamas.

Eleven Greenpeace members set up a camp halfway up one of the chimneys at the Prunerov power plant in northern Bohemia to protest against the carbon dioxide emissions produced by the plant. They responded to a Radio Prague call-in with the following statement: "We decided to climb this chimney because the factory, which it belongs to, is the biggest source of carbon dioxide emissions in the Czech Republic. It emits 70 tonnes of carbon dioxide every minute into the atmosphere. And this adds up to 9 million tonnes annually. We wanted to give the press a more detailed scientific view on the whole issue. And no one came to this conference from the media. So, I think if you want to really publicise an issue, I think it's a pity, but sometimes it is necessary to use some more visible, eye-catching, ways of presenting it."

Greenpeace environment activists piled 11,000 rotting fish on a 100 metres long table under banners bearing the slogan "Don't waste life!" at the foot of Berlin's biggest tourist attraction, the Brandenburg Gate, to demonstrate the dangers of over-fishing and pollution in the North Sea.

3 MORE UNUSUAL PROTESTS
An Israeli company has developed a method to generate electricity from road traffic. The system works by using generators implanted in the asphalt that create energy when cars drive over them.

Each generator produces 2,000 watts per hour, which is stored in batteries along the side of the road. The innovative technology is the brainchild of Israeli firm, Innowattech, in collaboration with the Technion University. The manager of the project, Dr Lucy Edri-Azoulay, said the generators on Highway No. 4 were planted two inches below the top level of asphalt and they used the weight of cars driving on top of them to generate electricity.

Source: The Times of India, 8.10.09
In 2005, Washington became the first state in the US – and possibly the world – to enact green building legislation. According to the law, all major public agency facilities with a floor area exceeding 5,000 sq. ft. are required to meet or exceed LEED standards. The projected benefits:

- **20% annual savings in energy costs**
- **20% reduction in water costs**
- **38% reduction in waste water production**
- **22% reduction in construction waste**

Homes and businesses together accounted for 38 per cent of carbon dioxide emissions in the US, the highest combination polluters, way ahead of transportation (33%) and industry (28%). Thirty eight per cent!

Source: Time, 9 April 2007
Chicago’s Merchandise Mart is now LEED-EB (existing building) Silver certified and the biggest green building in the world. Following re-tooling, utility bills declined 10% and occupancy rates climbed from 77% a decade ago to 96%. The Mart had individual meters that billed tenants for their actual consumption. “You can’t make them change to high-efficiency bulbs, but the minute we start passing on the true costs,” notes the in-charge, “the savings start.” A 1980s ice-storage cooling system installed by previous owners froze tons of water overnight, even in winter months. The ice was then brought up to 34 degrees and pumped into the air conditioning system during the day. The setup shifted power consumption to lower-price, off-peak periods.

Source: treehugger.com

The Palazzo Las Vegas
was awarded the Silver LEED Certificate (Leadership in Energy and Environmental Design) by the U.S. Green Building Council (USGBC). The Palazzo conserves enough water to provide each Nevada citizen 266 eight-ounce glasses of water for a year and saves enough energy to light a 100 watt light bulb for 12,100 years. It even promotes alternative modes of transportation by offering valet parking for bicycles.

Artificial turf, drip irrigation and moisture sensors in planted areas resulted in over a 75% reduction in irrigation needs. In the summer, the excess solar energy not needed for heating swimming pools was directed to the hotel’s hot water system, reducing the need to heat water for guest suites. Air conditioning controls in guest suites were automatically set back by several degrees when guests were not present and reset to the desired temperature upon return. Team member service areas were equipped with lighting occupancy sensors that shut off lights when no one was in the area. Interior plumbing fixtures used 37% less water than conventional buildings as a result of water-efficient showerheads, high efficiency toilets and low-flow lavatory faucet aerators. 

Moisture sensors monitor real time, site specific air temperature, humidity, rainfall and other factors to provide daily watering cycle adjustment. A waste recycling programme implemented from demolition through completion diverted over 70% of waste from the landfill. The building’s structural steel averaged 95% recycled content, while the concrete averaged a 26% recycled content rate. [Source: energy-daily.com]

Green buildings
Remaking the way we make things

Cradle to Cradle (C2C) is a concept based on the notion that ‘waste is basically stupid’ as stated by German chemist Michael Braungart and American architect and designer William McDonough. C2C goes further than sustainability. Products should not be recycled, but upcycled: better than the original product. This is where the tagline of C2C comes in: remaking the way we make things. Nike has two relevant programmes running. The first programme takes back used shoes to re-use the rubber of the shoes for the top layer of sport fields. The second programme is called Nike Considered, a completely recyclable shoe. One big piece of leather is used and as little glue as possible. Furniture company Herman Miller developed, together with McDonough and Braungart, the office chair Mirra that can be easily disassembled and fully re-used as building material for new products.

Transforming value

Unilever’s ice package

is a foil when frozen and liquid at room temperature. It contains seeds from rare plants; when it is thrown away, a new life is generated.

Ecological miracle

Gaviotas is an eco-village in the Llanos, Colombia. It was founded in 1971 by Paolo Lugari who assembled a group of engineers and scientists in an attempt to create a model of sustainable living in one of the least hospitable political and geographical climates in South America. The community’s inventions and innovations: a children’s seesaw that drives a water pump, a ‘distinctive ‘sunflower design’ windmill, a unique form of quickcrete brick made with dirt. Planted over 1.5 million trees in the area. Resin from trees provide sustainable income. The biggest miracle: a tropical forest not seen for millennia in these savannas has regenerated, restoring the habitat of already proliferating deer, hawks, and anteaters. The 250 native plant species inspired Gaviotans to convert their pharmacy into a herbal apothecary and begin an ethno-botanical research lab with local Guahibo Indians.
Bundanoon banned bottled water by unveiling a series of new public drinking fountains. Shopkeepers ceremoniously removed the last bottles of water from their shelves and replaced them with reusable bottles. The tiny town, two hours south of Sydney, voted to ban bottled water after a drinks company moved to tap into a local aquifer for its bottled water business. Probably the first in the world to ban it. Activists say bottling water causes unnecessary use of plastics and fuel for transport. A New South Wales study found that in 2006, the industry was responsible for releasing 60,000 tonnes of gases blamed for global warming.

South Korea, followed by China, leads the world’s 20 largest economies in the percentage of economic stimulus money they invest in environmental projects.

Stimulus money committed to environmental projects

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Source: United Nation’s Climate Change Conference 2009
Penang couple Mylene Ooi (60) and Don Theseira (72) recycle paper, glass bottles, aluminium cans, old clothes and more. "Almost nothing leaves my house," said Ooi. Some rules: do not buy what you don’t need; buy household items that leave little or no waste (use bars of soap instead of liquid detergent); carry a tiffin carrier in the car so that takeaway food can be packed directly in the carrier (no styrofoam containers or plastic bags). The couple has a ‘10 pot’ composting system to reduce the amount of kitchen waste. Won grants and awards from Reader’s Digest magazine and the Ford Environmental Foundation. And it all started by reading an article in a newspaper on schoolchildren recycling newspapers!

Source: New Straits Times, Wed, 21 Feb 2007, article by Nisha Sabanayagam

Bacteria to convert waste into power

A team, led by Derek Lovley from the University of Massachusetts, isolated bacteria with large numbers of tiny projections, called pili, which were efficient at transferring electrons to generate power in fuel cells than bacteria with a smooth surface. The scientists isolated a strain of Geobacter sulfurreducens, which they called KN400 that grew prolifically on the graphite anodes of fuel cells. The bacteria formed a thick biofilm on the anode surface, which conducted electricity. They found large quantities of pilin, a protein that makes the tiny fibres that conduct electricity through the sticky biofilm.

Source: The Financial Express
Strengthened by tough pollution legislation based on cooperation between organizations and individuals, charging for water and waste management services, severe environmental taxes and the development of a Federal Office for the Environment to develop safety measures for natural hazards.

**Norway**
First home of world’s largest solar production plant owned by REC Group. Planning to become carbon neutral by 2030 (not 2050 as expected). Reducing at home driving and flying.

**Sweden:** Sweden will be free from the use of fossil fuels by 2020 (a majority of the country’s power nuclear or hydroelectric already). Solutions for automobile and flight transport include ethanol, animal waste conversion and leveraging the power of waves (converts waves into 4x as much energy as solar power in the same amount of time with no waste and no emissions).

**Finland:** Cleaning up water and air quality. Finland’s forests are growing faster than its deforestation. Credited with starting the United Nation’s Environmental Programme (UNEP) Task Force for Sustainable Building and Construction.

**Costa Rica:** Some 5% of the world’s biodiversity is contained in this country. A quarter of the nation is devoted to park preservation. Uses hydroelectric power across 80% of the country. Its 5% gas tax funds environmental programmes.

**New Zealand:** The nation was host to the 2008 World Environment Day. Developed the Environmental Risk Management Authority that regulates the introduction of non-native species and environmental components to determine their threat to New Zealand’s pristine atmosphere.

**Austria:** Water quality and forest preservation is emphasised. Result: the quality of Austria’s lakes and rivers is among the highest in the world. The development of Austria’s National Protective Forest Plan has also helped in keeping the nation’s natural beauty pristine.
greenest
cities

**Calgary:** Popular Canadian winter destination with a number of major mountain resorts near the city and metropolitan area. Excellent rail transportation system minimises traffic congestion. Low pollution despite the presence of a number of industries.

**Honolulu:** Industries in this region are light, non-polluting. An excellent bus transit system has reduced exhaust and traffic fume levels.

**Helsinki:** Least polluted city in Europe. Popular light rail commuter system minimises the use of cars and other vehicles.

**Ottawa:** Has one of the best volunteer programmes to keep the city green and clean. During its Spring Cleaning the Capital Month (April 15 to May 15), over 60,000 volunteers clean parks, roads and sidewalks etc.

**Minneapolis:** Marked by cleanliness and environment-friendly policies. Along with the good rail systems, the administration emphasises bike riding.

**Oslo:** From 2010, the city plans to run buses on fuel generated from human waste. A successful public bicycle rental programme minimises auto emissions.

**Stockholm:** Spearheaded the transition from fuel-guzzling cars to hybrids (about 5 per cent of the cars in Stockholm). Has little heavy industry in or around it. Clean public transportation system.

**Zurich:** Uses multiple public transport systems as a good alternative to private cars. This decreases the number of polluting vehicles.

**Katsuyama:** Japanese city, survives on tourism. Investing extensively to keep the city green.

**Berne:** Historic center of Bern featured among UNESCO World Heritage Sites since 1983. Among the world’s top ten cities for the best quality of life.
**Eco laptop:** The Asus notebook’s case is covered in bamboo and all the plastic inside it is recyclable. There is no paint, no spray, or electroplating used on its components and it is lined with cardboard.

**Airpod:** This car is completely powered by compressed air with no emissions. It manages top speeds of 30 miles/hr and even in the worst stop-start traffic snarls, costs less than a penny a mile. The tank can contain 200 litres of compressed air and on a full tank allows 125 miles of travel. The fuelling can be done with an air pump within a mere 2 minutes (completely empty tank to full). There is also a built-in air compressor, which fills up from the air around, overnight. To be launched in 2012.

**Ice energy:** The water in the Ice Bear is frozen overnight when temperatures are lower and electricity cheaper. The ice then cools the AC unit’s refrigerant during the day. This results in a 30% energy saving and a standard AC unit should last 15 years.

**The eco kettle:** Brian Hartley’s Eco Kettle measures the exact amount of water you require – from a single cup to a full jug - into a separate chamber for boiling. It is also insulated to keep the water hot. The result is an energy saving of up to 30%.

**Designer carafes:** Pierre Cardin distributed 30,000 of his Eau de Paris designer carafes free to convince Parisians that local tap water is just as healthy, discouraging the use of bottled (plastic) water.
University of Leeds’s washing machine Xeros uses as little as one cup of water for each washing cycle - with less than 2% water and energy - and removes virtually all types of stains. The clothes come out of this washer almost dry, reducing the need for dryer - and electricity - usage.

**Eco boat:** Earthrace, a state-of-the-art speed-craft runs on human fat, besides other biodiesel fuels. The Earthrace runs on 100% renewable biodiesel fuels and has zero-carbon foot-print.

**Ecopod recycled biodegradable coffin**
Made from naturally hardened, 100% recycled newspaper and finished with a coloured sheet made from recycled silk and mulberry leaves. The result: a non-toxic burial.

**The revolving Fluxxlab Revolution Door**
Utilises the wasted kinetic energy from a revolving office door to generate power.
A Civil Action (1999), John Travolta plays the lead as a civil litigation lawyer and his decade-long case against an American corporation in a water pollution dispute brought by citizens of a Massachusetts town.


China Syndrome (1979) Unprecedented problems crop up in a nuclear power plant. Jane Fonda, Michael Douglas and Jack Lemmon star in this classic.

Silkwood (1983) Cher, Meryl Streep and Kurt Russell lead the cast in another nuclear power thriller.

Gorillas in the Mist (1988) Sigourney Weaver plays Dian Fossey in her work to save the mountain gorillas of Rwanda.

Danger Zone (1996) Hazardous waste is nobody’s friend and in this movie Ron Silver takes on the role of an eco-villain, responsible for dumping hazardous waste in an African state.

How to calculate your carbon footprint

1. Multiply your monthly electricity bill by 105
2. Multiply your monthly gas bill by 105
3. Multiply your monthly oil (petrol/diesel) bill by 113
4. Multiply total yearly mileage by 0.79
5. Multiply the number of flights you take in a year — of four hours duration or less — by 1,100
6. Multiply number of flights you take in a year — of more than four hours duration — by 4,400
7. Do you recycle newspaper? If yes add zero, if no add 184 (recycling is treating or processing used or waste materials to make them suitable for reuse and according to some experts, selling to the kabadiwala does not count).
8. If you recycle aluminium and tin add zero, if not, add 166

Your carbon footprint is the sum of the above. The formula is for pounds per year.

Source: The Environment Equation by Alexandra Shimo-Barry
CHAMPIONS OF THE EARTH: Recognizes outstanding environmental leaders, whether individuals or organizations, that have exemplified inspiration, vision, innovation, leadership and action for the environment. Established by UNEP in 2004.

UNEP SASAKAWA PRIZE: Recognizes laureates with a proven record of achievement, as well as the potential to make outstanding contributions to the environment consistent with UNEP’s policy and objectives. Partnership between UNEP and The Nippon Foundation.


GREEN STAR AWARDS: Recognizes those who have made remarkable efforts to prevent, prepare for, and respond to environmental disasters around the world. This international award is a joint initiative between UNEP, the UN Office for the Coordination of Humanitarian Affairs and Green Cross International.
The Forest Stewardship Council (FSC) logo identifies products, which contain wood from well-managed forests certified in accordance with the rules of the FSC. Ensures that people, wildlife and the environment benefit from forestry practices. FSC certification is globally recognized as being the most credible and strongest system for ensuring well-managed forests. Demonstrates commitment to sustainability.

Reinforest Alliance
An effective way to demonstrate your or your client's commitment to sustainability.

Green-e.org
Green-e is the most widely recognized renewable energy certification programme administered by the not-for-profit Center for Resource Solutions, San Francisco. Provides consumers with an easy way to identify environmentally friendly products.

Universal recycling symbol
One with the Earth is a symbol intended for anyone to show any kind of environment-friendly activity or support, a "universal symbol for an environmental awareness".

ISO 14001
Standard specifies requirements for an organization's environmental management system. Applies to those specific environmental aspects and procedures over which an organization has control and where it can be expected to have an influence.

ISO 14001:2004
Gives requirements for environmental management systems, confirms its global relevance for organizations wishing to operate in an environmentally sustainable manner.

ISO 14001:2004
Provides assurance to management that it is in control of the organizational processes and activities having an impact on the environment; assures employees that they are working for an environmentally responsible organization; provides assurance on environmental issues to external stakeholders; complies with environmental regulations; supports the organization's claims and communication about its own environmental policies, plans and actions; provides a framework for demonstrating conformity via suppliers' declarations of conformity, assessment of conformity by an external stakeholder — such as a business client — and for certification of conformity by an independent certification body.

LEED certification
LEED certification is a recognition that a construction project or building can attain by utilizing environment-friendly building practices during construction or remodeling. LEED is the acronym that stands for Leadership in Energy and Environmental Design and is the Green Building Rating System developed by the U.S. Green Building Council. The model was developed in 1998 to encourage environmental awareness amongst government agencies, architects, engineers, developers, and builders.
There must be more to life than having everything!
Maurice Sendak

As you simplify your life, the laws of the universe will be simpler; solitude will not be solitude, poverty will not be poverty, nor weakness.
Henry D. Thoreau

Our world has enough for each person's need. But not for his greed.
Mahatma Gandhi

Treat the earth well. It was not given to You by your parents; It was loaned to you By your children.
Kenyan Proverb

“We abuse land because we regard it as a commodity belonging to us. When we see land as a commodity to which we belong, we may begin to use it with love and respect.”
Aldo Leopold, naturalist

Happy is the man... he Delights in the law of the Lord, and on his law he meditates day and night. He is like a tree planted by streams of water, that yields its fruits in its season, and its leaf does not wither.
Psalms 1:1-3
When you enter a grove peopled with ancient trees shutting out the sky with their thickly intertwined branches, do not the stately shadows of the wood, the stillness of the place and the awful gloom of this doomed cavern then strike you with the presence of a deity?

Seneca

Keep a green tree in your heart and perhaps a singing bird will come.

Chinese proverb

When we heal the earth, we heal ourselves.

David Orr

Hoping for the best is not a policy, it is a delusion.

Emily Armistead, Greenpeace

Keep a green tree in your heart and perhaps a singing bird will come.

Chinese proverb

Kishore Asthana
A labourer disassembles motorcycles at a recycling factory in Hefei, Anhui province in China. Hefei will completely ban all motorbikes from its downtown area to curb pollution.

German psychologist Dr Marc Stollreiter led a team of 150 volunteers in fishing out 2 truckloads of plastic muck from the Dal Lake.

A prototype toilet made by Singapore-based Rigel Technology that transforms solid waste into fertilizer is on display at the World Toilet Summit in Singapore.
What does it take to discover something new every day?

British shops hand out more than one billion plastic bags each month, at huge cost to the world’s environment. Yesterday, in a landmark decision, 33 councils in London joined a growing national campaign to...
**Afforestation:** Planting trees where there were none before.

**Biodegradable:** Capable of being broken down by living organisms into inorganic compounds. Ideally all waste should be biodegradable.

**Biomass:** The total amount of living organisms in a given area.

**CFCs (chlorofluorocarbons):** Any of the various compounds consisting of chlorine, hydrogen, fluorine, and carbon. They were first invented by DuPont Corporation in 1928 and have been widely used as refrigerants, as aerosol propellants, as cleaning solvents and in the manufacture of plastic foam. In 1972, scientists discovered that gaseous CFCs can deplete the ozone layer when they slowly rise into the stratosphere and their chlorine atoms react with ozone molecules.

**Composting:** The natural biological decomposition of organic material in the presence of aerobic bacteria to form a rich, dark soil fertilizer.

**Deforestation:** The felling of trees, usually for commercial purposes.

**Environmental Impact Assessment (EIA):** The critical appraisal, both positive and negative, of the likely effects of a proposed project, development, activity or policy on the environment.

**Ecosphere:** Refers to the entire global ecosystem that comprises atmosphere, lithosphere, hydrosphere, and biosphere as inseparable components.

**Ecosystem:** A dynamic and complex system of plant, animal and microorganism communities and their non-living environment all interacting as a functional unit within a defined physical location. The term may be applied to a unit as large as the entire ecosphere, but usually refers to a division thereof.

**Greenhouse effect:** A warming of the Earth’s atmosphere caused by the presence in the atmosphere of certain heat-trapping gases (e.g., water vapour, carbon dioxide, methane). These gases absorb radiation emitted by the Earth, thereby retarding the loss of energy from the system to space. The greenhouse effect has been a property of Earth’s atmosphere for millions of years, and is responsible for maintaining the Earth’s surface at a temperature that makes it habitable for human beings. It is the “enhanced greenhouse effect” that is expected to cause a large and rapid rise in average global temperatures.

**Hydrofluorocarbons (HFCs):** Chemicals with fluorine but no chlorine, and therefore unlikely to damage the ozone layer. However, HFCs are potent greenhouse gases.

**Inorganic:** Matter other than plant or animal, and not containing a combination of carbon, hydrogen and oxygen, which all living things contain.

**Organic Compounds:** Compounds composed of carbon and hydrogen. Organic compounds form the basic building blocks of living tissue.

**Organic:** Referring to or derived from living organisms. In chemistry, organic refers to any compound containing carbon.

**Ozone:** A gas composed of three atoms of oxygen (O3). Ozone partially filters certain wavelengths of ultraviolet light from the Earth. Ozone is a desirable gas in the stratosphere, but in high concentrations at ground level, it is toxic to living organisms.

**Ozone layer (stratospheric ozone):** Ozone is formed in the stratosphere from the conversion of oxygen molecules by solar radiation. It absorbs much ultraviolet radiation and prevents it from reaching the Earth.

**Parts Per Million (PPM):** The number of “parts” by weight of a substance per million parts of water. This unit is commonly used to represent pollutant concentrations. Large concentrations are expressed in percentages.

**pH:** An expression of both acidity and alkalinity on a scale of zero to 14, with seven representing neutrality; numbers less than seven indicate increasing acidity and numbers greater than seven indicate increasing alkalinity. Acid rain can increase the pH level of the water in a lake, thereby killing all life.

**Recyclable:** Refers to such products as paper, glass, plastic, oil and metals that can be reprocessed into products again, instead of being disposed of as waste.

**Reforestation:** The process of re-establishing a forest on previously cleared land.

**Sustainable development:** Development that ensures that the use of resources and the environment today does not compromise their use in the future.

**Toxic:** Harmful to living organisms.

**Ultraviolet Radiation (UV):** Electromagnetic radiation in the wavelength range of 200 to 400 nanometres. (Also known as ultraviolet light).

**VOC (volatile organic compound):** The term used to describe the organic gases and vapours that are present in the air. They are believed to be involved in ground-level ozone formation. Some VOCs are toxic air pollutants.

**Wastewater treatment plant:** A facility containing a series of tanks, screens, filters, and other processes by which pollutants are removed from water.
“The final and most important sign that we are succeeding will be the term ‘green’ blessedly disappears. There will be no such thing as a green building, a green car, a green home, a green appliance, a green window, or even green energy. All of those things will simply be the norm, because the ecosystem of prices, regulations and performance standards will demand it. Therefore, you won’t legally or financially be able to build anything that isn’t green – anything that doesn’t have the highest performance standards for energy efficiency and clean power designed in it from inception. Every new car will be green, every new office building will be green, every new home will be green, every new appliance will be green. Green will be the standard. It will be the new normal – nothing else will be available, nothing else will be possible.”

Thomas L. Friedman, *Hot, Flat and Crowded*