

Centre for Business Sustainability,
IIM Lucknow, Prabandh Nagar,
Off. Sitapur Road, Lucknow- 226 013
E-mail: cbs@iiml.ac.in Phone: +91 522 2736987, +91 522 2736989

Business Sustainability News

International

Disney, Microsoft and Shell opt for self-imposed carbon emissions taxes

Where governments have failed to act, some big firms have taken matters into their own hands

By **Marc Gunther**, *Guardian Professional*



Is carbon tax a Mickey Mouse gesture against the millions of miles that park visitors travel by plane to reach Disneyland? Photograph: Thomas Samson/AFP/Getty Images

Visitors who climb aboard the steam trains in the Disneyland resort in southern California need not worry about their carbon footprint. The trains are powered by soy-based cooking oil recycled from the resort's kitchens.

It's a Mickey Mouse gesture, really, when set against the millions of miles that park visitors travel by car and plane to reach Disneyland. But it's driven, in part, by an innovative and forward-thinking tool that Walt Disney, which posted revenues of \$42.3bn (£27.8bn) in 2012, uses to regulate its greenhouse gas emissions. A self-imposed carbon tax.

It's not just Disney. Although most of the world's governments have declined to put a price on carbon emissions, a handful of global companies, including Microsoft and Shell, have chosen to act on their own. They have established internal carbon prices in an effort to reduce emissions, promote energy efficiency and encourage the use of cleaner sources of power, just as a government tax or cap-and-trade program would.

"The more you emit, the more you pay. The less you emit, the less you pay," said Beth Stevens, a senior vice-president at Disney. "We want to provide an incentive for the businesses to innovate."

At Disney, the carbon tax seems to be working, by driving incremental efficiency measures that might otherwise have been overlooked and by raising funds to buy carbon offsets. Since 2009, when the tax was imposed, the company's engineers have changed thermostat set points, installed light sensors and efficient bulbs, increased the efficiency of chillers, heat exchangers and pumps, and shut down the lights on park icons like Cinderella's Castle and Spaceship Earth when the parks are closed.

But, and this is a big but, Disney's vacation cruise business has been so successful that the company doubled the number of carbon-spewing ships in its fleet, from two to four. That helped drive a 46% increase in Disney's absolute emissions from 593,416 tons in 2010 to 867,353 tons in 2012, the company has reported.

The good news is that Disney could then turn to what it calls a climate solutions fund, where monies from its carbon tax are deposited. The tax, the price of which depends upon the costs of offsets and the volume needed by Disney to reach its emissions targets, has been set at between \$10 and \$20 a ton and has raised about \$35m so far. That has enabled Disney to invest in a variety of certified forest-carbon projects in Inner Mongolia, China, Peru, and the Democratic Republic of the Congo, as well as in Virginia, Mississippi and its home state of California. Taking those carbon offsets into account, Disney's 2012 emissions have been cut in half from a 2006 baseline. The company has set a long-term goal of zero net emissions.

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Lockheed Piloting New Source of Ocean Energy With Great Potential

By *SustainableBusiness.com News*

Aerospace manufacturer Lockheed Martin is looking under the ocean to develop ocean thermal renewable energy, a technology we rarely hear about, but which has strong potential.

Apparently, Lockheed has quietly been working on this technology for decades and will now develop a pilot off the coast of southern China. They signed an agreement with Beijing-based Reignwood Group, which produces "Red Bull," to build a 10 megawatt (MW) plant that powers their eco-resort, which is under development. It is planned to be a net-zero energy community.

Reignwood is developing two large eco-resorts and has plans for others on the China's coast. After this pilot plant is operating - the largest ocean thermal project to date - the companies say they will improve the design and then build additional plants ranging in size from 10-100 MW.

A commercial-scale plant would be able to power a small city.

"The benefits to generating power with OTEC are immense," says Dan Heller, vice president of new ventures for Lockheed Martin Mission Systems and Training. "Constructing a sea-based, multi-megawatt pilot OTEC power plant for Reignwood Group is the final step in making it an economic option to meet growing needs for clean, reliable energy."

Ocean Thermal Energy Conversion (OTEC) leverages the ocean's natural thermal gradient to generate power.

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Nature-inspired sustainability: market in maggot saliva?

By Oliver Balch, for guardian.co.uk



Bamboo is hugely water efficient. By growing it in mining concessions, it has the double benefit of shoring up water resources and, once harvested, it can be used for affordable social housing. Photograph: Rex Butcher/Getty Images/Asia Images

Gunter Pauli is a firm believer that if you're not living life on the edge, you're taking up too much space. As maxims go, it sounds a little hackneyed. Until you speak to him, that is. Then it becomes clear that he's a man uncomfortable with sitting still, pathologically averse to accepting the status quo, and keen to "push science beyond what science accepts".

A Belgian-born economist, entrepreneur and general eco-buff, Pauli has an eclectic CV. As former head of environmentally-friendly cleaning products firm Ecover, he commissioned one of the world's first fully ecological factories. He then jetted off to Japan, where he played an influential role in preparing the ground for the Kyoto Protocol. Since then, he's set up a total of 12 companies in as many years.

Nature-inspired sustainability

For all this bustle and energy, his underlying philosophy is based around simplicity. The world around us, he argues, provides the archetypal design for efficient, flexible and renewable use of resources. "Natural systems are able to respond to the needs of everyone with what you have... Just look at the earth, the worms, the bees, the trees, the fungi, the bacteria – everything is thriving."

What evidently excites Pauli is translating that insight into business models. This enthusiasm led him on a quest to identify 100 workable examples that reflected the essential systems used by nature. Originally intended as a report for the Club of Rome, Pauli's pursuit morphed into a popular book, *The Blue Economy*.

One of the key tenets of Pauli's Blue Economy philosophy is the idea that nature responds to basic needs and then evolves from sufficiency to abundance. He cites the example of solar electricity. Pauli is involved with a research team in sun-starved Sweden that has designed solar panels with a reflective film, rather than a laser. The film enables the panels to generate energy from both sides, not just the sun-facing side. But energy is just the starting point. The panels are equipped with a water-cooling device, the primary objective of which is to stop the system overheating but which also happens to generate hot water for free. Lastly, the solar system forms part of the integral roof structure, offering both warmth via insulation as well as shelter.

"So you have four functions in one. What's the result? The kilowatt-hour cost is four euro cents. When you have four functions and the amortisation goes over

four years, you're talking about a completely different costing. And where do we do it? In Sweden, the country that we least expected", Pauli explains, citing another core principle of his philosophy – that in nature, one process generates multiple benefits.

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Learning from Japan's early electric-vehicle buyers

About one-third of early buyers in Japan say their next car may not be an electric vehicle. Companies should heed their complaints.

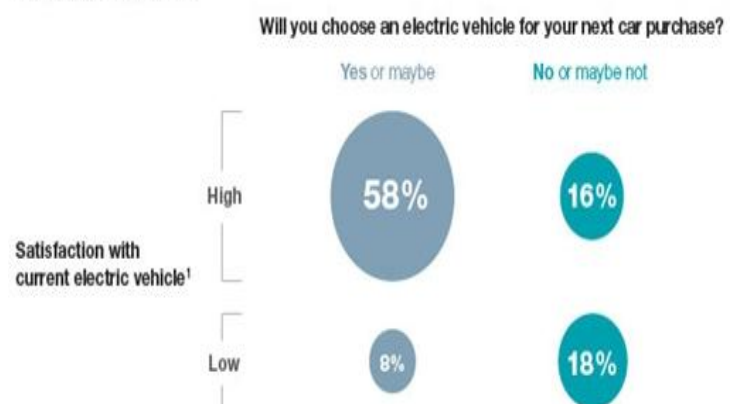
By Axel Krieger, Philipp Radtke, and Yoshi Takanuki

If electric vehicles (EVs) are to develop from a niche into a mass market, carmakers should learn from early adopters who say they may not buy one again. Our recent research on such consumers in Japan finds that about one-third of them fall into this category. These buyers said they were "seduced" by low energy costs, attractive subsidies, and a good test drive. But they were less well informed about EVs than were environmentally conscious "green enthusiasts" (who love EV technology for its low energy costs and comfortable driving experience) and became less enthusiastic about their purchase when they faced issues such as higher electric bills and locating places to charge their cars. To lock in the reluctant buyers, EV makers should adopt retention and education programs to avoid negative market feedback that could "poison the well" for new buyers. We also found that although early adopters weren't concerned about price, nonbuyers were. Until prices drop to the point where the level of mass-market uptake stimulates infrastructure development, manufacturers must learn how to build customer loyalty to broaden the market for EVs.

Exhibit

Approximately one-third of early adopters in Japan may not buy an electric vehicle next time.

% of electric-vehicle buyers



¹High satisfaction = respondents who answered "very satisfied" or "satisfied"; low satisfaction = respondents who answered "somewhat satisfied" or "unsatisfied."

Source: 2012 McKinsey online survey of 1,300 respondents, including 106 early electric-vehicle buyers, who had bought a car in Japan in the last 24 months; in-depth interviews; observational research; and focus groups

[<Source>](#)

How Procter & Gamble achieved zero waste to landfill in 45 factories

P&G has achieved double whammy of zero waste status and increasing revenues with innovative technology and re-use

By **Sadhbh Walshe**, *Guardian Professional*,



Gillette's World Shaving Headquarters in Boston is one of the factories to have achieved zero waste status. 82% of employees have opted in to the zero waste space programme. Photograph: Dave Walsh

Today Procter & Gamble (P&G) are announcing that 45 of their facilities across the world have now reached zero manufacturing waste to landfill status.

Globally P&G has already ensured that 99% of all materials entering their plants leave as either finished product or end up being reused, recycled or converted to energy. But in the 45 plants that have achieved zero waste status, through innovative technologies and creative reuses, the company has managed to find ways to divert that remaining 1% from landfills. Better still for the company's bottom-line, they have found ways to convert this waste stream into a new revenue stream.

Much of the success in tackling that 1% of landfill waste is attributed to the company's Global Asset Recovery Purchases (GARP) team which was formed in 2007. The GARP team, which is headed up by Forbes McDougall, do not look at "waste as waste," but as something "that can always be reused for another purpose." So, for example, when they found that after recycling scraps of paper from their Charmin plant in Latin America, they were still left with unusable fibres, they found a way to convert those fibres into low cost roof tiles. Similarly, waste that is left from making shampoo is turned into industrial fertilizer and scraps from feminine care products are turned into pellets that are used to make plastic soles for low cost shoes. The genius behind GARP, says McDougall, is that his team specialise in purchasing and are not an environmental team per se.

"It's very easy to just press the scrap button. But now we tell people 'don't scrap stuff, call GARP.' Purchasing guys are good at finding viable solutions financially, so we treat (handling waste) as a business opportunity. Once you start delivering revenue for the business, then you are everyone's friend."

Repurposing waste also requires innovative (and often simple) uses of technology. McDougall describes how rejected feminine care pads at one of their plants in Budapest, Hungary ended up being diverted from landfills to be used as fuel to make cement. Initially the pads which contained both paper and plastic were sent to the cement plant whole. But they soon discovered that they burned much better and became a better energy source if they were shredded down. So they developed a new shredder and a vacuum that

enabled them to separate the paper from the plastic and vacuum off the material as it went along the line. What was once landfilled became a good source of fuel and a good source of revenue for P&G.

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US Army Signs Onto 20 MW Solar Farm, Biggest in Military

By *SustainableBusiness.com News*

The Army base in Fort Bliss, Texas has a goal of getting to net-zero energy, and as part of that, they are about to build a 20 megawatt solar farm, the biggest for the military to date.

It will power all the division headquarters and most of the eastern sector of the sprawling complex, and is the first partnership between the military and a major local utility on a renewable energy project of this scale.

El Paso Electric is building the plant, which will come online in 2015. They are also planning another 20 MW solar plant and pursuing wind and geothermal projects.

Fort Bliss already has a 1.4 MW solar array, the Army's second-largest, and 13.4 MW of solar PV on post rooftops, maintained by SolarCity as part of Project SolarStrong.



Other measures toward net-zero energy are making life better at the Army base - they've planted 14,700 trees and created biking and walking paths that wind through the complex.

The Army's goal is for renewables to supply 25% of energy by 2015.

In 2011, the US Army announced that six bases would target net-zero energy, another six net-zero water and another six net-zero waste.

Fort Bliss was one of several bases that chose to target all three ... by 2020.

Recycling has also gotten a lot more attention on base, raising \$1 million last year for projects such as skating parks and spinning bicycles. There's also been a dramatic drop in electricity use in post housing, says Major General Dana Pittard.

"Changing behavior and promoting a culture that encourages energy conservation are keys to achieving Net Zero," he explains. "And that is what we hope our soldiers will then take with them when they go on to other installations and move into society throughout the county."

"The solar farm, along with our environment campaign plan, are both part of a larger effort to make Fort Bliss the most fit, most healthy, most resilient community in America that is environmentally sound and is best at preparing soldiers and units for combat," he says.

Soldiers feel much more part of a community when they get outdoors. It's "no accident" that Fort Bliss has the Army's lowest suicide rate in the US, he says.

"We feel that the fitness, the resiliency and the Net Zero is interrelated," Pittard says. "For us here, it has been a no-brainer. Now what we hope is that the rest of the Army sees that and will replicate it."

[<Source>](#)

Measuring the real cost of water

Big savings are available to companies that look beyond their utility bills and understand the broader economic costs of their water consumption.

By Kimberly Henderson, Ken Somers, and Martin Stuchtey

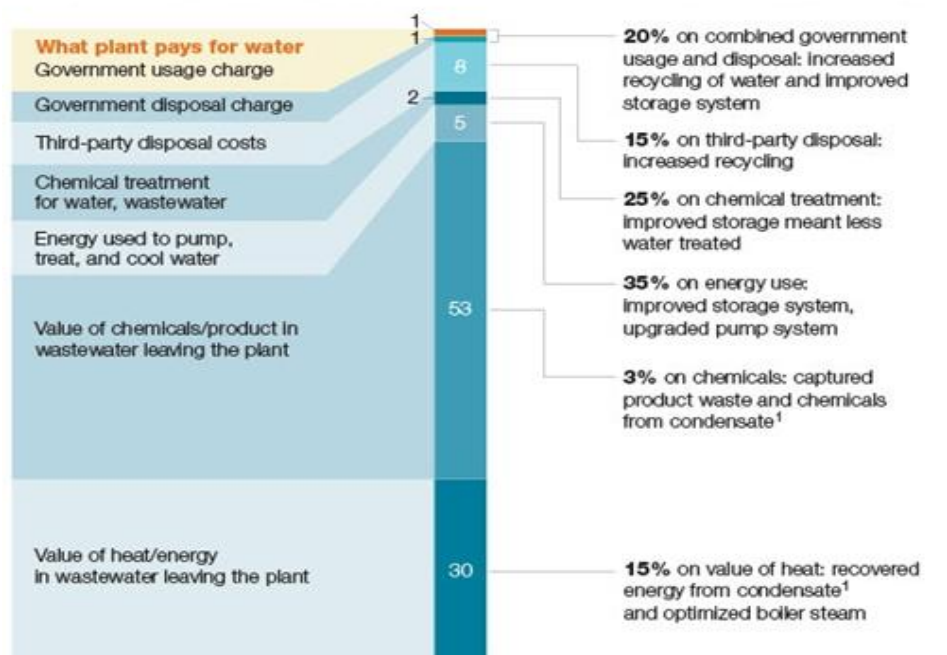
The low nominal cost of water in many regions means that a lot of investments aimed at cutting its use don't seem to offer satisfactory returns. The picture may change when organizations take a broader view of water: as a "carrier" of production inputs and outputs to which a variety of costs and recoverable values can be assigned. Since these elements may total as much as 100 times the nominal cost of water, optimizing its use can yield significant financial returns.

One pulp-and-paper company analyzed its water-use costs as a carrier, including tariffs, charges to dispose of effluents, and water-pumping and heating expenses. It also examined the value of recoverable chemicals and raw materials "carried" by water from its factories and the potential heat energy lost in cooling processes. By closely surveying these operations, the company identified opportunities for better water storage and for reducing chemical use in paper bleaching. Additionally, the company recaptured heat from condensation processes and reduced the amount of steam consumed by boilers. These moves saved nearly 10 percent of measured carrier costs, reducing total operating expenses by 2.5 percent and improving sustainability by cutting water use nearly in half. Industries such as steel, packaged goods, chemicals, and pharmaceuticals have similar carrier cost-value profiles. Companies may be able to identify substantial savings by focusing on the broader economic costs of water.

Exhibit

A pulp-and-paper company analyzed the 'carrier' elements in its water, revealing costs and value far above basic water fees.

Disguised example; index:
government charge for water usage = 1



Overall, the company saved approximately 10% on total carrier costs and consumed 45% less water.

¹Condensed steam, which carries value in the form of heat and chemicals (the latter are consumed in the water-treatment process required to upgrade water for use in boilers and turbines).

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Tips:

We see people are talking about sustainability in every corner of the world. It is good to see that people are becoming more serious about sustainability. But still there is a long way to go and much more is to be done towards sustainability. We have to keep sustainability in mind all the time and do whatever possible. On every front we should act sensibly and conserve the resources.

1. It is known to all that LEDs are the most efficient power savers. But still people opt for incandescent lamps though LEDs are the ideal replacement for fluorescent tubes and bulbs. All of us should go for LEDs as they are relatively energy efficient, inexpensive and easily available.
2. LEDs are available in variety of colours and shapes that help us in better designing as it can be used for indirect lighting or hidden lighting as well. The LED strips available in the market come in single as well as in multiple colours. LED lights are incorporated in a lot of decorative fittings as well, which is advantageous as they don't transmit heat and are cost-effective.
3. Clean the air filters of the AC regularly to make ensure proper air flow. This will increase the efficiency of your AC as well as help in savings on energy bills.
4. Turn off exhaust fans of kitchen bath etc. after you are done with cooking or bathing.
5. Design your house so that natural day light serves the purpose in the day time and no additional lights are required.
6. Install solar water heaters in place of electronic or gas geysers. This will not only save energy but also reduce burden on your pocket.
7. Rainwater harvesting for flats have been mandatory in some places but while constructing new houses also construct storage tank for rainwater harvesting. The scarcity of water has become rampant in many parts of the world.
8. While shopping electronic/ electrical appliances always go for energy efficient appliance which have been given higher star ratings.
9. Aviation has significant share in carbon emissions, and that too is increasing very rapidly. Therefore unless its necessity do not air travel by air.
10. Recycle the waste material and use for other useful purposes. Use the wood from old furniture to make new furniture.

Peru declares environmental state of emergency in its rainforest

By **Dan Collyns** in Lima, for *guardian.co.uk*

Peru has declared an environmental state of emergency in a remote part of its northern Amazon rainforest, home for decades to one of the country's biggest oil fields, currently operated by the Argentinian company Pluspetrol.

Achuar and Kichwa indigenous people living in the Pastaza river basin near



Aerial view of the Amazon rainforest in Peru. Photograph: Design Pics Inc / Rex Features

Peru's border with Ecuador have complained for decades about the pollution, while successive governments have failed to deal with it. Officials indicate that for years the state lacked the required environmental quality standards.

A new law published on Monday that sets out, for the first time, environmental quality standards setting acceptable limits for contaminants in soil, may be a key advance, say officials.

Peru's environment ministry has given Pluspetrol 90 days to clean up the affected areas and reduce the risk of contamination to the local population.

In declaring the state of emergency, Peru's environment ministry said tests in February and March found high levels of barium, lead, chrome and petroleum-related compounds at different points in the Pastaza valley.

Pluspetrol, the biggest oil and natural gas producer in Peru, has operated the oil fields since 2001. It took over from Occidental Petroleum, which began drilling in 1971, and, according to the government, had not cleaned up contamination either.

Several multimillion dollar fines have been levied against Pluspetrol in recent years. The company has appealed against all of the fines in the Peruvian courts, including an \$11m (£7m) fine levelled in January for failing to complete an environmental clean-up of an oil block located inside Peru's largest national park, Pacaya Samiria, in the Loreto region.

"We know that there has been bad environmental behaviour by the company in the past because there were no regulations but also in the present because it's not acting responsibly and it's not giving the correct information about what's happening in the zone," Peru's environment minister Manuel Pulgar-Vidal said of Pluspetrol to local media.

In a statement, his ministry said the government began administrative actions against Pluspetrol in March 2012 over contamination at block 1AB, Peru's biggest crude oil field in the adjacent Corrientes river basin. The ministry says further environmental checks will be carried out on the upper Mara  n, Tigre and Corrientes river basins where Pluspetrol also operates.

"Serious attention to the environmental disaster in the northern Peruvian Amazon is long overdue. The Peruvian health ministry registered unacceptable levels of lead and cadmium in the blood of Achuar children almost seven years ago," Andrew Miller, lead Peru campaigner for Amazon Watch told the Guardian.

"Yet only following years of community-based environmental monitoring, pressure from indigenous federations, and the recent visit of Peruvian members of congress has the political will been created for the government to take appropriate action."

The Peruvian government plans to auction a further 29 new oil and gas concessions this year.

A spokesman for Pluspetrol said the company was "evaluating the situation" but refused to comment further.

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A Great Green Wall Growing in Africa

By *SustainableBusiness.com News*

Africa has embarked on two visionary projects to protect the country from the impact of climate change and to feed its people. A **Great Green Wall** of trees is springing up across the continent to prevent more desertification. It spans 4,300 miles from coast to coast and travels through 11 countries.

The **Sahara Forest Project** plans to develop large-scale desert oases in northern Africa using concentrating solar and vegetable production.

By **Katie Valentine**

In Africa, climate change is exacerbating the desertification of the continent. The Sahara Desert, which covers the majority of northern Africa, is spreading southward at a rate of 30 miles per year.

This spread of desert sands into the semi-arid region of the Sahel is causing problems for the people who live there, as *The Ecologist* reported last year:

Senegal's capitol city Dakar sticks out into the Atlantic Ocean on a peninsula. It's at least a thousand miles to the Sahara desert yet the air today is so thick with sand that the tops of buildings disappear in a sandy haze. It's the worst sand storm in a year and people here are worried that climate change will cause these events to be more common. Seasons are shifting across the region. In Senegal the rainy season used to start in July or August but now it doesn't start until September. Decreased rain - along with over grazing of land - is causing an increase in deserts across the Sahel.



Desertification affects about 40 percent of the continent, and according to the U.N., two-thirds of the continent's arable land could be lost by 2025 if the trend continues unabated. Africa has recognized these threats and has turned to projects that re-vegetate the land in hopes of holding off the spread of the desert.

One initiative, the **Great Green Wall**, aims to battle desertification by planting a wall of trees and vegetation from coast to coast across the continent, below the southern edge of the Sahara.

Once completed, the wall will be 4,300 miles long and 9 miles wide and will cut

through 11 African countries in the Sahel region of the continent. The plan was approved by the African Union in 2007, and in July 2008, the 11 countries in the wall's path began planting their trees.

The trees and vegetation are planted to prevent erosion and slow wind speeds, but they also provide fruit and vegetables for Africans in a region that is in the midst of a food crisis - according to the United Nation's Food Program, as many as 11 million people in the Sahel don't have enough to eat.

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Put nature at the heart of economic and social policymaking

Nature has powerful potential to tackle the world's social and economic challenges but it is too often framed as a problem rather than solution, says Aniol Esteban

By **Aniol Esteban**, *Guardian Professional*,



The role of nature in encouraging sustainable behaviour, reducing carbon emissions and increasing resource efficiency is often underestimated. Photograph: Graham Morley/ Alamy

In a context of ecological and economic instability, governments will need to start thinking of new ways to deliver wellbeing and meet key society goals with fewer resources. This will need to be done in a way that does not increase our vulnerability. The natural environment provides a solution to this challenge, reconciling economic and ecological objectives. But this potential is being overlooked in policy-making – why?

The natural environment helps us deliver key societal goals in a cost-effective way. There is a significant body of evidence describing how green spaces help to better health and education, urban regeneration and crime reduction; and the potential savings that this has for the public budget.

The natural environment is increasingly linked to positive health outcomes. Several studies show that contact with the natural environment and green space promotes good health, while participation in regular outdoor physical activity generates physical and mental health benefits. Physical exercise in natural environments has important implications for public and environmental health. Conservation volunteering, for example, has the potential to deliver dividends in terms of environmental conservation, wellbeing and health.

Environmental experiences and contact with nature in childhood promote physical and mental health, delivering improved education and development. Green spaces and outdoor locations provide key environments for effective learning, in particular for children not engaged with formal education, and can stimulate children's learning abilities and development. Nature is also a key resource to help reduce crime levels and re-offending rates and to strengthen community cohesion by providing a neutral space for people to meet and interact.

The natural world has potential to play a key role itself in encouraging sustainable behaviours, reducing carbon emissions and improving use of resources. The links between nature and sustainable lifestyles are complex, and while more work is needed, some studies, such as the one carried by Essex University and BTCV Cymru, suggest a positive link between environmental volunteering and changes towards more pro-environmental behaviours. These potential gains are too big to be completely overlooked when it comes to policy development.

Natural England and The Conservation Volunteers are two of the organisations that have been most active in trying to generate evidence; while the Royal Society for the Protection of Birds, WWF-UK, and the National Trust among others have also relevant projects in this area. A healthy natural

environment also increases our resilience to climate change and resource scarcity.

Much has been written about the role nature plays on this front. From flood protection to pest control, several examples can be found in The Millennium Ecosystem Assessment, The Economics of Ecosystems and Biodiversity (TEEB), and the UK National Ecosystem Assessment (UKNEA). The evidence is known and yet this knowledge is still massively underexploited. There is a need to bring this information to life and make it count in policy making and business.

In the face of economic uncertainty, there is a well-known line that governments repeat over and over again: the economy comes first. When there's no money, so it's claimed, protecting the environment is a luxury we can't afford. The financial crisis of the past few years has given further encouragement to those holding the view that the environment and society are merely subsets of the economy, rather than the other way around. In recent years, there have been loud attempts in the UK and across Europe to brush aside legislation on habitat protection, to deregulate the planning system and build over green spaces. We are constantly presented with a false choice between the natural environment and the economy.

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FedEx charges up Hong Kong delivery fleet

By **BusinessGreen Staff**

FedEx Express has introduced 10 all-electric commercial vehicles to its Hong Kong delivery operation.



The FedEx Smith Edison™ electric vans make up the company's first fleet of zero-emissions delivery vans in the Asia-Pacific region and should allow couriers to complete a full eight-hour shift before recharging the batteries.

They join two hybrid vehicles already in operation in Hong Kong and more than 650 alternative-energy delivery vehicles in the FedEx global vehicle fleet.

"The deployment of the new zero emission all-electric vehicles demonstrates FedEx commitment to delivering industry-leading innovation while reducing our environmental impact," said David Cunningham, president of FedEx Asia Pacific.

"These electric trucks are not only aimed at improving FedEx fleet efficiency in Asia Pacific, but also promoting the development of all-electric trucks among all vehicle users for a more sustainable future."

FedEx said these vehicles have played a major role in helping the company pass its goal of improving its fleet's fuel efficiency by 20 percent seven years early. This achievement, announced earlier this month, prompted FedEx to set a new 2020 goal of a 30 percent improvement across its global vehicle fleet.

FedEx has also teamed with General Motors in Japan for a year-long trial of a fuel-cell delivery vehicle and announced in September 2012 that it had been working with Nissan to co-test the e-NV200 electric van in Japan and the UK.

[<Source>](#)

Apple Hits Milestone: All Data Centers Powered by 100% Renewables

By *SustainableBusiness.com News*

In a testament to how quickly things can change if the will is there, Apple has suddenly gone from being a laggard on clean energy to a leader.

Apple announced that *all its data centers now run solely on renewable energy* and is on track to power the company as a whole on renewables, from 75% today.

That's a remarkable increase, given that corporate buildings ran on just 35% renewables in 2010. "We won't stop working until we achieve 100% throughout Apple," the company says in its Environmental Report.

Last year, Apple added biogas-powered fuel cells and solar PV at its Cupertino headquarters, while also reducing energy consumption by 30% from the previous year.



The spectacular spaceship design for a new headquarters campus there includes a 5 MW solar system. "I want to leave a signature campus that expresses the values of the company for generations," said Steve Jobs.

Apple has data centers in: Maiden, North Carolina; Austin, Texas; Cork, Ireland; and Munich, Germany, and others are planned for Prineville, Oregon and Newark, California.

In Maiden, North Carolina, Apple has completed the biggest corporate-owned solar PV (25 MW) and fuel cell system (10 MW), which are now supplying 60% of the energy for the \$1 billion LEED-Platinum data center, its largest yet. Apple is purchasing renewable energy from nearby facilities to make up the rest.



The data center has a white, cool roof:

Because of higher sales, Apple's overall carbon footprint increased last year even though its carbon emissions per dollar of revenue has dropped 21.5% from 2008-2012.

Climate Counts gave it a mediocre rating for its lack of attention to measuring and disclosing emissions.

For years, Apple has been on the bottom of Greenpeace's ranking on energy use in the industry, but it moved up for its major commitment to renewables in Maiden, NC. In A Clean Energy Road Map for Apple, Greenpeace congratulates them for big improvements, but still gives them poor grades

when compared with industry peers, such as Dell, Google, Facebook and Akamai.

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Call for 'green badges' and free parking for electric cars

By **Adam Vaughan**, for *guardian.co.uk*

Electric car owners should be allowed to park on yellow and red lines, and park for free, a leading thinktank said on Thursday.



IPPR has suggested a 'green badge' scheme for electric cars.
Photograph: Rex Features

On one of the busiest days of the year for road traffic as people take to their cars for Easter breaks, the Institute for Public Policy Research (IPPR) said that a 'green badge' akin to the blue badge scheme for disabled drivers should be introduced to drive take-up of electric vehicles, seen as a key way to cut carbon emissions. Owners of such a badge would be exempt from charges in car parks and permit areas, and allowed to drive for free through congestion charging zones such as London's and Durham's and across toll roads such as the M6 toll or Severn bridge.

But the idea was immediately attacked by motoring organisation AA, which suggested the plans could in fact increase greenhouse gas emissions rather than reduce them.

An AA spokesman said: "Allowing them [electric car owners] to park on double yellow lines, which are there mainly to ensure good traffic flow, you may create problems. The disturbing irony is that these low emission vehicles could create more congestion, which would increase emissions from other vehicles and be a bit of an own goal."

He warned that if electric cars became much more popular, a "saturation point" could be reached. However, he said that cheaper parking charges for such cars would be a good idea to encourage take-up.

Electric car sales increased rapidly in 2012 in part due to the £5,000 government grant launched in 2011, outstripping growth in the wider car industry. But the number registered under a grant scheme last year – about 2,000 – was just a fraction of the 1.9m conventional cars sold in 2012.

The IPPR also suggests fining owners of combustion engine-powered cars parked in front of electric charging points, and that parking charges should go up for normal cars to offset loss revenue for local authorities giving exemptions to electric cars. It even suggests electric cars should potentially be allowed into bus lanes, an idea which has been trialled in Oslo, Norway.

The proposals are contained in an IPPR report due soon on the UK's automotive industry, whose authors say "the UK is already lagging behind other countries" on electric car ownership because they are perceived to be too expensive and people do not know enough about them. The thinktank also calls for keeping the £5,000 'plug-in car grant', which is due to expire in 2015.

Will Straw, IPPR's associate director, said: "Although early days, Britain is currently behind other European countries and the US in terms of the take up of electric cars and other ultra low emission vehicles. A 'green badge' scheme would help increase demand, giving a much needed boost to the industry and supporting other government policies like the 'plug in' grant.

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Climate change will threaten wine production, study shows

Global warming will make it difficult to raise grapes in traditional wine country, but will shift production to other regions

By **Suzanne Goldenberg**, US environment correspondent *The Guardian*,



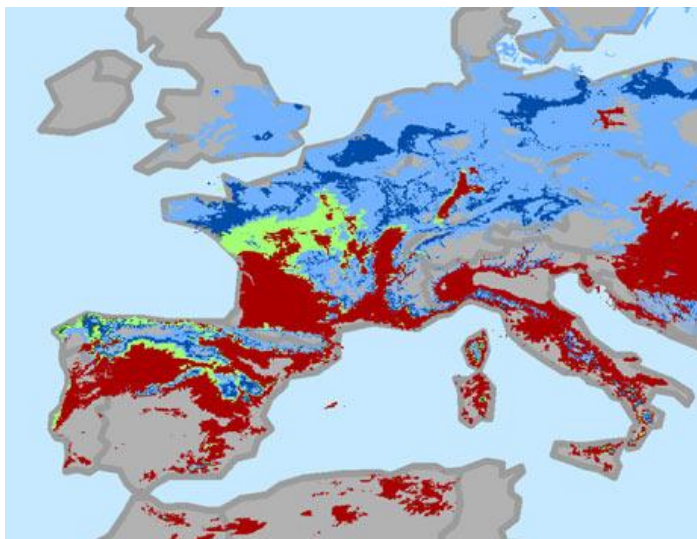
A study has found sharp declines in wine production from Bordeaux, Rhone and Tuscany, as well as California's Napa Valley and Chile by 2050, as a warming climate makes it harder to raise grapes in traditional wine country

Photograph: Cephas Picture Libra

Bid adieu to Bordeaux, but also, quite possibly, a hello to Chateau Yellowstone. Researchers predict a two-thirds fall in production in the world's premier wine regions because of climate change.

The study forecasts sharp declines in wine production from Bordeaux and Rhone regions in France, Tuscany in Italy and Napa Valley in California and Chile by 2050, as a warming climate makes it harder to grow grapes in traditional wine country.

But also anticipate a big push into areas once considered unsuitable. That could mean more grape varieties from northern Europe, including Britain, the US north-west and the hills of central China.



The most drastic decline was expected in Europe. Photograph: Conservation International



"The fact is that climate change will lead to a huge shakeup in the geographic distribution of wine production," said Lee Hannah, a senior scientist at Conservation International and an author of the study.

Researchers expect big changes in regions enjoying the cool winters and hot dry summers that produce good grapes. "It will be harder and harder to grow those varieties that are currently growing in places in Europe," Hannah said. "It doesn't necessarily mean that [they] can't be grown there, but it will require irrigation and special inputs to make it work, and that will make it more and more expensive."

Wine grapes are known to be one of the most finicky of crops, sensitive to subtle shifts in temperature, rain and sunshine. The industry has been forward-looking when it comes to anticipating the effects of climate change.

Wine experts have known for several years that a hotter, drier climate would change growing conditions in many of the most prized wine regions – forcing vineyards to mist grapes on the vine to protect them from the sun, or move sensitive vines to more hospitable terrain.

But the latest findings, published in the journal *Proceedings of the National Academy of Sciences*, still took the researchers by surprise. "We expected to see significant shifts, but we didn't expect to see shifts like these," said Hannah.

The scientists used 17 different climate models to gauge the effects on nine major wine-producing areas. They used two different climate futures for 2050, one assuming a worst-case scenario with a 4.7C (8.5F) warming, the other a 2.5C increase.

Both forecast a radical re-ordering of the wine world. The most drastic decline was expected in Europe, where the scientists found a 85% decrease in production in Bordeaux, Rhone and Tuscany.

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Unilever's sustainability program saves \$395M since 2008

By **BusinessGreen Staff**

Unilever has cut more than 1 million tons of CO2 from its manufacturing and logistics operations since 2008, the company announced this week.

Manufacturing activities provided the bulk of the savings, shedding 838,000 tons of CO2, while improving the efficiency of its logistics operations helped Unilever cut emissions by a further 211,000 tons since its 2008 baseline.

Reducing greenhouse gas emissions is a central target in Unilever's high-profile Sustainable Living Plan, which has introduced a raft of eco-efficiency programs that cut the company's operating costs by \$395 million since 2008 -- a period over which the company also has grown sales by 26 percent from \$54.4 billion to \$67.6 billion.

The new measures include the widespread installation of combined heat and power (CHP) systems that have reduced CO2 from Unilever's European operations by 50,000 tons while cutting energy bills by \$13 million, the deployment of biomass boilers and the creation of regional transport hubs that have served to slash the distances covered by the company's lorries.

John Maguire, Unilever's group manufacturing sustainability director, said tackling emissions posed challenges for the business, but also offered opportunities to make significant savings.

"Eco-efficiency isn't just about reducing the environmental footprint, it also makes good business sense," he said in a statement. "Since 2008 our eco-efficiency programs have avoided more than \$395 million of costs -- almost \$132 million in energy; \$245 million in materials; \$22 million in water; and \$13 million in waste disposal. The benefits are very clear in a world where energy prices are increasing."

The 1 million tons of carbon savings is the latest in a series of milestones the company has announced in the past few months, including confirmation that 133 of its manufacturing sites now send zero non-hazardous waste to landfill and news that it is sustainably sourcing more than a third of its agricultural raw materials.

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Game on: Why Walmart is ranking suppliers on sustainability

By Marc Gunther



This is the first of a three-part series about Walmart's supplier sustainability index.

Since launching its sustainability program in 2006, Walmart has reduced energy consumption in its stores, installed solar panels on its rooftops, curbed emissions from its trucks and recycled millions of tons of its trash. Now that the world's biggest retailer has streamlined its own

operations, it is turning its attention elsewhere — actually, almost everywhere.

Since last fall, Walmart has rolled out what it calls a supplier sustainability index to thousands of suppliers, asking them pointed questions about their operations and prodding them to better understand and manage their own supply chains.

It's Walmart's most ambitious environmental project ever, and if all goes according to plan, it will change the way all kinds of consumer products — clothes, toys, electronics, food and beverages — are made. The typical Walmart stocks 125,000 to 150,000 products (!), and the environmental and social performance of most companies that make them soon will be rated and ranked in Bentonville, Ark.

So Walmart is asking lots of questions of its suppliers. Among them:

How can wheat be grown with less water and fertilizer? How can chemicals of concern be removed from toys? What mining practices were used to extract copper, gold and silver for computers or jewelry? What percentage of your televisions sold last year were Energy Star certified? Do the grapes in a bottle of wine come from a farm with a biodiversity management plan? How much water was needed to produce those polyester pants?

A fiendishly complicated undertaking

If this sounds like a massive and fiendishly complicated undertaking, well, it is. It has been in the works since 2009, when Walmart unveiled The Sustainability Consortium, a nonprofit coalition led by the University of Arkansas and Arizona State University that was set up to provide scientific research to undergird the effort. Since then, a few other retailers (Tesco, Kroger, Ahold, Best Buy) and dozens of consumer products brands (Coca-Cola, Disney, Kellogg's, Mars) have signed on to the consortium.

Working with research produced by the consortium and its scientists, Walmart last year sent questions to suppliers in about 200 product categories. Hundreds more will be surveyed this year. The surveys will cover about half of the products sold in Walmart, which had revenues of \$469 billion last year.

Rankings, from best to worst

Walmart is ranking its suppliers, from best to worst in each category. The rankings will be shared with its buyers, who are known as "merchants"; they decide what gets onto store shelves and play a vital role inside Walmart. The merchants, in turn, will be compensated in part based on the sustainability performance of their category.

Jeff Rice, who as senior director of sustainability at Walmart oversees the index, told me that it has four broad goals:

- To improve the environmental performance of its most popular products.
- To further integrate sustainability into Walmart by giving responsibility to the merchants.
- To drive a productivity loop that reduce costs and ultimately benefits customers.
- To increase customer trust in Walmart and its brands.

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Climate change included in US science teaching guidelines for the first time

By Suzanne Goldenberg, US environment correspondent, *for guardian.co.uk*



The final standards are much more vague about the causes of climate change. Photograph: Kevin Schmidt/Corbis

American school children will for the first time receive extensive lessons on climate change following the adoption on Tuesday of new science education guidelines.

However, the final standards were

substantially weakened from earlier drafts.

The final guidelines cut by about a third the amount of time devoted to a subject seen as critical to future generations.

They are also less explicit than earlier drafts about the human role as a driver for climate change. "It's buried at best," said Mark McCaffrey, policy director for the National Center for Science Education.

The new science teaching standards will introduce climate change as a core aspect of science education for middle and high school students in up to 40 states — in many for the first time.

The guidelines were unveiled at a time when climate change has become a flashpoint for conservative groups, similar to the teaching of evolution in classrooms

The Next Generation Science Standards are not mandatory. But scientists and educational experts in 26 states helped to develop them, and they will for the first time bring a degree of cohesion to the teaching of climate change, said Frank Niepold, co-chair of the climate education group at the US Global Change Research Program, who was involved in the three-year effort.

"In the current situation the state standards are all over the map. It's a hodgepodge," he said. "We are still in a situation where cross the country basically in every state students can still graduate from high school and in some cases go through college without learning the basics."

The mission of the new standards was to prepare a new generation of Americans for college and adulthood, said Matt Krehbeil, a consultant to the process.

"The NGSS aim to prepare students to be better decision makers about scientific and technical issues and to apply science to their daily lives," he said in a statement.

However, the standards appeared considerably shorter than draft versions that had circulated in recent months. Unlike earlier drafts, the final standards do not propose teaching climate change until children are in middle school and high school.

Mario Molina, deputy director at the Alliance for Climate Education, said the experts drafting the guidelines had cut 35% from the sections devoted to climate change, in response to public comments. He did not believe it was political, but was response to a need to compress a great deal of material.

However, he said teachers will now need additional materials and clarifications to teach climate change in detail.

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UK's CO₂ emissions up 4.5% in 2012

By Damian Carrington and Severin Carrell, guardian.co.uk,



Eggborough power station, a coal-fired plant near Selby, North Yorkshire. Photograph: John Giles/PA

The UK's emissions of climate-warming gases surged in 2012 as cheap coal replaced gas in power stations, official data revealed on Thursday.

However, 2012 was a record year for renewable energy in Scotland, which produced enough electricity to power all of its homes. Fergus Ewing, the Scottish energy minister, said his government was now on track to meet its target of generating the equivalent of 50% of Scotland's own electricity needs by 2015 and 100% by 2020.

The UK's carbon dioxide emissions rose by 4.5% from 2011-12, with coal use in power stations jumping by 31%. Coal prices have dropped significantly as the US has exported the coal it no longer needs at home due to the shale gas boom. Another factor is that many of the UK's coal-fired power stations must close soon, due to European pollution regulations, meaning they have been using up their allotted hours. The gas used in power stations dropped by 31%.

But there was a jump in the gas used to heat homes due to a cold last quarter of 2012, which the department for energy and climate change said had been 2.3C colder than Q4 2011. The cold weather in the UK in recent weeks led to gas reserve levels falling to just two days worth, with the price spiking as a result.

Emissions rose in the business sector, despite the UK's flatlining economy. But pollution from transport – a quarter of all emissions – fell by 1.2%. Overall, the UK's emissions remain about 20% lower than in 1990, largely due to gas replacing coal and some industry moving manufacturing abroad. The statistics also showed that UK imports of energy were higher in 2012 than for several decades.

"Emissions are now 26% lower than 1990, meaning we're on track to meet our legally binding targets," said energy and climate change secretary Ed Davey. "But the line on the graph is unlikely to be totally straight, as factors such as the weather and fluctuations in the precise energy mix vary the picture from one year to the next. The UK's continued shift to low carbon will be accelerated by the green deal to help householders overhaul their properties, and by our energy bill's reforms to the electricity market to bring on investment in renewables, new nuclear and CCS."

Nick Molho, head of energy policy at WWF-UK, said: "The government's role on energy is threefold: ensuring energy security, keeping bills down and decarbonising our energy system. These statistics are worrying, because they show that the UK is going the wrong way in all these areas. Increased reliance on fossil fuel imports is the main problem we face and the sad thing is that it's government policies, notably driven by the Treasury, that are causing this."

Kathy Cumming at Greenpeace said: "These figures show the 'greenest government ever' is failing in its bid to shift the UK to a low-carbon economy. The two best things it could do in order to redeem itself are support Tim Yeo's energy bill amendment, which would remove carbon from the electricity sector by 2030, and put an end to coal burning."

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How a civic app is turning city residents into agents of change

By Kristine A. Wong

Would you turn in the girl next door for watering her lawn too much?

That's exactly what has been happening in

Plano,

Texas ever since the city started using a mobile app and digital communications system. Residents can report problems in real-time ranging from environmental health hazards to water leaks, potholes, trash and broken street lights.

When the city's water supply was under siege due to invasive zebra mussels and a simultaneous drought, the City of Plano restricted residents to watering their yards once a week, then once every other week. But with limited staff, there was no way the city could absorb the costs of monitoring and enforcement around the clock. Drive-bys noting whether lawn color was closer to brown than green wouldn't cut it either.

Enter the mobile app and communications system the city purchased from New York City-based startup PublicStuff. Suddenly, residents who downloaded the FixIt Plano app (for free) could stop grumbling to their friends about their neighbor's behavior -- and gleefully send a hall-of-shame photo (which included the date and time the photo was snapped) documenting the excess water consumption directly to Plano City Hall instead. The location of the incident could also be mapped as well, provided the phone's location tracking was on. And once the "report" was in the system, anyone could track its progress through receiving push notifications from city staff.

"When we enabled people to report watering violations, the use of our PublicStuff website and app really skyrocketed," Melissa Peachey, the electronics communication manager for Plano, told GreenBiz.

Residents got so snap-happy, in fact, that in the first 19 days after FixIt Plano set up a category for water violations, 71 reports were filed.

"Being able to tag a picture to it makes it a valuable tool ... The technology puts the reporting capability in their hands and they can make that report as they see [the issue]," Peachey said.

Though the watering restrictions have since been relaxed (residents are now allowed to water twice a week), the FixIt Plano app remains a convenient way for residents and city staff to keep an eye out for violations.

To date, the city has closed nearly 3,900 resident reports on the app since it debuted in 2011. Analyzing the data as a whole, Peachey says, enables Plano to make data-driven decisions for the benefit of citizens and city budgets. One such decision that might be made based on FixIt Plano data is where the city will spray for mosquitoes as a means of controlling potential West Nile Virus carriers. The city will map the locations of dead birds reported by residents and look out for areas of high concentration. A pop-up message informing that a dead bird was spotted, along with instructions on how to dispose of one in a safe manner, will be sent out to residents after the original report was filed, according to Peachey.

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Is there a business case for building green?

By **GLOBE - Net**

It's a question asked often in the building industry: Does green building pay off, and if it does, for whom?

A new comprehensive report released from the World Green Building Council (WorldGBC) may have the answer to that question.

"The Business Case for Green Building: A Review of the Costs and Benefits for Developers, Investors and Occupants" examines whether it's possible to attach a financial value to the cost and benefits of green buildings.



It argues that today, green buildings can be delivered at a price comparable to conventional buildings and investments can be recouped through operational cost savings -- and with the right design features, can create a more productive workplace.

"This report synthesizes credible evidence from around the world on green buildings into one collective resource, and the evidence presented highlights that sustainable buildings provide tangible benefits and make clear business sense," said Jane Henley, CEO of WorldGBC, in a statement.

"From risk mitigation across a building portfolio and city-wide economic benefits, to the improved health and well-being of individual building occupants, the business case for green building will continue to evolve as markets mature. Indeed, we have already seen this momentum grow globally where in more and more places, green is now becoming the status quo."

Key findings include:

- **Design and construction costs:** Research shows that building green does not necessarily need to cost more, particularly when cost strategies, program management and environmental strategies are integrated into the development process right from the start.
- **Asset value:** As investors and occupiers become more knowledgeable about and concerned with the environmental and social impacts of the built environment, buildings with better sustainability credentials will have increased marketability. In fact, studies from around the world demonstrate a pattern of greener buildings being able to more easily attract tenants and to command higher rents and sale prices.
- **Operating costs:** Green buildings have been shown to save money through reduced energy and water use and lower long-term operations and maintenance costs. The energy savings alone typically exceed any cost premiums associated with their design and construction within a reasonable payback period.
- **Workplace productivity and health:** Research shows that the green design attributes of buildings and indoor environments can improve worker

productivity and occupant health and well-being, resulting in bottom line benefits for businesses.

- **Risk mitigation:** Sustainability risk factors significantly can affect the rental income and the future value of real estate assets, in turn affecting their return on investment. Regulatory risks have become increasingly apparent in countries and cities around the world, including mandatory disclosure, building codes and laws banning inefficient buildings.

Illustration of a green house provided by [design 36](#) via Shutterstock.

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Hi-tech faming: growing plants in urban warehouses

By **Oliver Balch**, for [guardian.co.uk](#) on

AeroFarms is not your usual farm set-up. For a start, the US start-up grows its produce in urban warehouses, not rural fields. Among the other basics of agriculture that it turns upside down is a plant's need for sunlight and soil. AeroFarms has done away with both.

The New Jersey-based firm is a pioneer in a technology called "aeroponics". What sounds like a second-rate rock band is actually a cutting-edge line of agricultural science. Nutrients are sprayed in a mist directly onto the roots of the plants, which are held suspended in a cloth-like medium while being exposed to light-emitting diodes (LEDs) instead of sunlight.

"We can grow a plant from 16 days from seed to harvest. And that's without genetically modifying anything. It's just giving the plant what it wants, when it wants it and in the quantity it wants it", enthuses David Rosenberg, a self-confessed "serial entrepreneur" and chief executive of AeroFarms.

Rosenberg is, as you'd expect, an inveterate evangelist for this hi-tech farming system. From a pure production perspective, AeroFarms has so far grown 237 different types of plants under its dry, enclosed environment.

Most fall into the category of leafy greens, such as rocket, kale and spinach.

Aeroponics delivers a fresher and healthier product, Rosenberg



Inculcating the habit of salad-eating will be key if companies like AeroFarms are to target affluent urbanites to a food solution for the world's masses. Photograph: Linda Nyland for the Guardian

insists. The plants are grown, harvested and packaged in temperature-controlled, completely dry conditions. So no damage from sudden heat waves or night frosts. AeroFarms' urban locations also mean shorter distances to market. So again, less time growing brown by the roadside or spoiling in transit.

Rosenberg isn't a big fan of putting expiration dates on food. He'd rather "celebrate" the date of harvest. "We can get it in stores the same day that we harvest it. Instead of in the UK, you're probably buying product from Spain, Portugal or Italy and it could take four days to a week before you get it." Because the growing conditions are dry, there's no need to wash the food either. That means less bruising, less drying (and therefore less energy) and less chance of soggy lettuce ending up on your plate.

The system used by AeroFarms is also free of pesticides, herbicides and fungicides, while the seeds it uses are entirely organic. The agribusiness entrepreneur insists that his company isn't "messing with the genetics" of its crops. The only exception to the firm's chemical-free status is its use of non-organic fertiliser. Rosenberg's reasoning here is carefully considered. Organic fertilisers are essentially "animal poop", which when introduced into a controlled biome, raise the risk of bacterial contamination. Second, organic fertilisers typically need to be dried, transported and then hydrated, all of which carries implications for energy and water use as well as cost.

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U.S. Air Force flies high on energy efficiency

By Sustainable Business News



The U.S. Air Force, the largest single energy consumer in the federal government, released its Energy Strategic Plan, which will continue its successful efforts in cutting energy use.

Last year, the Air Force spent \$9 billion on energy -- 8 percent of its total budget -- and more than 85 percent of that was for jet fuel. That's after saving \$1.5 billion in energy costs in 2012.

To put that in perspective, the federal government consumes 1 percent of all U.S. energy, and most of that goes to the Department of Defense (DoD). The Air Force uses almost half of the energy of the DoD.

"That, of course, means that even moderate improvements in our conservation, in our efficiency, can drive very large dollar savings that can enable us to invest in other vitally needed capabilities," said Dr. Jamie Morin, acting undersecretary of the Air Force, in a statement.

The Air Force has cut aviation fuel consumption 12 percent, exceeding its goal of 10 percent by 2015, and plans to use biofuels for 50 percent of domestic aviation by 2016.

It has also reduced the "energy intensity" of buildings by more than 21 percent since 2003 and is on track to meet its target of cutting that 37.5 percent by 2020.

IBM's software is being used to maximize energy efficiency across its entire infrastructure in 170 locations around the world.

"We need to, and are focusing on the capability we get out of energy, each gallon, each watt of electricity," Morin said in a statement. "We are changing the way we operate."

Last year, renewable energy supplied 5.5 percent of the Air Force's electricity. The goal is to raise that to 25 percent by 2025 -- 1 gigawatt by 2016.

Four priorities are in the new Energy Strategic Plan, the first update since 2010: improve resiliency, reduce demand, assure supply and foster an energy aware culture.

"We are not, and will not, accept the notion that one has to choose between energy efficiency and mission accomplishment," Morin said. "What I think we've demonstrated over the last several years, and will continue to demonstrate, is that those can be complimentary and mutually reinforcing goals."

Last year, the Department of Defense released its Clean Energy Implementation Plan, which will "transform the way" it uses energy. It commits DoD to sourcing 25 percent of its energy from renewables by 2025.

This article reprinted with permission from SustainableBusiness.

Photo of four U.S. Air Force Thunderbirds provided by Don Sullivan via Flickr.

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Solar Crosses Threshold to Net-Positive Energy Production

By SustainableBusiness.com News

Last year, US energy-related carbon emissions were at the lowest levels since 1994, emitting "only" 5.3 billion metric tons of carbon.

This is largely from declining coal use due to cheap natural gas, lower demand for transportation fuels and a mild winter, says the US Energy Information Agency.

Although we don't like to think that solar energy contributes to emissions, it does, and there's good news there too.

To get the solar industry where it is today required huge inputs of electricity, and ironically, most of that comes from coal-fired power plants.

For example, to produce polysilicon - the basic building block of most solar panels - silica rock must be melted at 2,000 degrees Fahrenheit using electricity, commonly from coal-fired power plants.

Does the solar industry consume more dirty electricity than the clean electricity it produces?

Before society can truly benefit from the clean electricity solar produces, they have to pay back all the energy it took to produce the solar panels in the first place.

Stanford researchers believe that tipping point occurred around 2010 and if not, it certainly will by 2015.

"The good news is that the clean electricity from all the installed solar panels has likely just surpassed the energy going into the industry's continued growth," writes Mark Golden of Stanford University.

As the industry has advanced, it's required less and less energy to manufacture and install solar PV, according to research at Stanford's Global Climate & Energy Project.

Much less silicon is used these days to make solar panels and much less of it is wasted in the manufacturing process. Solar cell efficiencies, requiring fewer panels, and thin-film solar leaves out silicon altogether.

At current growth rates, solar could produce 10% of the world's electricity by 2020.

At today's energy payback rate, producing and installing all those PV modules would consume around 9% of global electricity, but that could drop to less than 2% if energy intensity rates keep declining.

But for this to happen, the same attention that's being paid today on reducing financial costs of solar has to be applied to reducing energy inputs to manufacturing.

Accounting for energetic costs and benefits is necessary for any new technology, including energy efficiency upgrades in buildings that have large upfront energetic costs, say Stanford researchers. They are currently applying this analysis to energy storage and wind power.

[<Source>](#)

Kroger takes on EV charging at 300 supermarkets

By Sustainable Business News



Kroger is becoming a leader in electric vehicle (EV) charging, available soon at 300 supermarkets.

EV charging company ECoTality (Nasdaq ECTY) is installing over 200 stations, which will bring Kroger's total to 300 stations.

Kroger is investing \$1.5 million for the charging stations, which will be in key markets in Phoenix, San Diego and Los Angeles. Sixty stations are at Oregon and Washington supermarkets and 14 in Texas.

ECoTality has the second-largest charging network in the U.S. with about 4,000 stations. They are mostly in the west where the majority of electric car sales are being sold. Drivers pay \$1-\$2 an hour to charge their vehicles.

"Retailers across the country are quickly realizing the benefits of installing our Blink chargers. Independent research shows that Blink card holders routinely reward these establishments with more time in their stores and repeat business," says Ravi Brar, CEO of ECoTality.

In March, ECoTality joined with the biggest network, run by Chargepoint (11,000 charging stations), to open up both networks to all EV drivers.

Other retailers that have made big commitments to EV charging at their stores are Walgreens (800 stations), Best Buy and Ikea, all from ECoTality.

ECoTality also manages The EV Project, which is collecting data to be used in building out U.S. infrastructure. It's gathered more than 70 million miles of driver data being used to support deployment of EVs in key markets. The project is a public-private partnership, funded in part by the U.S. Department of Energy under a grant from Recovery Act.

Vehicle-to-Building (V2B) Technology

In related news, what was long thought of as "futuristic" is becoming a reality -- Amory Lovins' concept of electric vehicles as an independent energy source for buildings. Energy stored in EVs is used to power homes and buildings.

In 2008, Lovins said, "We're developing the 'Smart Garage' -- an intelligent interface between electric traction vehicles, buildings and electric grid. Plug-in hybrids' distributed battery storage could become important, even dominant, elements of electrical supply, initially for peak loads and later for wider needs -- realizing the 'vehicle-to-grid' concept I invented in 1991."

The technology is gaining attention as plug-in vehicle sales climb and building managers and homeowners seek innovative ways to manage energy consumption.

About 200,000 plug-ins equipped with V2B technology will be sold by 2012-2020, says Navigant Research.

"V2B technology can benefit both vehicle and building owners, by offsetting some of the cost of plug-ins, by lowering the energy costs of the building and by providing reliable emergency backup services," says John Gartner, research director of Navigant Research. "Numerous pilot projects around the world are developing and testing V2B technologies, most of them as part of larger microgrid and smart grid projects."

Automotive and building companies in Japan, for example, have responded to the widespread loss of grid power after the 2011 tsunami by developing V2B programs, mostly focusing on residential buildings.

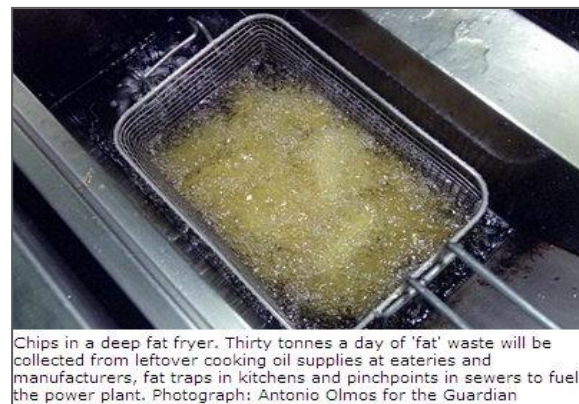
Photo of electric car in car sharing station provided by Viappy/Shutterstock.

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London's cooking waste to fuel power station

By James Meikle, for guardian.co.uk

Cooking waste from thousands of London restaurants and food companies is to help run what is claimed to be the world's biggest fat-fuelled power station.



Chips in a deep fat fryer. Thirty tonnes a day of 'fat' waste will be collected from leftover cooking oil supplies at eateries and manufacturers, fat traps in kitchens and pinchpoints in sewers to fuel the power plant. Photograph: Antonio Olmos for the Guardian

The energy generated from the grease, oil and fat that clogs the capital's sewers will also be channelled to help run a major sewage works and a desalination plant, as well as supplying the National Grid, under plans announced by Thames Water and utility company 20C.

The prospect of easing the financial and logistical problems of pouring £1m a month into clearing the drains of 40,000 fat-caused blockages a year is being hailed by the companies as a "win-win" project. Thirty tonnes a day of waste will be collected from leftover cooking oil supplies at eateries and manufacturers, fat traps in kitchens and pinchpoints in the sewers -- enough to provide more than half the fuel the power plant will need to run. The rest of its fuel will come from waste vegetable oil and tallow (animal fats).

The deal, worth more than £200m over 20 years, has made possible the building of the £70m plant at Beckton, east London, which is financed by a consortium led by iCON Infrastructure. It is due to be operational in early 2015. No virgin oils from field or plantation crops will be used to power it, says 20C.

The plant will produce 130 Gigawatt hours (GWh) a year of renewable electricity -- enough to run just under 40,000 average-sized homes, say the planners.

Thames Water has agreed to buy 75GWh of this output to run Beckton sewage works, which serves 3.5 million people, and the nearby desalination plant, which is used in times of drought or other emergencies. Piers Clark, commercial director for Thames Water, said: "This project is a win-win: renewable power, hedged from the price fluctuations of the non-renewable mainstream power markets, and helping tackle the ongoing operational problem of 'fatbergs' in sewers."

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Obama proposes new rules to clean up gas and reduce car emissions

By **Suzanne Goldenberg**, US environment correspondent, *for guardian.co.uk*



About a third of Americans live in neighbourhoods where air pollution is higher than government limits. Photograph: Steven Senne/AP

The Obama administration announced new gasoline rules on Friday that are intended to clean up smog in car exhaust.

The proposed new standards for gasoline sulfur would drastically reduce smog, soot, and dangerous

emissions from car exhaust, the Environmental Protection Agency said.

It said the new rules would also make it easier for the auto industry to meet tougher standards for tailpipe emissions from new cars.

The new rules would also help the US meet global standards. Refineries in Europe, Japan and California are already operating on or moving towards the new lower sulfur standards.

"The Obama administration has taken a series of steps to reinvigorate the auto industry and ensure that the cars of tomorrow are cleaner, more efficient and saving drivers money at the pump," the EPA's acting administrator, Bob Perciasepe, said.

The proposed new standards would require refiners to reduce gasoline sulfur levels by more than 60%, down to 10 parts per million by 2017. That would bring new cars into line with standards adopted by California's clean cars programme, the EPA said.

The agency also said the new standards would have public health benefits. About a third of Americans live in neighbourhoods where air pollution is higher than government limits.

"Today's proposed standards – which will save thousands of lives and protect the most vulnerable – are the next step in our work to protect public health and will provide the automotive industry with the certainty they need to offer the same car models in all 50 states," Perciasepe said.

The new gasoline rules were meant to work in tandem with the EPA's other efforts to reduce greenhouse gas emissions from cars and trucks, starting in 2017.

The new rules on gasoline sulfur had initially been expected in 2011, but were held over until after the presidential election to avoid any potential damage to Barack Obama's re-election prospects.

Campaign groups were briefed about the announcement in advance. There was virtually uniform support for the move.

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Starbucks introduces reusable cups

By **Rebecca Smithers**, consumer affairs correspondent, *for guardian.co.uk*

The coffee chain Starbucks is introducing a reusable cup which UK customers can keep, in a move designed to encourage them to be more environmentally conscious while saving money.

The reusable cup is based on the design of the brand's distinctive white and green paper cups and will cost £1.

Customers who use their reusable cup will receive a 25p discount off their Starbucks drink every time they use it. The cup is made of a high-quality material which is lighter than the Starbucks ceramic tumblers, which will still be available.

The reusable cups will be available in selected stores nationwide from today but will be rolled out gradually elsewhere.

Reusable. Recyclable. Re-enjoyable.

Coming soon to your local store. twitter.com/StarbucksUK/st...

— Starbucks UK (@StarbucksUK) April 19, 2013

The US coffee giant has pledged to press ahead with a major expansion plan in the UK – aiming to open 300 new stores and create 5,000 extra jobs by 2016 – amid ongoing controversy over its failure to pay UK corporation tax over the past three years.

Ian Cranna, vice-president of UK marketing for Starbucks, said: "We know that our customers really care about saving money and doing their bit for the environment; between 2008 and 2012 the number of people using a Starbucks reusable tumbler increased by 235% and our new reusable cup is a low-cost, high-impact way to help make a difference on reducing waste."

Globally the chain is aiming for 5% of drinks made in its stores to be served in reusable cups by 2015 and the company says its move in the UK is a key step towards reaching this goal.

[<Source>](#)

Volvo puts trucks on autopilot

By **Sustainable Business News**

Volvo has developed an innovative way to cut fuel use in trucks, basically by running them on autopilot.

The Swedish automotive company's "I-See" software can reduce fuel consumption for long-distance transport by about 5 percent.

When a truck equipped with I-See first drives on a hilly road, the software stores topographic information for the next trip, and a wireless dispatch is conveyed to a central server.

Then, when a different truck equipped with I-See is about to drive the same stretch, the system automatically gets the information from the server and ensures the truck optimizes how it drives over the same hills.

"I-See uses the vehicle's kinetic energy to accelerate at the right time prior to the ascent to reduce the number of downshifts, while disengaging the vehicle just before reaching the brow of the hill and utilizes the energy perfectly for braking down the next hill," explains Anders Eriksson, who heads the development group, in a statement.

Volvo Trucks also has reduced the energy intensity of North America operations by 30 percent.

In related news, General Motors announced it will invest \$332 million in more fuel-efficient engines and transmissions.

Spread across four manufacturing plants, the investment will be put towards making a new Ecotec engine, an eight-speed automatic transmission system and a V6 engine more efficient and better performing.

Last month, GM CEO Dan Akerson said vehicles built through 2017 would use 12 billion gallons less fuel over their lifecycles through greater efficiency, such as lightweighting vehicles.

[<Source>](#)

One in five French bottled waters 'contain drugs or pesticides'

By **Kim Willsher** in Paris, for *The Guardian*

They are sold as being cleaner, healthier and purer than the water that spouts from the average French tap.

Now, however, an investigation has discovered traces of pesticides and prescription drugs – including a medicine used to treat breast cancer – in almost one in five brands of bottled water on the shelves of France's supermarkets.

While scientists say the contamination is minuscule and the water remains safe, consumer groups are warning of a "potential cocktail effect" for drinkers, and say the findings raise serious environmental concerns.

The study was carried out by the consumer magazine 60 Millions de Consommateurs and the non-governmental organisation specialising in global water issues, Fondation France Libertés.

Researchers analysed 47 brands of bottled water widely available in France,



Traces of pesticides and prescription drugs have been found in some brands of bottled water in France. Photograph: Thomas Coex / AFP / Getty Images

and discovered that 10 contained "residues from drugs or pesticides".

"The biggest surprise was the presence of tamoxifen, a synthetic hormone used in the treatment of breast cancer," the

magazine said. It reported finding traces of the powerful prescription drug in the popular brands Mont Roucous, St-Yorre, Salvetat, Saint Amand and the Carrefour discount label Céline Cristaline.

It added the quantity was minute but "enough for us to question the purity of the original produce imposed by regulations covering mineral water".

Traces of the prescription drugs buflomedil and naftidrofuryl, known as vasodilators and used to dilate arteries in those with high blood pressure, were found in Hepar and Saint Amand mineral waters.

Molecules from pesticides banned in 2001 were found in bottles of Vittel, Volvic, Cora and Cristaline.

After the mineral water companies contested the results, the magazine commissioned a second round of tests, which confirmed the first results.

"It's true the micro-pollutants found were present in very small quantities, but the range of them raises concerns about a potential cocktail effect," 60 Millions de Consommateurs reported.

"This is serious enough to call for a much bigger study," it added, calling for tighter controls on bottled waters to identify "new pollutants".

Thomas Laurenceau, the magazine's editor, said: "What we found is not that one brand is more risky than another; there are no good and bad. The problem is across the whole range.

"The bottlers are extremely careful but it is worrying to see things there that shouldn't be there, even if they are in minuscule quantities."

He added: "In the short term, there is absolutely no problem of quality and these waters are perfectly drinkable. We are talking about tiny traces, millionths of a micron, it's really minuscule".

[<ReadMore>](#)

Can Cows Stop Climate Change?

By *SustainableBusiness.com News*

These days cows have gotten bad press because of the methane they belch and the huge amounts of water and food it takes to sustain them, in factory farms that is.

But cows can play a crucial positive role if they are out on the range.

We've followed Allan Savory's work for decades as he's battled a key misconception: cattle grazing doesn't cause desertification - in fact, we must dramatically increase their numbers in order to reverse it.

In 2010, Savory won the Buckminster Fuller Challenge for his Zimbabwe Grasslands Project, Operation Hope.

His strategy has transformed parched, degraded Zimbabwe grasslands and savannahs into lush pastures with ponds and flowing streams, even during periods of drought.

Savory's successful approach to land management contradicts accepted practice, which says land must rest from animal grazing. When animals are removed, he's found the land becomes more degraded, not less.

His process re-establishes the symbiotic balance between plant growth and the behavior of herding animals, returning unusable desert back into thriving grasslands - restoring biodiversity, bringing water sources back to life, combating global climate change, and increasing crop yields to ensure food security for people. The approach is currently producing results on over 30 million acres worldwide.



Images Republished Courtesy of the Savory Institute

Photo of Exact Location - Zimbabwe After 2 Growing Seasons
Left: Late 2006 - Low numbers of mismanaged livestock
Right: Early 2009 - Properly managed using Holistic Management
(400% increase in livestock numbers)

Only healthy soil sequesters carbon. Damaged soil leads to desertification and the release of greenhouse gas emissions. A staggering two-thirds of earth's land mass is desertifying, he says. This is easily seen with satellite images.

"By some estimates, grazing large herds of livestock on half the world's barren or semi-barren grasslands could take enough carbon from the atmosphere to bring us back to preindustrial levels. Nothing offers more hope," says Savory.

Even grasslands that get plenty of rain are desertifying. "If you inspect the ground in tall grasslands, it is bare and encrusted with algae, which leads to runoff and evaporation."

Areas of US national parks are now desertifying as badly as areas in Africa, and studies have shown that whenever cattle are removed from an area to protect it from desertification, the *opposite* results - it gets worse.

Not only have we failed to understand the causes of desertification, we've failed to understand how it affects our global climate, says Savory. He explains that barren earth is much cooler at dawn and much hotter at midday. When land is left barren, it changes the microclimate on that swath of land.

[<ReadMore>](#)

Whole Foods Goes Ultra-Local Through Rooftop Greenhouse

By *SustainableBusiness.com News*

Whole Foods Market is taking an important step in providing fresh, locally grown produce to customers.

A new store under construction in Gowanus, Brooklyn, will host a 20,000 square foot greenhouse on the roof - the first commercial-scale greenhouse attached to a supermarket.

Whole Foods isn't growing the food, it will simply buy it from local organic grower, Gotham Greens, which is building (and paying for) the greenhouse. Gotham will grow organic produce year-round and sell it to all nine Whole Foods stores in New York City.

This is what the greenhouse will look like:



"Gotham Greens has been a valued local supplier of high quality, flavorful and fresh produce to Whole Foods Market since early 2011, making this greenhouse project a natural and extremely exciting next step in our relationship," says Christina Minardi, Northeast Regional President of Whole Foods. "We're particularly excited to partner with a local organization with roots right here in Brooklyn and a mission in line with our own, in that we both



care deeply about providing local, fresh and sustainably produced food."

The rooftop farm is being outfitted with irrigation systems that use up to 20 times less water and enhanced glazing materials and electrical equipment that cut energy demand.

The project eliminates long distance food transport and its associated emissions, while ensuring product freshness, quality and nutrition for thousands of customers in the area.

Whole Foods also plans to offer educational opportunities for area students and local schools to learn about greenhouses, farming and various environmental initiatives.

Gotham Greens is one of a handful of urban farms that have cropped up in Brooklyn during the past couple of years. Unlike its peers, which have open air farms on roofs and vacant lots, Gotham grows food hydroponically in a rooftop greenhouse that runs on solar energy.

Gotham produces 80 tons of herbs and vegetables, which it sells to local supermarkets, restaurants and institutional customers. Using a greenhouse allows them to grow 7-8 times more food than traditional soil farming - about the same as a six acre farm.

"They grow, cut, and deliver their product in the same day, which is an amazing ability given their consistent quality," Michael Anthony, Executive Chef at Gramercy Tavern told BloombergBusinessweek. Gotham delivers within a 15-mile radius and plans to open two more greenhouses, another in Brooklyn and one in Queens.

It was able to keep supplying vegetables even right after Hurricane Sandy.

[<Source>](#)

Virgin Airlines Leads On Sustainably Sourced Food

By *SustainableBusiness.com News*

In a first for the airline industry, Virgin Atlantic Airways is analyzing its food supply chain to make sure that only sustainably-sourced food is served on its flights.

By the end of this year, UK's Sustainable Restaurant Association will have rated Virgin's global catering supply chain. After that, the group will work with Virgin to improve on areas of weakness.

Suppliers will be judged on where they source food (sustainable seafood, meat and vegetables) and how efficient they are in water and energy use.



Virgin wants its airline passengers to be confident of the provenance of the food they are eating and how it was produced, just as they would in any restaurant, says the Sustainable Restaurant Association.

"We continue to be an industry leading airline on sustainability, driving solutions for the rest of aviation to share. Our adventurous spirit means we're not afraid to push boundaries in following our sustainability agenda. Value for money and quality of product are of course hugely important factors, but our passengers now rightly demand that we look beyond that, and ensure we are making the most sustainable choices. The SRA ratings will allow us to understand how we and our global suppliers are performing on this front, and how to work closely together to drive improvements," says Reuben Arnold, Director of Customer Experience at Virgin Atlantic.

The Sustainable Restaurant Association works with over 1,000 restaurants in the UK and Eurostar, the biggest train operator in Europe.

Will they also advise Virgin on increasing the amount of recycling related to food operations on their planes? Although Virgin leads the airline industry on recycling, it could do much better.

Last year, Richard Branson made the bold announcement that Virgin Atlantic Airways would run on fuel from recycled industrial gases by 2014.

[<Source>](#)

Simpa Innovates With Pay-As-You-Go Solar in India

By *SustainableBusiness.com News*

India-based Simpa Networks is using a pay-as-you-go method to make solar energy affordable to people living in rural areas in that country. After making a small down payment for a high quality solar home system, customers pre-pay based on actual energy use through their cell phone. Each small payment contributes to the final purchase price.

The Asian Development Bank announced it would make a \$2 million equity investment in Simpa, which will extend the service to more than 60,000 households by 2015.

"In our launch market, India, as in most developing country markets, the low income consumer can actually afford a small solar home system if only they could pay for such a system over time, in small, irregular, and user-defined increments. That is, if the pricing model matched the pricing model they are already using for kerosene, candles, batteries, and phone charging," explains Simpa.

"We transform an energy expenditure into an asset purchase. We offer customers the opportunity for ownership of their energy resource and break their dependence on expensive, unhealthy, and inefficient sources of light and electricity," says Simpa.

To do this, Simpa developed Progressive Purchase™ technology that can turn their solar system on or off as people make payments. The technology combines product-embedded hardware and cloud-based software.



Every time a customer makes a payment, the solar system is "unlocked" for a paid amount of energy consumption in kilowatt hours. When this prepaid consumption is exhausted, the solar home system is temporarily disabled until another payment is made. When the solar system is fully paid off, the product is permanently unlocked.

"The success of this entrepreneurial venture could lead to increased venture capital funding for inclusive business models which

deliver goods and services to those at the base of the economic pyramid," says Aniruddha Patil, Investment Specialist with ADB's Private Sector Operations Department.

People in many emerging markets earn under \$10 a day and often spend 30% of their income on inefficient, dirty and expensive kerosene for lighting. That adds up to \$38 billion a year for lighting and \$10 billion for cell phone charging.

"There is likely a \$100 billion global opportunity for small scale distributed energy solutions, with no clear market leader," says Simpa.

A solar system can meet these basic needs for \$200-\$400 retail, but people can't afford to pay the full cost upfront.

These systems typically include a solar panel, battery, charge controller, at least 3-4 lighting points, a mobile phone charging port and power for charging or powering small DC devices.

Over the 10 year useful life of a quality solar system, households end up spending \$1500-\$2000 on kerosene, candles, batteries and phone charging, paying much more than they need to.

Other interesting approaches for getting solar to these communities are solar loans in Bangladesh, Solar in a Suitcase and a gravity-fueled light.

[<Source>](#)

Rajasthan turns to technology to chart path through food security maize

By **Mark Tran** in Dungarpur, for *guardian.co.uk*

Jeevraj Roat is delighted at the results from hybrid maize supplied by Monsanto, the US biotech company. A farmer from the village of Virat, in the severely drought-affected region of southern Rajasthan, Roat saw his crop almost double to 250kg after sowing 5kg of hybrid seeds, given to him for free by Monsanto.

Roat, looking much older than his 35 years, said he realised the Monsanto seeds were expensive and that only two or three people in the village could afford to buy them on the market. He said he was also unhappy



Making corn ... Hybrid maize has helped Indian farmers in drought-affected southern Rajasthan to increase yields. Photograph: Mark Tran for the Guardian

at having to use diammonium phosphate (DAP), a chemical fertiliser.

"I know it's dangerous but we don't have enough cow dung or other organic fertiliser," he said amid the lengthening cacti shadows as the sun set over the hills.

Roat is from an area populated by marginalised Bhil tribal people. In its efforts to improve food security for some 200,000 farmers living below the poverty line, state authorities are encouraging them to plant hybrid maize and Bt cotton, a variety also supplied by Monsanto that requires less pesticide.

Rajasthan's agricultural officials say traditional seeds cannot cope with higher temperatures, hence the need for hybrid varieties that need less time to grow and increase yield. The claims are strongly contested by civil society groups, who also question the long-term viability of hybrid maize.

Rajasthan's director of agriculture, GS Katara, is an ardent advocate of the new varieties, however.

"Bt cotton has had a big impact, it has been a success and given good results," he said in his office before rushing off for a round of appointments. "It has helped stopped the migration of men who go to work on cotton fields in Gujarat [next door] leaving their families behind."

Monsanto India is quick to sing the praises of its Bt cotton: "Indian farmers' choice to plant hybrid cotton seeds with insect-protection Bt cotton technologies on over 90% of cotton acres, and increased cotton production, is testament to the value created by better seeds, technologies and farming practices, when compared with the alternative of non-Bt cotton varietal seeds and insecticide spraying."

Besides their opposition to Bt cotton, civil society groups are particularly concerned about Rajasthan's "golden rays" project, a public-private partnership with Monsanto, to roll out hybrid maize. Rajasthan has the largest maize cultivation area in India (about 16%). The maize area in Rajasthan is about 1.10 million hectares, with the productivity being around 18.60 quintals (1 quintal is equivalent to 100kg) per hectare. In a state that has been a battleground for genetically modified crops, Dungarpur district is a region with large areas of maize cultivation.

A report last year by the Alliance for Sustainable and Holistic Agriculture (Asha), an umbrella group of 400 NGOs, identified several problems with hybrid maize. The most obvious is whether farmers can afford seeds for hybrid maize once they have to buy it.

"Records from elsewhere do show that corporations increase prices of seed quite exponentially year by year, apart from the fact that control over the most critical input in agriculture will go away from the hands of our farmers," said the report.

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Tata's management training director: sustainability a business necessity

Tata's new management education director and founder of Conscious Capitalism believes that when CSR is unlinked to the way money is made, there's a problem

By **Tim Smedley**, *Guardian Professional*,

When Dr Shubro Sen took up the post in July last year as director of the Tata Management Training Centre (TMTC), the Indian conglomerate could have been forgiven for thinking it was getting a CSR leader. Charged with educating Tata managers at TMTC, where each generation of leaders at the 150-year-old company – which now spans over 100 companies in more than 80 countries – has been trained, Sen had clear CSR credentials as the founder of the Conscious Capitalism movement.



Tata's Dr Shubro Sen warns: "We operate in a digital fishbowl. So you are going to get found out, you can't fake it anymore..." Photograph: Katrina Brown/Alamy

The trouble is, he doesn't much like CSR.

"I have a problem with CSR as it has been historically practised", says Sen, who in accepting the job returned to his native India after 32 years in the US, advising some of the world's biggest companies. "In Conscious Capitalism we have been quite critical of CSR departments – because CSR is often seen as happening ex post facto, with nothing to do with the business model of the company. You can be a robber baron of the first order but then you donate a ward to a children's hospital... Whenever it is unlinked to the way you make money, then I think there's a problem."

The Tata group of companies is a complex web. Its subsidiaries cover every sector "from salt to supercomputers", as Sen puts it. On the surface it appears family run – Ratan Tata, the fourth generation of Tata Chairmen, retired only last year. However, says Sen, "The Tata group is majority owned by trusts and charities. The Tata family itself are very small owners of the conglomerate, they currently own around 3%."

It was the liberalisation of India in the 1990s that saw Tata become truly multinational. "Its revenues were around \$6bn in 1993; today we're in excess of \$100bn", says Sen. Seemingly arriving on the UK stage when taking over Corus (formerly British Steel), Jaguar and Land Rover in 2006 and 2008, it has in fact had a central London office for over 100 years.

Despite being known for a hands-off approach to ownership, there is a distinct Tata approach to business that is reflected in TMTC. The leadership centre housed in a former colonial mansion in Pune sees 10,000 Tata managers and leaders pass through its doors each year. Founded by JRD Tata in 1959, it purports to be the world's second oldest corporate university (after General Electric's Crotenville). It's built upon the already forward-thinking nature of the

business, says Sen: "In 1918 they instituted the 8-hour work day at a time when slave labour still went on; they introduced a provident fund, paid medical leave, maternity leave. Even in the US these things didn't become common until the '30s or '40s."

Sen believes that the Tata way of doing business chimes with his own theories of 'conscious capitalism'. "Fundamentally capitalism is, at least in concept, very noble", argues Sen. "It is based on voluntary exchange for mutual benefit. It's just that its practice has been distorted at various points and various times, through crony capitalism... giving capitalism a bad name. Part of the reason we pre-fixed 'conscious' to 'capitalism' is that we want to in a sense take it back."

Shareholder primacy, he says, has created a damaging cycle of "short-termism that comes with satisfying shareholders... The essence of conscious capitalism is that you serve all stakeholders simultaneously."

Sustainability, rather than CSR, better encapsulates this concept says Sen: "If the purpose of your business is right and you are able to sustain yourself over time, then you have been selected in a Darwinian sense. But sustainability and the deep adherence to sustainability principles actually open up a spectrum of business opportunities that are unmatched today. One of the reasons why I am pushing it very heavily in all our leadership courses is challenging our leaders to find that opportunity. For example, water purification is an opportunity – people deserve to drink clean water. Can we innovate to create a low-cost solution that is readily available for all? Tata Chemicals has done that... not just sustainability for upper income groups, but as an opportunity to serve those who really have no alternative. That is the kind of sustainability that attracts me."

Sustainability is no longer just a moral imperative but a business necessity, says Sen. The 'robber barons' have nowhere left to hide. "We operate in a digital fishbowl. So you are going to get found out, you can't fake it any more.... That's probably the most salutary tonic that the world of business has received in recent times, and that's the blessing of the internet, the incredible democratisation of information. I guarantee that we're going to see much more societally-aligned corporate behaviour in the coming years, because that's going to be the only way you'll survive."

He hopes to convey this message at TMTC not only via sustainability-specific courses but as a theme running through all its 250 programmes as well as induction sessions for newly acquired businesses. However "we are not there yet", says Sen, "this is a work in progress". Nor is it intended as a centralised doctrine. "Every company has been tasked to think through their own sustainability challenge. We want them to really create their own solutions... it needs to be heart and mind, not just clever solutions if they are not deeply felt. Ultimately I think sustainability will triumph and become embedded when the person at the lowest level of the organisation understands their purpose in serving society."

It may seem old-fashioned, then, to be aiming to instil this via expensive on-campus management education. If the message needs to reach the workers first and foremost, why not start with them? "The leader is always important", responds Sen. "I believe that leaders have an ever-increasing role in organisations as complexity has increased. Having said that, the nature and the role of the leader has also evolved. The leader as a listener, as a coach and empowerer of people. In that sense yes the leader is very important, if only to galvanise the rest of the organisation." He adds, thoughtfully, "The conscious leader is one who tries to lead with love not fear." Whether such love can spread throughout Tata's myriad subsidiaries, however, remains to be seen.

[<Source>](#)

Transdisciplinary Research on Sustainability in Europe: generic issues

May 23-24, 2013

Prague, Czech Republic

CONVERGE & Charles University Environment Center Prague is organizing a Research Conference at Charles University, Prague during May 23rd and Friday 24th, 2013. One and a half day workshop of approximately 50 invited experts from across the EU area who are working in Transdisciplinary Research for Sustainability (TDRS). This event is for professionals from the European Research Area (ERA) organisations and policy areas and for those who are running (or have run) transdisciplinary research projects on sustainability. This event will be hosted by the CONVERGE EU FP7 research project and Charles University Environment Center together with the COPERNICUS Alliance. The conference language is English.

This gathering provides an opportunity to share and reflect on issues of TDRS including methodology and management, together with an opportunity to contribute to recommendations to the ERA for the further development of research capacity on TDRS. This event aims at informing the EU's research agendas and meta-agendas about evaluation, conduct and processes of TDRS with information, perspectives and analyses from practitioners.

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World Congress

on

"Business, Finance, Marketing and Industrial Management for Sustainable Development".

BFMIMSD – 2013

May 25th & 26th, 2013

New Delhi

The World Congress on "Business, Finance, Marketing and Industrial Management for Sustainable Development" (BFMIMSD - 2013) is scheduled to take place on 25th & 26th May 2013. The event is being organized by a NGO "Krishi Sanskriti" at Jawaharlal Nehru University, New Delhi.

BFMIMSD - 2013 is a premier forum for the presentation of new advances and research results in the fields of theoretical, experimental and applied Business, Finance, Marketing & Industrial Management. The conference will bring together leading researchers, Entrepreneurs and Academicians in the domain of interest from around the world. Topics of interest for submission include various subthemes, but are not limited to the conference aims at providing an opportunity for exchange of ideas and dissemination of knowledge among Scholars for Sustainable Development.

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International Interdisciplinary Research Conference

on

Economics, Commerce, Management & Technology

June 1st, 2013

Nasik (Maharashtra)

International Interdisciplinary Research Conference on Economics, Commerce, Management & Technology aims to bring together researchers, scientists, engineers and academicians with a view to provide the platform to present their views and ideas. This conference shall be ideal forum for exchange, interaction, share views, dialogues amongst faculties from all fraternities. The conference shall take place on June 1st, 2013 at Hotel Royal Heritage, Nasik. The conference is being organized by Indo Global Chamber of Commerce, Industries and Agriculture in Association with - PSD Shastri Educational Foundation's, ASMA Institute of Management, Pune. The themes also include Kyoto Protocol, Environmental Issues, Climate Change, Bio Diversity and Global Warming

[<ReadMore>](#)

2013 IUCN Academy of Environmental Law Annual Colloquium

June 24 – 28, 2013

Hamilton, New Zealand

2013 IUCN Academy of Environmental Law Annual Colloquium is taking place between June 24 and 28. The event is being organized by IUCN Academy of Environmental Law with support of various well known associations and universities which include Malcolm Pacific, National Environmental Law Association of Australia, New Zealand Law Foundation and University of Waikato. Organizers expect that members of the Academy will contribute to a critique of environmental injustice and offer 'sacred footsteps' into new frontiers of environmental justice. Organizers hope for fresh jurisprudential, doctrinal, institutional and tactical insights, and practical mechanisms for the delivery of resilience to vulnerable communities, animals and ecosystems. The topics include very vital and relevant subjects like: Environmental justice, sustainable management and sustainable ethics, Wastes and hazardous substances, Climate change and displacement.

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Deccan Chronicle, Hyderabad dated March 26, 2013

Green activists up in arms against garbage burning

M. ROUSHAN ALI | DC
HYDERABAD, MARCH 25

The 'clean and green' image of the city has gone for a toss. While uncleared heaps of garbage on the streets have become a common sight, the trash is being burnt in almost every lane and by-lane, posing major health hazards to the citizens.

Doctors and environmentalists warn that garbage burning increases the risk of lung cancer and breathing disorders. Green activists are up in arms against burning of garbage.

Popular environmentalist K. Purushotham Reddy, said the officials of Greater Hyderabad Municipal Corporation should be booked under Section 302 of the IPC for allowing the burning of garbage.

Along with GHMC, officials of Andhra Pradesh Pollution Control Board and Revenue should also be dragged to the court, for not taking action to prevent garbage burning, which is a 'nuisance and detrimental to the public health' under Section 133 CrPC. "The officials do not have any commitment towards public health," he said.

The founder of I Go Green Foundation, Jayaprakash Nambaru, said the GHMC sweepers and workers burn the garbage both in and outside the bins.

"By allowing garbage to be burnt, the GHMC is let-



Burning of garbage poses a major health threat and also affects the environment.

ting lose the devil in the air. It can kill anyone with over 300 varieties of carcinogens coming out of dioxin in the burnt garbage. Right from the common man to the rich, they can buy potable water, but not air. The citizens are exposed to the risk of cancer because of burning of garbage and they are not even aware of it," he said and added that as per the Municipal Solid Waste Management rules even the dry leaves should not be burnt.

It may be mentioned that the total annual budget of the health, sanitation and transport wing of GHMC is nearly ₹400 crores, per year, including the salaries and wages. Social activist, Venu Gopal, said if gated communities outside GHMC limits are able to manage

their garbage, in few hundreds of rupees, GHMC can do wonders with such a huge budget. "The city is turning dirty by the day and the tax payers' money is being misused. An enquiry should be ordered into the spending on engineering, sanitation, health and transport wings in GHMC," he said and added that the ambition of mayor, Majid Hussain, is that Hyderabad wins back its clean and green city image which has remained on paper. The GHMC additional commissioner (health and sanitation), L. Vandan Kumar, said stringent action will be taken against those responsible for garbage burning. Special teams will be constituted to check garbage burning and take action, he added.

The Times of India, Delhi dated March 26, 2013

S Asia pollution tied to Tibet glacier melt

Beijing: About 90% of glaciers in Tibet are shrinking because of black carbon pollution "transferred from South Asia" to the ecologically fragile Tibetan plateau, a Chinese scientist has warned. Known as the Roof of the World, the Tibetan Plateau concerns the interests of the surrounding countries and regions, covers more than five million square kilometres and has an average altitude of more than 4,000 metres.

Like Antarctica and the Arctic, the Third Pole is drawing increased attention from the international academic community, but the results of former international studies in this area are inconsistent, Yao Tandong, director of the Chinese Academy of Sciences' Institute of Tibetan Plateau Research said.

The area has the largest number of glaciers outside the polar region and exerts a direct influence on the social and economic development of some of the most densely



THE HEAT IS ON

populated regions on earth, including China and India. The glaciers are at the headwaters of many prominent Asian rivers.

Influenced by global warming, its alpine glaciers have seen drastic changes in recent years, such as thinning and shrinkage, which pose potential geological hazards to people both on and around the plateau. ¶¶

The Times of India, Delhi dated March 26, 2013

HOPE FLOATS AS WORK ON YAMUNA PICKS UP

Richi Verma | TNN

The Yamuna might soon get a new lease of life, with Delhi Development Authority's ambitious riverfront development project being put on the fast track. The project will include creation of recreational spaces, revival of the river's flora and fauna and the development of green spaces.

While work on two zones is in full swing, plans for the third zone will soon be implemented. The three zones will include a core biodiversity zone with a flourishing eco-system, a green area, and a recreational zone. Bamboo structures will be put up in the recreational zone, but permanent construction will not be allowed.

The Yamuna development plan is one of lieutenant governor Tejendra Khanna's key projects, and is being monitored regularly. The LG did not allow any permanent construction on the entire riverbed, which falls in Zone O of the master plan. The project was launched in 2009, after which the conceptual structural plan was approved by DDA and other agencies.

Officials say the bio-community once found on the Yamuna riverbed has depleted considerably due to pollution, necessitating the development of a biodiversity zone. The conceptual plan outlines the development of both the banks of the river, spanning 42km of land from Palla to Jaitpur in the south.

The first stage of the project includes phased development of four parcels of land - Yamuna Biodiversity Park, Qudsia Ghat near ISBT, Golden Jubilee Park, and NH-24 to DND flyway. "There was delay in getting possession



of the land marked for development as some patches were in dispute. On the eastern bank, a number of plots were on agriculture lease of up to 33 years. As and when the lease expires, DDA will take over the plots," said an official.

While substantial progress has been made in the Yamuna Biodiversity Park and Golden Jubilee Park, the drawings for Qudsia Ghat are being finalized. "We plan to use bamboo structures for all recreational activities. We are taking the help of IIT-Roorkee, and have sent them the plans for a third-party review. We expect to hear from them shortly," said DDA spokesman Neemo Dhar. In Phase II, other zones will be taken up.

The land has been divided into protective biodiversity, interactive biodiversity and public recreational zones. The areas closer to habitation with high-movement corridors, easily accessible, as well as those seeing cultural and religious activities, have low poten-

tial for biodiversity development. They are considered fit for the public recreational zone. Areas with rich wetlands and fauna in the river basin have been designated as the protective biodiversity zone. Areas with moderate biodiversity potential, allowing the public a chance to explore the riverine ecology, are part of the interactive biodiversity zone, connected by green linkages. This zone is supposed to be of maximum public interest, and will boast playgrounds, nursery and theme parks, etc, say DDA sources.

Connecting all the three zones will be a riverfront 'walk', serving as a promenade. Said the senior official, "The walk will have seating arrangement, driveway and kiosks. It will be similar to the promenade beside the Thames in London." The land agency plans to develop pockets of organic farming, especially on the eastern bank, but on a limited scale.

GREEN PATCHES THAT CITY NEEDS

● Zonal areas in hectares

3,620

UP border-
Wazirabad
barrage

1,100

Wazirabad
barrage-ISBT
bridge

225

ISBT bridge-
Old railway
bridge

825

Old railway
bridge-IP
barrage

365

ISBT bridge-
Old railway
bridge

1,300

NH 24
bridge-Okhla
barrage

1,900

Okhla
barrage-
Haryana border

FEATURES OF PROJECT

1 Conservation of natural areas like swamps, marshes and special aggregation of flora and fauna, through designed biodiversity zones

2 Varying hierarchy of city-level greens to be developed along with city-level recreational facilities

3 Renewal/modification of certain existing uses to improve their impact on the surrounding environment

4 Organic farming or agriculture to be proposed, but on a limited scale

Yamuna Riverfront Development Project aims to conserve, protect and restore biodiversity of the river integrated with public recreation

The Times of India, Delhi dated March 27, 2013

Any citizen can move green panel

Nitin Sethi | TNN

New Delhi: Violations of green norms and clearances can be appealed against by any citizen and not just someone directly or indirectly affected by a project, the National Green Tribunal has held, widening the scope of green litigation in the country.

The tribunal has also put in mandatory obligations on the government and project developers to disclose details of clearances. Both have avoided doing so in many cases till now.

The order came in the case of the 780 mw Naymjang Chhu Hydroelectric Project in Tawang district of Arunachal Pradesh. In this particular case, the project developer had put out a



GREEN BATTLE

small notice-sized advertisement in a local newspaper instead of publishing the entire clearance details.

In its order, the tribunal said, "Law gives a right to 'any person' who is 'aggrieved' by an order to prefer an appeal. The term 'any person' has to be widely construed. It is to include all le-

gal entities so as to enable them to prefer an appeal, even if such an entity does not have any direct or indirect interest in a given project. The expression 'aggrieved', again, has to be construed liberally."

The order takes significance because with the setting up of the tribunal, it had become the address of first recourse for all those wanting to go to court on green matters. The NGT further said, "The grievance of a person against the environmental clearance (given by the environment ministry) may be general and not necessarily person specific."

Also laying down the line for public disclosure of details of clearance given to projects, the NGT said, "The

project proponent is legally obliged under this provision to make public the environmental clearance granted for the project with the environmental conditions and safeguards at their cost by promptly advertising it in at least two newspapers of the district or in the state where the project is located."

Warning that mere notice of securing a clearance by the project developer was not enough, it noted, "The conditions for granting of environmental clearance with definite safeguards have to be published in the newspapers so that any person can make up his mind whether he needs to question the correctness or legality of such order."

For the full report, log on to www.timesofindia.com

The Economic Times, Delhi dated March 27, 2013

Clean Energy Investments Down 53% at \$6.3 B in 2012

SHREYA JAI
NEW DELHI

In just one year, investment in clean energy initiatives in India has gone down by 52.7% reaching \$6.3 billion in 2012, which was what wind market alone attracted in 2011. The investment in wind, however, was reduced to half in the absence of any incentive scheme.

Solar business comprising both power production and equipment manufacturing is suffering due to poor policy enforcement. According to Bloomberg New Energy Finance, investment in the solar energy sector grew by 90% in 2010 to reach \$5.2 billion in 2011, but it came down drastically to \$1.7 billion in 2012.

Experts don't see significant improvement in investment this year.

"We might expect investment in the range of \$7-9.5 billion in clean energy, as the second phase of solar mission is supposed to start this year," said Ashish Sethia, country manager-India, Bloomberg New Energy Finance.

The government aims for a capacity addition of 10,000 mw of solar power by 2017 under the ambitious Jawaharlal Nehru National Solar

Mission. But currently, the capacity stands at mere 1,200 mw. The government also hopes to sell solar power at the same rate at which conventional power is sold in 4 years from now.

The first phase of the solar mission was quite successful, but the second phase is under clouds even before its commencement. The newly introduced viability



Investment in the solar energy sector declined to \$1.7 billion in 2012 from \$5.2 billion in 2011

gap funding scheme hasn't gone too well with the industry. Then there are trade wars going on among domestic and foreign manufacturers of solar equipment. Also, the US has slapped a case in WTO against India's domestic procurement clause in the solar mission. "For a solar still in its infancy, starting a trade war could become a costly distraction when the focus should be to encourage new technologies, competition and free markets," said Raj Prabhu, Managing Partner at Mercom Capital Group.

With the delay in solar mission and

funding related issues, the investment sentiment isn't that upbeat. Market analysts also feel that trade dispute such as this one would add unwanted uncertainty to the young Indian market where financing is already a challenge. "With a high borrowing cost in the 13-14% range and no technical requirement for bidding in India; banks consider most of these projects too risky to finance," said Prabhu.

"We need a policy push and more than that certainty and clarity on the policies and project planning," said Sanjay Chakrabarti, partner, clean energy at Ernst & Young.

On the other hand, confusion still prevails over incentive scheme associated with wind energy business in India. But with a good track record, wind is expected to perform better than solar.

"It will be wind that will score well for next few years and solar will get more distributed," said Chakrabarti. "Wind is a completely domestic sector, which creates employment, brings in FDI, has a low gestation period and provides energy security. Wind would contribute majority of renewable energy investment in the coming year."

The Times of India, Delhi dated March 30, 2013

UP, Delhi to lift Yamuna debris

Neha Lalchandani | TNN

New Delhi: Uttar Pradesh and Delhi governments have said that they will remove all debris and solid waste from the Yamuna river bed by May 31. All the land-owning agencies which have a stake in the riverbanks will have to ensure that the work is completed and no further dumping is permitted. In case alternative land is not available for dumping of the debris, the waste should be sent to Burari except for horticultural waste, which will be used for composting.

The central pollution control board (CPCB) member secretary will have to monitor progress of the work and submit a report to the ministry of environment and forests by April 30. DDA has also been asked to identify more sites for dumping construction and demolition waste lying along the riverbank as the four existing sites are inadequate.



DEADLINE FOR CLEANING: Governments promise to clear river bed by May 31

These decisions were taken in a meeting chaired by the secretary of the MoEF earlier this month. CPCB officials who had visited the Yamuna river bed reported that they had observed four kinds of waste dumped along the Yamuna, which included construction waste, mixed waste, horticultural waste and large concrete blocks. On the eastern bank of the Ya-

muna, 37,000 cubic metres of *malba* has been found dumped, while on the western bank, from Nizamuddin Bridge to Batla House, the waste is to the tune of about 53,000 cubic metres.

DDA officials said that by March 31, they would have removed about 20,000 cubic m waste from the eastern bank, and a similar amount from the western bank by April 30. DDA will also set up barricades at various points to prevent further dumping.

Delhi Police will not permit UP- and Haryana-registered vehicles carrying *malba* to ply in Delhi unless they are deputed to remove waste.

Delhi Metro Rail Corporation (DMRC) has also been asked to remove its waste from the Yamuna Bank area. Two sites at Sarai Kale Khan and Shastri Park have been allotted to DMRC for dumping waste. In case these sites are not sufficient, DMRC will take the waste to Burari and bear all costs of transportation.

The Times of India, Delhi dated March 31, 2013

Pollution body orders Sterlite TN plant to shut

V Mayilvaganan | TNN

Tuticorin: The Tamil Nadu Pollution Control Board on Saturday issued a closure notice to the controversy-dogged Sterlite copper smelting plant in Tuticorin, forcing it to shut down. The board's closure notice comes in the wake of "unsatisfactory" explanation to the show cause notice issued by district collector Ashish Kumar, after a suspected sulphur dioxide leak from the plant on March 23.

Sterlite authorities had initially resisted the move, but after a strict warning, the authorities shut all operations. A spokesperson for Sterlite, part of the Vedanta group of companies, said, "Our emissions were within permissible limits on March 23. There are no violations of pollution norms on our part."

The Times of India, Delhi dated April 02, 2013

NGO seeks switch to green energy



Greenpeace activists protest outside Delhi assembly on Monday

TIMES NEWS NETWORK

New Delhi: Greenpeace India on Monday staged a protest outside the Delhi Vidhan Sabha, asking CM Sheila Dikshit to move from coal-based power to renewable energy sources.

The team from Greenpeace held up a caricature of the CM in which she was shown assuring uninterrupted power supply to Delhi this summer despite not having any concrete plans for it.

It claimed that with summer just having started, many parts of Delhi were facing power cuts. "Delhi government and in particular the CM should understand that the real solution to power crisis does not lie in being over dependent on coal-based technologies which are becoming expensive, but increasing investment in renewable energy

like solar and biomass," said Abhishek Pratap, senior energy campaigner, Greenpeace India.

Greenpeace claims that over 75% of Delhi's electricity comes from coal-based thermal power plants which are mostly situated in other states. In 2012, 32 major thermal power plants, including five which supply power to Delhi, faced severe coal shortage due to rising costs in both domestic and international markets, leading to deficit of 8,000 MW in electricity generation.

"Despite Delhi reeling under a severe power shortage in 2012, the budget presented by the CM didn't provide any confidence to the people that a similar power crisis would not occur. While no plans for harnessing alternate energy sources were unveiled, overall energy budget was also reduced to half," said Pratap.

The Times of India, Delhi dated April 03, 2013

Parched India harvesting dew

A 300 Sqm Roof Can Generate 30 Litres Of Water Daily Without Power

Shobha John | TNN

New Delhi: The film grabbed one's attention. It showed a billboard spouting water out of thin air. It seemed just the answer to the drought in India's western regions. Though this was a recent advertising gimmick by the University of Engineering and Technology in Lima and Mayo Peru Draft FCB, can such innovative ideas solve our water crisis?

The billboard, located in Bujama village, Peru, has condensers inside it which generate water from humid air. This is filtered, stored in tanks and dispensed through taps. In just a few months, it has produced over 9,000 litres of drinking water. The cost? \$1,200.

India, too, is experimenting with technology to generate water. One innovation extracts water from air without the use of expensive electricity. And surprisingly, dew is the magic source of this precious commodity. Dew harvesting is being used in arid Kutch. "Coastal areas are ideal places for collecting dew as it occurs more frequently and in large quantities there," says Prof. Girja Sharan, a former IIM-A professor and the first Indian to harvest dew.

"From a 300sqm roof, we can generate 30 litres of water daily," he says. An individual, incidentally, needs four litres of drinking water daily. He saw dew formation in April-May on plants in the Kutch and was surprised as it normally occurs in winter. A four-year



The billboard, located in Bujama village, Peru, has condensers inside it which generate water from humid air. This is filtered, stored in tanks and dispensed through taps. In just a few months, it has produced over 9,000 litres of drinking water

R&D programme by him led to large dew harvesting systems being erected on roofs and the ground. Dew is extracted using non-toxic plastic condensers installed on frames. They cool rapidly at night and the dew thus formed is collected in bottles. It's also used to harvest rain.

What's more, Latin America and Gulf states are evincing interest in this technology.

Meanwhile, in some 1,000 villages in Saurashtra, Kutch and the Gulf of Khambhat, Kharash Vistaarotthan Yojana (KVVY), an initiative of Sir Ratan Tata Trust, is working to reverse the salinity in sea water which causes immense hardship. These efforts fructified in Junagadh where roof rainwater harvesting structures (RRWHS) have been installed. These include a domestic rainwater capture component and an underground tank which can store water for a year.

"The first shower is used to clean overhead tanks and then from the second shower, water is collected. Some 60,000 tanks have been constructed in Saurashtra," says Tushaar Shah, senior fellow at the International Water Management Institute. "Over 1,400 households were given funds to build tanks of up to 20,000 litres capacity. Having a RRWHS can save a woman 35-40 days a year in drinking water procurement for the family," he says.

In some coastal areas, cement-concrete barriers are also used in wells to segregate sea water and freshwater. Farmers found that their wells could yield fresh water up to a certain 'critical depth', digging beyond which would result in mixing of the two. KVVY helped them in sealing their wells by creating a cement-concrete barrier. Water yields are low, but it is fresh water. Every drop counts, after all.

The Times of India, Delhi dated April 04, 2013

Not all sewage being treated

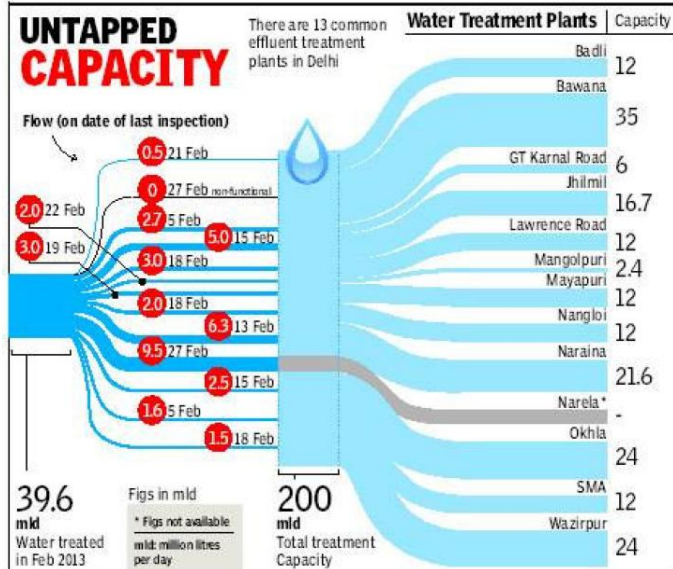
Pollution Watchdog Says Treatment Plants Doing Poorly

Neha Lachandani | TNN

New Delhi: Delhi's common effluent treatment plants, located in industrial areas to treat industrial waste, suffer from a unique problem. The treatment capacity is much more than the actual generation of effluent but despite that, not all the effluent is being treated. Recently, Delhi Pollution Control Committee, which monitors the operations of the CETPs, filed prosecution against the GT Karnal Road CETP for failure to apply for consent to establish and consent to operate.

"The GT Karnal Road industrial area has no committee and nobody is willing to take charge of the CETP. It is a 6 million litre per day (mld) plant that receives about 2.5 mld of waste. They have not applied for consent to establish or operate and the department was forced for the first time to prosecute them. The matter is now pending in court," said a senior official.

DPCC says several CETPs are underperforming. Delhi has 13 CETPs, each under the control of a committee. Industrial effluent cannot be treated in ordinary sewage treatment plants as it contains heavy metals. The effluent, treated or otherwise, is finally



discharged into the Yamuna.

Sources say that each CETP has some problem which is why they often fail to treat waste within the specified parameters. In the Okhla plant, the last inspection by DPCC in February showed that levels of biochemical ox-

ygen demand, TDS and sulphide in treated effluent were higher than prescribed.

DPCC has carried out a detailed inspection of each CETP to determine problems. "So far we have met with three committees and have scheduled more meetings. Each

unit is being given six months to address their issues. A meeting will be held with the secretary of the environment department to draw up a long term action plan. Once a plan has been charted out, no leniency will be shown for violations," said a DPCC official.

4 metros alone trash 780 tonnes of plastic every day

Dhananjay Mahapatra | TNN

New Delhi: Faced with staggering figures on plastic waste generation in the country, the Supreme Court on Wednesday suggested a two-pronged strategy for effective implementation of plastic waste management and ban on gutka and pan masala mixed with chewing tobacco and nicotine.

Around 780 tonnes of plastic waste is added to the litter in the four metros every day, the Central Pollution Control Board told the Supreme Court on Wednesday. The CPCB said a survey conducted in 60 major cities found that 15,342.46 tonnes of plastic waste was generated every day, amounting to 56 lakh tonnes a year.

As 40% of plastic waste generated is not recycled, the daily addition to untreated plastic in Delhi is estimated

at 275.6 tonnes, followed by Chennai (171.6 tonnes), Kolkata (170 tonnes) and Mumbai (163.2 tonnes).

Another additional solicitor general, Indira Jaising, painted an equally grim health scenario by informing that the ban on 'gutka' and 'pan masala' laced with tobacco had not been effective due to manufacturers playing truant with the law while a lethargic state machinery compounded matters.

Taking a cue from CPCB's survey, the bench chose Delhi, Bangalore, Agra, Faridabad and Jaipur and asked the commissioners of civic bodies to file affidavits within four weeks detailing steps taken to dispose of the waste responsibly. On ban on gutka and pan masala, the bench asked health secretaries concerned to file their response in four weeks.

The Times of India, Delhi dated April 04, 2013

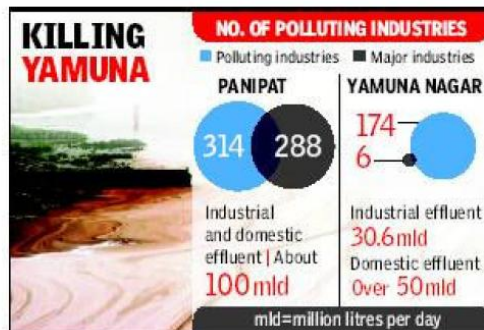
Heavy metals entering Delhi supply

► Continued from P1

Yamunanagar, on the other hand, reported 176 polluting industries, of which six were major polluters. The area accounts for more than 30 million litres per day (mld) of industrial effluent, which the state government claims is treated and then discharged into drains.

Rampant industrialization along Panipat and Yamunanagar means heavy metals flow freely into the water at Wazirabad from where it is used by Delhi.

Both Haryana and the Central Pollution Control Board admit the ETPs do not treat all the industrial discharge and a lot bypasses the system entirely to enter the river. At Yamunanagar, the



Haryana pollution control board says it has closed 14 industries found to be polluting water and asked six plants to upgrade their treatment plants. At Panipat, domestic and industrial discharge

finds its way into drains "directly or indirectly".

"The state board has made it compulsory to install ETPs but they are either under-utilized or not treating up to mark. Effluents have also

been found to bypass the ETPs completely in some cases. On several occasions when pollution levels in the Yamuna rose to such an extent that our water treatment plants had to be shut down because they are incapable of treating industrial pollution," said an official.

Often, the industrial waste finds its way to sewers. Panipat and Yamunanagar have a sewage treatment capacity of 75 mld, but discharge about 150 mld, indicating that not all sewage is treated before it reaches the Yamuna. In February, the YJA had tested water in the Dhanura Escape and found the presence of heavy metals exceeding permissible levels.

Beyond Delhi, Yamuna water is not used for drinking.

The Times of India, Delhi dated April 04, 2013

Plastic waste time bomb ticking for India, says SC

Metros Throw Up 2,000 Tonnes Daily

Dhananjay Mahapatra | TNN

New Delhi: "We are sitting on a plastic time bomb," the Supreme Court said on Wednesday after the Central Pollution Control

► Dump 780 tonnes, P 10

Board (CPCB) informed it that India generates 56 lakh tonnes of plastic waste annually, with Delhi accounting for a staggering 690 tonnes a day.

"Total plastic waste which is collected and recycled in the country is estimated to be 9,205 tonnes per

FILM OF FILTH

56L tonnes of plastic waste dumped by India in a yr
9,205 tonnes is recycled
6,137 tonnes is plain litter



day (approximately 60% of total waste) and 6,137 tonnes remain uncollected and littered," the CPCB said.

The four metros are major culprits in generating such waste, with Delhi producing around 690 tonnes a day, followed by Chennai (429 tonnes), Kolkata (426

tonnes) and Mumbai (408 tonnes).

A shocked court asked civic authorities of five cities — Delhi, Agra, Jaipur, Faridabad and Bangalore — to submit reports on the steps taken to contain dumping of plastic and implementing the ban on gutka.

The Times of India, Delhi dated 05 April, 2013

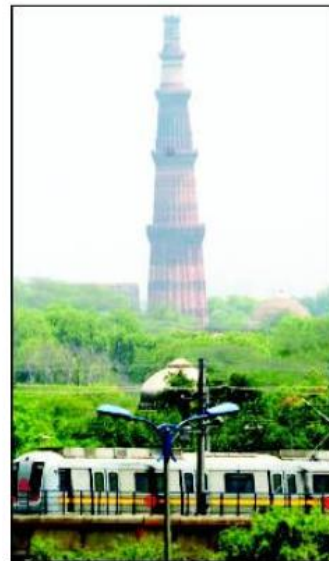
Focus of cities not on sustainable growth

Continued from P1

Rapid urbanization has forced government agencies to look for quick-fix measures to meet the growing infrastructure demand. But little attention is being paid to sustainable development of cities, which are seeing a surge in migrant population.

Delhi and Kolkata are the only cities which have made a provision for ward development plans and metropolitan planning committees, respectively. "These are crucial to sustainable development of cities. The city system in Surat and Ahmedabad, which have witnessed massive development in the last decade, is not ready for the future," said Srikanth Vishwanathan of the NGO, India needs to learn from New York and London where emphasis is on planned development, says the survey.

While assessing the cities on 107 pointers – divided under four main heads – the survey found that a majority of local bodies faced a serious fund problem and that the political leadership was not strong enough to get the



work done. Jaipur was ranked first in terms of political leadership, but due to lack of resources and planning, no major work could be executed. "What is the point of having a strong leadership without any resources! There is a need to decentralize power, especially financial, and empower local bodies. Civic agencies need to widen their tax base so that they can spend more funds,"

said Vishwanathan. Indian cities need to learn from New York where the capital expenditure per capita is Rs 21,322 (London Rs 15,177) compared to Delhi's Rs 2316 and Mumbai's Rs 4079.

The survey also looked at quality of life. "We checked with people on what they think about the cities. Transportation and clean drinking water were the prime concerns. While Surat and Ahmedabad were rated as the best cities, Kanpur was described as the worst city to live in. When it comes to transparency, other cities have a lot to learn from Hyderabad, which is the only city to have area sabhas," said Swati.

Deccan Chronicle, Hyderabad dated 05 April, 2013

Chiru favours sustainable tourism

DC CORRESPONDENT
NEW DELHI, APRIL 4

Minister of state for tourism Chiranjeevi on Thursday said that the need of the hour was not the growth of tourism alone, but the development of tourism in a sustainable manner.

The minister announced that India would host United Nations World Tourism Organisation (UNWTO) Commission's Conference on sustainable tourism development and the 25th joint meeting of the UNWTO commission for East Asia, Pacific and South Asia at Hyderabad from April 12 to 14.



K. Chiranjeevi

"India has been closely working with UNWTO for the cause of developing nations. Our initiative at the international level to host the two events, no doubt, will go a long way in highlighting India's role in

promoting global and regional tourism in sustainable manner for the economic growth, employment generation and social integration," he said.

Even as he said that the South Asian region has rich and varied tourism products to attract visitors from the world over — with heritage and culture dating back to thousands of years, architectural and natural marvels, an unmatched biodiversity — and is home to almost all the world religions, he added that the market share of South Asia in World Tourist Arrivals is only 1.3 per cent which is a cause of concern. "On a positive note the average

annual growth in international tourist arrivals to the region during the period 2005 to 2011 has been 7.2 per cent as compared to the world annual average growth of 3.5 per cent during the same period," he added.

In the meeting, the best practices and policies adopted the world over will also be shared. India is currently the chairperson of the UNWTO regional commission for South Asia.

Twenty-one nations including Bangladesh, Bhutan, Brunei, Cambodia, China, Fiji, Indonesia, Iran, Japan, Macau, Malaysia, Maldives and others have confirmed their participation.

The Times of India, Delhi
dated April 06, 2013

Tapping trash for landfill gas

Jayashree Nandi | TNN

New Delhi: A new technology for recovering landfill gas may reduce harmful greenhouse gas emissions from landfills by a great extent. If commercialized, the gas recovered can be used for cooking, heating, electricity generation and even transportation. The technology has been introduced in a pilot project at the Okhla landfill. After two years of monitoring it, scientists who worked on the project on Thursday declared that the project has the potential to be successfully commercialized.

The project was introduced in 2011 by The Energy and Resource Institute, MoEF and Jamia Millia Islamia University. According to municipal figures, the Okhla site gets about 1,600 tons of waste everyday and a total of 6.8 million tons of waste has already been disposed there. High amounts of organic waste dumped along with dry waste degrade slowly and emit large amounts of methane gas.

"Methane is almost 20 times more harmful than carbon dioxide. It has very high global warming potential and is also explosive in nature. Through the project, we aimed to trap methane and use it more productively," Prof. Avinash Chandra of IIT Delhi said. The research team first analyzed whether there was enough methane emission from the site under static condition with help of a gas analyzer. They found 44.6% of the emissions were of methane and 15.9% of carbon dioxide. "There is enough methane that can be trapped by our indigenous technology. So we trapped the gas with the help of blowers that suck it in, clean it and then flare it," Suneel Pandey of TERI said.

ECO-FRIENDLY NEW TECH

Trash that cannot be recycled or reused often ends up in landfills, where it produces methane as it decomposes. Because methane can be captured from landfills, it can be burned to produce electricity, heat buildings, or power garbage trucks. Capturing methane before it gets into atmosphere also helps reduce effects of climate change

1 Methane gas is naturally created as garbage decomposes in a landfill. The gas is captured and collected through a series of wells that are drilled into the landfill

2 The methane gas is transported first to a gas scrubber, which extracts the moisture and filters out particulates, and then to a compression facility

3 Finally, the gas is used to fuel turbines or engines to produce electricity. For direct-use applications, landfill gas is delivered offsite to industrial customers and used as an alternative fuel source

GETTING RID OF THE DANGEROUS GAS

Methane is a very powerful greenhouse gas. One pound of methane traps 21 times more heat in the atmosphere than a pound of carbon dioxide. Methane is also the main ingredient in natural gas

GREENHOUSE GAS EMISSIONS

CO₂

Methane

The budget for the Okhla LFG pilot project

₹35L



China has implemented 39 Land Fill Gas projects and is earning carbon credits. The UK, Japan and the US have many such projects



In 2009, Germany produced enough electricity from biogas to power 3.5 million homes



Sweden has been operating a biogas-powered train since 2005. It shuttles passengers between two cities that are 75 miles apart

Gas Authority of India Ltd is now considering how the gas from this site can be used commercially. It has the potential to be used for cooking and to generate electricity but will require additional investment. If it is purified of CO₂, it can be used for transportation just like com-

pressed natural gas is being used in Delhi. For now, the gas is being flared so that methane emissions are reduced. But flaring does release carbon dioxide which is also a greenhouse gas.

This technology is different from the conventional waste-to-energy plants at

landfill sites in Delhi, Bangalore and other cities which incinerate waste to generate heat. However, LFG technology may not be implemented in the same way across cities. According to scientists, local climatic conditions also play an important role in the success of gas recovery.

The Times of India, Delhi
dated April 09, 2013

Tribunal prohibits burning of plastic

Ayaskant Das | TNN

New Delhi: Taking cognizance of serious environmental pollution resulting from rampant burning of plastic and leather materials, the National Green Tribunal has ordered the Delhi Police commissioner to prohibit these activities in and around Mundka and Tikri Kalan in west district.

The principal bench of the

GREEN CALL

tribunal headed by chairperson Justice Swatanter Kumar passed these orders during the hearing of two separate cases related to environmental pollution. Delhi High Court had earlier transferred both the cases — filed by city residents Satish Kumar and Mahavir Singh — to the green tribunal for adjudication.

The petitioner Satish Kumar had alleged that such burning activities have con-

tinued unabated despite a ban imposed by the Delhi high court in 2010. Advocate Saket Sikri, appearing for the petitioner, had brought to the notice of the tribunal on how burning of plastic and leather by several industrial units has been adversely impacting the health of residents living nearby. The tribunal has ordered the DCP having jurisdiction over Mundka and Tikri Kalan areas to file a status report regarding action taken before the next hearing on April 29.

The tribunal, while passing these orders, has also asked Haryana police to comply with the directions prohibiting the burning of unused leather and plastic products in the area. The senior superintendent of police of Jhajjar district has also been directed to comply with the orders of the tribunal. The tribunal has also directed the North corporation to clarify its stand in the matter by impleading itself as a party to the case.

Deccan
Chronicle,
Hyderabad dated
07 April, 2013

Polluting units to move out of ORR

DC CORRESPONDENT
HYDERABAD, APRIL 6

Citizens living in and around the industrial areas of the city can now breathe easy — literally! A welcome news for them is that all the polluting industries will be shifted outside the Outer Ring Road limits. As many as 45 industrial clusters will be developed with every required facility outside the ORR.

A decision to this effect was taken by the government recently. There are 14 industrial estates in the city and outside its limits, but inside the ORR. There are about 10,000 small, medium and big industries in these 14 industrial areas.



However, not all of them will be shifted.

Non-polluting industries like IT, will stay put. All other industries will be moved out from Jeedimetla, Balanagar, Qutbullapur, Kattedan, Gajularamam, Uppal, Moulali, Autonagar, Kushaiguda, Nacharam, Patan-

cheru, Ramachandrapuram, Mallapur and Cherlapally.

The move is aimed at checking environmental pollution caused by these industries in the city, mainly through water pollution of nalas, air pollution and ground water pollution.

However, residents living

around the industrial clusters demand a specific time-frame.

"The government has not given any time-frame in which it intends to shift these industries. Over the years, hundreds of residential colonies have sprung up in and around these industrial areas. Thousands of families are prone to health hazards due to the air, water and ground water pollution caused by these industries. The government should come out with a deadline to shift these industries outside the ORR," said general secretary of Sri Sai Enclave Owners and Residents' Welfare Association, Jeedimetla, N.S.S. Madhusudhana Chary.

The Times of
India, Delhi dated
April 09, 2013

City on top plastic generators' list

800 Tonnes Created Daily, It Comprises 80% Of Trash Reaching Landfills

Neha Lakshandani &
Maria Akram | TNN

New Delhi: Delhi is among the largest producers of plastic waste in the country generating over 800 metric tonnes per day. Around 750 metric tonnes reach landfill sites daily of which roughly 80% are plastic bags and packaging materials.

In fact, the capital is among nine cities across India where plastic forms more than 10% of the total waste generated. What makes it more embarrassing for the local government is that plastic bags have been banned in the city since 2009, and not just once but twice.

Central Pollution Control Board data shows that in cities like Shimla and Chandigarh where plastic bags have been banned plastic waste

STILL WASTEFUL

7,500-8,000 metric tonnes of municipal solid waste produced in Delhi daily

10.14% of waste in landfill sites is plastic

80% is bags and packaging film

► Delhi among 9 cities where plastic forms over 10% of total waste

► Segregation mostly done by ragpickers
► Re-processed plastic used to make toys, slippers, bags etc



forms less than four percent of municipal solid waste. Other cities where plastic forms more than 10% of the total waste include Faridabad, Ahmedabad, Raipur, Kolkata, Surat and Port Blair.

While accepting that very little has been done to segregate waste in Delhi, the municipal corporations claim the percentage of plastic waste has come down to 2-4% in the past few years.

"We don't have to segregate waste. Before reaching dhalao and other waste pick-up points, the waste needs to be segregated by private concessionaires and ragpickers. However, the percentage of plastic waste has come down to 2-4% from 7-8% till two years ago," Mukesh Yadav, South corporation's spokesperson, said.

However, waste segregation is in its early days. In east Delhi, segregation is taking place in only two of the 64 wards. "At present, no segregation is taking place but we have recently commissioned the work to segregate the waste from two wards to Chintan, an NGO. Our waste-to-energy plant at Ghazipur has been operational since April 1 and we will segregate plastic there which will then be sent to the plastic recycling industry," S S Yadav, commissioner, East Corporation, said.

CPCB officials say that this is not enough. For a city where the plastic bags have been banned since 2009, non-segregation of waste and such high levels of plastic reaching landfill sites is shameful.

"Most of the segregation is done by ragpickers who are an unorganized workforce. Even recycling is done largely in the unorganized sector. Delhi has around 4,000 manufacturing units of which only 200-300 have licences. The rest operate in unauthorized areas and employ more than one lakh people. The failure of the civic agencies to manage plastic waste is evident from the massive pollution that can be seen all around us," a CPCB official said.

The Times of
India, Delhi dated
April 09, 2013

No prosecution since Dec, so polybags back

TIMES NEWS NETWORK

New Delhi: The state environment department is in quite a fix over its plastic bag ban. The first time it banned the bag in 2009 it was on directions of the Delhi high court. The second ban, imposed in 2012 on its own initiative, has been stayed by the same court based on a petition by the plastic bags manufacturers. Now with the Supreme Court asking state governments for the status of plastic waste management in their respective areas, Delhi government is hoping for some respite.

Meanwhile, with the department having suspended prosecution since December 2012, plastic bags are back in the city with a vengeance. Shopkeepers who had stopped storing plastic bags have brought them back. "The bag has been

banned twice in the city and so far the government has not done much to ensure that the bag stays out of the markets. We shifted to alternate materials in December but then the court stayed the ban. While that is the case, we are using cheaper plastic bags," a shopkeeper in Patparganj said.

The fresh notification banning use, storage, distribution and manufacture of plastic bags was issued on October 23, 2012 and the ban was enforced from November 23, 2012. A month later, the Delhi government lawyer communicated in a letter that the Delhi high court has said that "there should be no prosecution in furtherance of this notification (on ban on use, sale, distribution and manufacturing of plastic bags issued on October 23, 2012 and effective a month

BAN STATUS

Jan 2009 | Sale and distribution of plastic bags banned in Delhi

Apr 2011 | CM announces ban on manufacturing

Nov 2011 | Deadline for submission of comments on draft order

May 2012 | Officials say another two months before law can be enforced

Oct 23, 2012 | Fresh notification issued to ban use, sale, distribution and manufacturing

Nov 23 | Ban becomes effective

Dec 22 | Delhi government lawyer conveys to environment department that high court has verbally stayed ban

later)". The court was hearing a plea of plastic manufacturers against the ban on manufacturing of plastic bags.

While the government has been criticized on taking a verbal court order so seriously, officials say that they have been advised by their lawyers to do so. "It is immaterial that the order was verbal. We don't want to get on the wrong side of the judiciary. The matter is yet to be heard and we will wait for the court to issue suitable orders. Meanwhile, the SC's involvement in the matter might spell relief for us as the HC could be prompted by it to issue an order in our favour," said an official.

The first ban on plastic bags in January 2009 was imposed when the high court observed that the city had failed to manage its municipal solid waste. The PIL was

filed by Vinod Jain, director of NGO Tapas, who also raised concerns about the ill-effects of plastic on the environment. "Plastic bags were not only found littered around the city but they were blocking drains and were being consumed by animals. Plastic does not decay and can be found in the environment for decades. Since the government was unable to provide any satisfactory plan of action for tackling the plastic menace, the court asked Delhi government to ban the bags," Jain said.

The 2009 ban failed to make a dent since prosecution was weak. The notification only banned use, sale and distribution of bags of less than eight microns thickness. Eventually, prosecution was stopped completely and usage of bags continued unabated.

The Times of India, Delhi dated April 11, 2013

Dams may dry up Ganga, warns ministerial group



The committee wants dams to maintain 30-50% water flow in the lean season

Nitin Sethi | TNN

New Delhi: Recognizing that the plethora of dams built and planned in the Ganga basin could almost empty the river of its waters in the winter season, an inter-ministerial group has recommended that the projects be re-engineered to maintain 30-50% of water flow in the lean period of December-March.

The group, headed by Planning Commission member B K Chaturvedi, also recommended that electricity production in existing and upcoming dams on tributaries in Uttarakhand be moderated marginally to ensure water flow is maintained at 25% between April to October, the period when the river has average or high water levels.

While keeping the ecological flow in the river at these levels, the government could permit the dams already working or in the pipeline to continue after redesigning to ensure the recommended flow of water. The move would require adjusting tariff and power production levels marginally. The panel has also recommended that 17 proposed projects adding up to 2,633 MW capacity be reviewed after the Ganga basin study by an IIT consortium.

Sixty-nine projects are proposed or running on Bhagirathi and Alaknanda — the two main

tributaries of Ganga river basin. These add up to a capacity of 9,020.30 MW. Of these, 17 projects are operational at the moment and 26 are under construction.

If accepted by the government, the report could provide UPA a route to blunt the BJP's shrill 'save the Ganga' campaign. Non-government members on board the panel, however, differed with the report.

Sunita Narain, director general of Centre for Science and Environment, has asked for a minimum of 50% flow in all projects between December-March. One of the key demands of protesters was met with the panel recommending that the river flow must not be intermittent but continuous. While noting that the existing 21 hydroelectric projects would face a 10-20% tariff increase on Alaknanda and Bhagirathi basins, the panel noted that the dams could be optimized to produce more electricity in high-flow seasons.

The group proposed that six tributaries be kept pristine in character, with the Nayar and Ganga river stretches between Devprayag and Rishikesh and that between Balganga and Tehri reservoir be declared fish conservation reserves.

For the controversial 330 MW Srinagar project, the committee left the decision to the environment ministry.

The Times of India, Delhi dated April 11, 2013

'By 2050, warming will make air travel bumpier'

Kounteya Sinha | TNN

London: Air travel is all set to get bumpier on transatlantic flights.

A first of its kind study has found that climate change will affect aviation by increasing air turbulence and causing flights to get bumpier. The study found that, by the middle of this century the chances of encountering significant turbulence will increase by between 40% and 170%, with the most likely outcome being a doubling of the airspace containing significant turbulence at any time.



AIR TURBULENCE TO INCREASE BY 170%

at any time.

The average strength of turbulence will also increase by between 10% and 40%. The aviation industry has long been accused of contributing to climate change. Now the study finds that rise in carbon dioxide emissions, longer journey times and increased fuel consumption will cause severe turbulence.

Dr Paul Williams from the University of Reading, together with Dr Manoj Joshi from the University of East Anglia, analysed supercomputer simulations of the atmospheric jet stream over the North Atlantic Ocean. Dr Williams said: "Most air passengers will have experienced the uncomfortable feeling of mid-flight air turbulence. Our research suggests that we'll be seeing the 'fasten seatbelts' sign turned on more often in the decades ahead. Air turbulence does more than just interrupt the service of in-flight drinks. It injures hundreds of passengers and aircrew every year—sometimes fatally. It also causes delays and damages planes."

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The Times of India, Delhi dated April 11, 2013

MAKE DEAD DRAINS A HUB OF LIFE

Indrani Basu | TNS

Ten years ago, the city of Seoul sacrificed a 12-lane elevated highway to revive a stream. Can Delhi do the same to restore its natural drainage? As reported by TOI over the last two days, portions of some polluted watercourses in south Delhi that were covered up to create parking space have turned into generators of corrosive gases. It's an ecological disaster that also threatens to bring down the concrete covering eventually.

But it need not be so. Experts say the network of streams, including Barapullah, Kushak and Sunehri drains, can be restored to its old glory. In fact, there was a plan to convert a 12.5km stretch of the watercourse between Said-ul-Ajab and Barapullah into a heritage trail, as it links five of the seven cities of Delhi: Qila Rai Pithora, Mehrauli, Siri, Tughlaqabad and Firozabad.

For tourists and heritage lovers that means a trail linking Qutb Minar and the Garden of Five Senses in the south to Humayun's Tomb, Purana Qila, Delhi Zoo, Pragati Maidan and India Gate in the centre. Likewise, Dilli Haat in the west would be connected to Lotus Temple, the Yamuna riverfront and the Commonwealth Games Village in the east. With landscaping and cleaning up of the watercourse, the trail itself could become an attraction offering nature walks, picnic spots and boating.

However, in the run-up to the Commonwealth Games, this plan was abandoned and an elevated road

Drains are valuable prime areas of the city and provide a good network comparable to roads. Why should such an important asset be wasted?

was built on the Barapullah instead. "The elevated road's pillars and sections of the drain that have been covered are obstructions. Garbage disposal contractors have also been using the drain as a dump. Yet, there are restoration measures that can be easily and quickly implemented without expend-

ECO MOBILITY

WALK-TO-WORK

► Aimed at connecting all major bus stops and future Metro stations so that people can walk along the greenway to access public transport



BICYCLE-ON-HIRE

► Cycle-on-hire to be provided all along the greenway. The cycles can be dropped off at any point, to encourage people to ride from one neighbourhood to another



PARK-AND-RIDE

► Facilities for people to park their cars and two-wheelers, and walk or hire a bicycle. Velo-taxis can also be introduced for travelling on the greenway



5 FIROZ SHAH TUGHLAQ'S TOMB

Firoz Shah, the 'Shahjahan of 14th Century Delhi', lies buried in this tomb that he built for himself on the shore of the Hauz Khas tank. He also built a fort and palace up north, named after him as Firoz Shah Kotla



ing much energy or carrying out extensive civil works," said Manu Bhatnagar, principle director of natural heritage at conservation body Intach.

Although abandoned, the South Delhi Greenways Project (see TOI's Wednesday edition) remains a worthy cause. "The drains should not remain neglected in the present state. They can connect colonies and also serve as an ecological corridor," said Ashok Bhattacharjee, director for the apex transport planning body UTTIPEC.

Leaving the drains in the current state would be suicidal, say environmentalists. "It's breeding mosquitoes and spreading dengue and malaria. Covering it up will increase formation of methane and other toxic and corrosive gases. Drains are valuable prime areas of the city and provide a good network comparable to roads. Why waste such an important asset?" said Anumita Roychowdhury, emissions expert and associate director at the Centre for Science and Environment.

"The authorities should certainly roll back this plan of covering the drain and the greenway project should be implemented. The drain can have multiple functions, such as walkways for increased mobility, a green channel and bio-remedial measures to keep it clean," she added.

The greenway would enable tourists to move around on a safe and landscaped corridor on cycles, skates or hired boats. Nearly 80% of the tourist attractions in the city can be connected in this way. The greenway will turn around 700 acres of precious open space in south Delhi into an idyll, say planners. The recreational facilities will also improve the quality of life in the city.



6 LODHI GARDENS

Several impressive tombs are located inside Lodhi Gardens. Spread over 90 acres, the greens enclose tombs of Mohammed Shah Sayyid and Sikander Lodi, besides the Sheesh Gumbad and Bara Gumbad. The monuments inside the garden are relics of mainly two dynasties, the Sayyids and the Lodhis. The site is now protected by the Archaeological Survey of India.

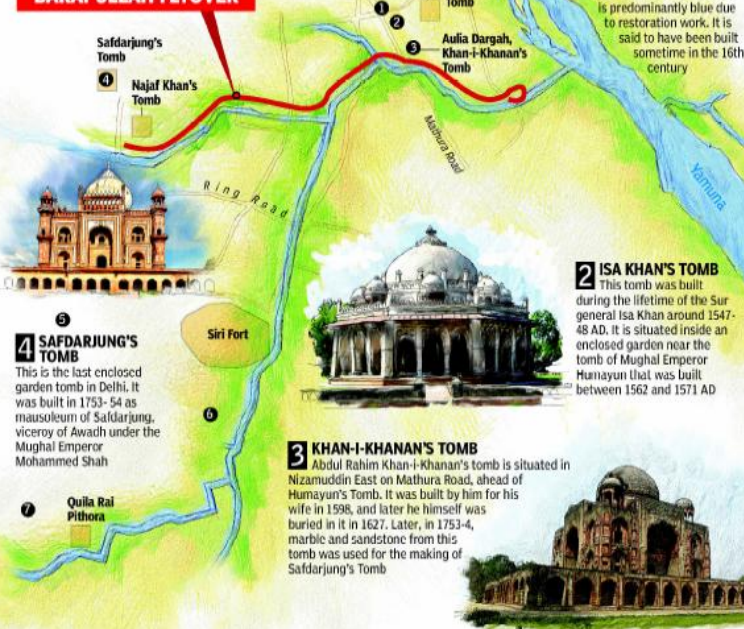


7 QUTAB COMPLEX

The soaring 73-metre-high tower of victory, built in 1193 by Qutab-ud-din Alauk has been a symbol of Delhi for centuries. It was built immediately after the defeat of Delhi's last Hindu kingdom (the Chauhans under Prithviraj). The tower has five distinct storeys, each marked by a projecting balcony. It tapers from a 15-metre diameter at the base to just about 2.5 metres at the top

Reviving the city's southern streams, like Barapullah, and greening their banks will not only improve the environment but also provide a new recreational corridor that connects 80% of the important monuments

BARAPULLAH FLYOVER



1 SABZ BURJ

The name means green dome. However, the dome is predominantly blue due to restoration work. It is said to have been built sometime in the 16th century



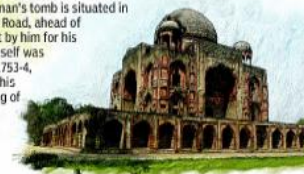
2 ISA KHAN'S TOMB

This tomb was built during the lifetime of the Sur general Isa Khan around 1547-48 AD. It is situated inside an enclosed garden near the tomb of Mughal Emperor Humayun that was built between 1562 and 1571 AD



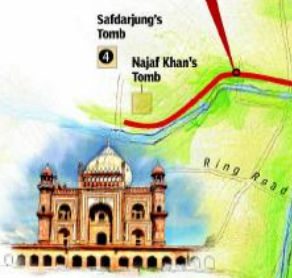
3 KHAN-I-KHANAN'S TOMB

Abdul Rahim Khan-i-Khanan's tomb is situated in Nizamuddin East on Mathura Road, ahead of Humayun's Tomb. It was built by him for his wife in 1598, and later he himself was buried in it in 1627. Later, in 1753-4, marble and sandstone from this tomb was used for the making of Safdarjung's Tomb



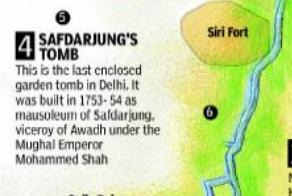
4 SAFFARDJUNG'S TOMB

This is the last enclosed garden tomb in Delhi. It was built in 1753-54 as mausoleum of Safdarjung, viceroy of Awadh under the Mughal Emperor Mohammed Shah



QILA RAI PITHORA

Qila Rai Pithora



*Deccan Chronicle,
Hyderabad dated April 12,
2013*

*The Times of India Delhi
dated April 13, 2013*

NUCLEAR DISASTER



The picture shows the Fukushima nuclear plant in Okinawa, Japan. — Agencies

New radioactive leak found in Fukushima

Tokyo, April 11: Japan's crippled Fukushima nuclear plant has sprang yet another leak of radioactive water; its operator said on Thursday, the latest in an increasingly long line of mishaps to rattle public confidence.

Tokyo Electric Power Co (TEPCO) said around 22 litres of highly radioactive waste water leaked from a pipe as work crews were trying to empty a reservoir that itself had already sprang leaks.

The company said it has not seen any evidence that the leaked water had gone beyond the confines of the plant.

"We are starting to dispose of the soil... that is believed to have been affected with the leaked water," TEPCO said in a statement.

Two years since the worst nuclear accident in a generation erupted, the plant remains fragile, with systems to cool spent nuclear fuel failing repeatedly in a matter of weeks in March and April.

The plant was hit by a 9.0-magnitude earthquake and massive tsunami on March 11, 2011, prompting reactor meltdowns that forced tens of thousands of people to flee their homes.

Many remain displaced and some will never be able to return.

Recycled cartons to help schools in 6 cities

Campaign Aims To Turn Waste Into Furniture

TIMES NEWS NETWORK

New Delhi: Ever imagined what your milk or juice carton could do, apart from adding to the heaps of trash in landfills? It can create classroom furniture like desks and shelves for thousands of underprivileged children.

A new recycling campaign called 'Your Cartons, My Classroom' (YCMC), which will be launched next week in Delhi, aims to fashion cartons donated by people into school furniture. The paraphernalia, made from chipboard sheets, will benefit six schools in six cities.

The idea behind YCMC is to popularize 'reuse' and 'recycling' among the public, especially schoolchildren. Delhi alone generates 8000 metric tonnes of waste every day with non-biodegradable cartons and plastic bags constituting over 10%. In gross violation of the Municipal Waste (Handling and Management) Rules 2000, wet and dry waste is not segregated by households. The result is a toxic mix that adds to the pollution. Some of the carton waste is disposed of to

scrap dealers and ultimately lands at paper mills for reuse.

Research shows that these cartons have 100% recyclability. A number of recycling firms have been roped in for YCMC, which will employ a unique technology. Cartons will be shredded and compressed under high heat and pressure with an equipment called 'hot press' to make flat sheets called chipboards. These boards will be used to make products like

YOUR CARTONS, MY CLASSROOM

doors, panels and pallets.

Cartons need a special technology for recycling as they are made up of paper board, polyethylene and aluminium. This combination helps them store milk and other perishable drinks safely till they are opened for consumption.

In September 2012, a similar campaign called 'Cartons to Classrooms' was carried out in Bangalore. Whenever a consumer donated 10kg cartons, desks were given to children

studying in schools bereft of furniture. The initiative helped collect over 1,00,000 cartons.

Another initiative that helps collect cartons is Project SEARCH (Sensitization, Education and Awareness on Recycling for a Cleaner Habitat) that began in 2009 along with Teri's Environment Education and Youth Services. It is taken up by 160 schools in six cities — Bangalore, Chandigarh, Delhi, Hyderabad, Mumbai and Pune. Students and teachers are encouraged to practise the 4Rs — Refuse, Reduce, Reuse and Recycle. Students are encouraged to collect cartons and other dry recyclables from the school premises and their home. The school collecting 10kg cartons donates it to the project, so that desks can be made for underprivileged children.

Robert Swan (OBE), the first person to walk to both North and South Pole, who is also an ardent environmentalist, has been supporting the campaign in India. He will be in Delhi during the launch at the DLF Select Citywalk Mall on April 20. People can drop cartons there till April 21.

The Economic Times, Delhi dated April 13, 2013

Panel Asks MoEF to Finalise Western Ghat Stand in 3 Wks

**OUR BUREAU
NEW DELHI**

The National Green Tribunal has lashed out at the environment ministry for its delay in finalising a road map for the conservation of the Western Ghats, and said it has time until April 25 to submit its report.

"This is a matter of some urgency and it is expected from the MoEF to take expeditious steps to finalise acceptance or otherwise of Gadgil Committee Report, or any other committee report..." tribunal chairman Justice Swatanter Kumar said in a notice to the ministry. "We grant three weeks time to the MoEF by way of last opportunity to finalise the report and place before the tribunal its clear stand."

A plan for future activity in the ecologically sensitive Western Ghats has been in the making for three years now. The Western Ghats Ecology Expert Panel, headed by Madhav Gadgil, was constituted in March 2010 to assess the status of the area and suggest measures for its conservation, and assess the impact of allowing mining and industry.

The Gadgil panel submitted its report in August 2011. However, the ministry did not make the report public till May 2012, after being directed by the Delhi High



Lakya pollution control dam at Kudremukh on Western Ghats

Court. It was only then that the ministry formally said that the Gadgil panel's report had not been "formally accepted".

The ministry said that the report was "still being analysed and considered". In the meantime, states like Kerala made it clear that they would not accept the Gadgil panel's recommendations.

It took the government another three months before it appointed another committee, which was headed by Planning Commission member K Kasturirangan. This group was to review the Gadgil report and suggest an action plan.

The tenure of the Kasturirangan-led panel has been extended

thrice already. It is expected to submit its report on April 15. In the meantime, the environment ministry has put a moratorium on all new projects in the Western Ghats till a conservation roadmap is prepared.

The Kerala government's petition that non-finalisation of the Gadgil panel report is affecting the state's commercial activities and development led to the court's notice to the ministry.

The green court was hearing a plea by NGOs from Goa, Kerala and Karnataka against grant of any clearance to new projects in the Western Ghats and implementation of the Gadgil panel report on the protection and preservation of the area.

*The Times of India Delhi
dated April 13, 2013*

Metro rapped for not harvesting rainwater

Notice Sent For Lack Of Facilities At Stations

Neha Lalchandani | TNN

New Delhi: The National Green Tribunal on Friday issued notices to Delhi Metro Rail Corporation, ministry of environment and forests, Central Ground Water Authority, Central Ground Water Board, as well as chief secretaries of Delhi, Uttar Pradesh and Haryana over DMRC's alleged failure to ensure proper rainwater harvesting (RWH) at its stations and depots.

The petition, filed by Vikrant Kumar Tongad, has claimed that if RWH was done at all metro stations, there is a possibility of saving at least 1.96 crore litres of water per year. If RWH is carried out on all elevated Metro tracks, an additional 6.37 crore litres of water per year can be saved.

Tongad said the petition was filed on the basis of a CGWA direction, issued under Section 5 of the Environment (Protection) Act, 1986 to Chief Secretaries of all states to adopt RWH in all over-exploited and critical blocks of the states. Directions were also issued for implementation of RWH in all areas for which group housing societies, institutions, schools, hotels, industrial establishments, farm houses in south and south-west districts to adopt roof-top RWH in their premises. Central Public Works Department has also made it mandatory to adopt RWH on buildings that more than 100 sqm.

Tongad's petition says there are 141 stations on the Metro routes, of which 130 stations are in Delhi, six are in Noida, three are in Gurgaon and two stations are in Ghaziabad. From these, 35 stations are underground, five stations are at-grade



Few stations and depots have rainwater harvesting

and the remaining are elevated. In the third phase, 91 stations are proposed. DMRC depends on DJB and groundwater sources for water.

"That in most of the stations of the Metro rail in NCR Delhi, (DMRC) has not installed the RWH system. Even at places where it has been installed, is not in proper condition. In an RTI response dated September 9, 2012, it has been informed that 'proper soak pit are provided in median of metro line from Shahdara to Dilshad Garden and Janakpuri West - Dwarka Sec-9'... The applicant visited Sector 11 and Sector 14 Dwarka stations of Metro and found the rainwater harvesting system was not working as per the guidelines. At other stations it was found that no rooftop water harvesting system is in place," says the petition. Of the seven DMRC depots, RWH has been provided only at the Sultanpur depot, claims Tongad.

The Times of India Delhi
dated April 13, 2013

RWAs want concrete action to save trees

Want Ministry's Greening Guidelines Enforced

TIMES NEWS NETWORK

New Delhi: Don't choke trees on concrete. This plea topped a number of recommendations made by citizens, resident welfare associations and members of the Delhi Green Circle to the government on Tuesday.

At a workshop on the 'best greening practices for the city', attended by forest department officials, citizens demanded that the 23-point greening guidelines issued by the Union ministry for urban development in 2000 be enforced.

Not just greening guidelines, the forest department is still to make good its promise of a citywide tree census. The groups also recommended that the horticulture department be given a free hand in developing parks and 'play streets' be created for kids. Sanjiv Kumar, secretary (environment and forests), pointed towards a tree near the workshop venue with hardly any breathing space. This was in clear violation of the 6X6 feet space supposed to be left around a tree, according to the greening guidelines. He said the guidelines drafted in the year 2000 were not being followed.

"To use the funds allotted for development, the MPs and MLAs spend huge sums on non-porous tiles, and concretize spaces not needing any concrete. Non-porous tiles are preferred as they are costlier. We want only porous tiles to be allowed in areas not used by vehicles," said Suhas Borker of Green Circle.

He gave the example of GK-

DON'T CHOKe GREENS

Key points of the guidelines issued by urban development ministry in 2000 for greening Delhi



▶ Tiling to be done only on pavements with heavy pedestrian traffic. Growth of grass on pavements to be encouraged

▶ Avoid excessive pruning, make compost out of fallen leaves instead of burning them

▶ An area of 6 X 6 feet to be left uncemented around

trees. Avoid digging near trees

▶ Use only organic compost for trees

▶ Create shelter-beds of canopy trees

▶ Take care of water fronts and catchment areas

▶ Greening of void/open areas where construction will not take place immediately

II Market where non-porous material is being used for tiling. Ajay Mahajan of NGO Kalpavriksh suggested that a 'tree row zone' be created to protect from damage. Most citizens agreed that the horticultural department should be in charge of parks. "The *mali* should be responsible for his garden," said Mahajan.

RWA said that parks run to seed as too many agencies interfere in their upkeep. "All land-owning agencies in Delhi should be notified that the parks will be managed by the horticultural department to fix accountability," added Borker.

Students from Blue Bells School and Kannada Senior Secondary School, who participated in the workshop, said

they were usually not allowed inside parks, especially if they were playing cricket or football. They wanted a play street to be created near parks.

Some speakers like Prabhakar Rao of Kalpavriksh urged that parks be treated like biodiversity spots. "Delhi has about 200 different types of birds. But how many of them can be seen in the colony parks? They don't come because they are no suitable trees to nest or feed on. Most parks have Ashok and Palm trees but no fruit-bearing trees, and shrubs and creepers," he said. Citizens urged RWAs to avoid heavy pruning in winter.

The forest department, meanwhile, is mooting eco-walks in Nehru Park and Lodhi Garden.

The Times of India Delhi dated April 15, 2013

Generators cause noise, air pollution

Ayaskant Das | TNN

Noida: Rampant use of diesel-powered backup systems are not only burning holes in the pockets of residents, but excessive use of generator sets has resulted in massive noise and air pollution in the city. Heavy duty generator sets have been posing a health hazard. While generator sets with low-height chimneys emit toxic fumes causing air pollution, those without proper acoustic enclosures result in noise pollution.

Recently, an expert committee formed to study the 'sources' and 'extent' of environment pollution in Noida took cognizance of diesel generator sets increasing pollution levels in the city. The six-member committee was formed by the National Green Tribunal and comprised top officials of the union environment ministry, the central and state pollu-

tion control boards besides an IIT expert appointed by Noida Authority.

The report states "many industries are using old generators without acoustic enclosures. Similar problems exist in residential areas." The panel besides recommending the Uttar Pradesh Pollution Control Board to initiate action against industries using generators without proper sound-proofing mechanisms and adequate height of exhaust pipes has also recommended UPPCL to provide continuous electricity to all areas.

Plans formulated by the state discom and Noida Authority for setting up non-conventional power plants have been tardy in their progress. While a plan formulated by the Greater Noida discom to set up a 1MW solar plant is yet to enter construction phase, Noida Authority has just about cleared its own plan to set up a similar plant.



Heavy duty generator sets are posing a health hazard

Cheap, green energy: Plants show the way

Emily Dugan

Scientists have harnessed the principles of photosynthesis to develop a new way of producing hydrogen — in a breakthrough that offers a possible solution to global energy problems. The researchers claim the development could help unlock the potential of hydrogen as a clean, cheap and reliable power source.

Unlike fossil fuels, hydrogen can be burned to produce energy without producing emissions. It is also the most abundant element on the planet. Hydrogen gas is produced by splitting water into its constituent elements — hydrogen and oxygen.

But scientists have been struggling for decades to find a way of extracting these elements at different times, which would make the process more energy-efficient

and reduce the risk of dangerous explosions. In a paper published in the journal Nature Chemistry, scientists at the University of Glasgow outline how they have managed to replicate the way plants use the sun's energy to split water molecules into hydrogen and oxygen at separate times and at separate physical locations. Experts heralded the "important" discovery on Sunday, saying

it could make hydrogen a more practical source of green energy.

Professor Xile Hu at the Swiss Federal Institute of Technology in Lausanne, said: "This work provides an important demonstration of the principle of separating hydrogen and oxygen production in electrolysis, but, further developments are needed to improve the capacity of the system. But this research offers promise in making the storage of green energy cheaper." THE INDEPENDENT

The Times of India Delhi dated April 16, 2013

The Economic Times Delhi dated April 17, 2013

Domestic Solar Cell Makers Slam Govt for Failing Them

OUR BUREAU NEW DELHI

Indian manufacturers of solar cells and modules have lashed out against the government, complaining that authorities are not supporting the industry, which is incurring huge loss and is on the verge of shutdown. The domestic solar industry association is lobbying hard for anti-dumping duty on imports and greater policy support for indigenous products.

The solar cell and module manufacturing industry is currently operational at only 10% of its capacity. The industry blamed it on cheap imports from abroad.

Addressing the media for the first time, Indian Solar Manufacturer's Association (ISMA), an association of domestic solar cells & modules manufacturers, said it has asked the government for a clear policy for the domestic solar industry. For the second phase of the national solar mission, there are still no clear instructions for the project developers on the do-



Waiting for sunny days again

mestic equipment sourcing.

"Investment worth ₹10,000 crore has jeopardised because there is no headspace for the indigenous industry among the foreign players who are dominating the Indian solar market," said S Venkataramani, Indian Solar Manufacturer's Association (ISMA).

The current capacity of Indian solar manufacturing is roughly 1,000 mw of cells and 2,000 mw of modules. Most of the units, including Moser Baer, Lanco, Tata Solar have shut down their manufacturing capacity. Others like Indosolar have scaled down to 5-10%.

Domestic manufacturers also lodged a dumping case last year in January against China, US, Taiwan

and Malaysia at Directorate of Anti-Dumping (DGAD) and has sought anti-dumping duty in the range of ₹35-40 to be levied on products from these countries depending on the amount of dumping.

There are five Chinese, two each of Malaysia and Taiwan and one US-based solar company that have been put in dock by DGAD for dumping solar equipment in India.

In the first phase of the national solar mission, there was a domestic content clause, under which solar power project developers were supposed to source 30% of their equipment from domestic market. Just before the commencement of the second phase, the US solar industry has questioned this clause at the WTO stating that it's hurting their imports. Hence, the Indian government is reviewing the clause.

"This clause motivated many of our industries to establish world class manufacturing facilities with expandable capacities. More effective continuum of the policy will logically support the entrepreneurial decisions," said Venkataramani.

Deccan Chronicle, Hyderabad dated April 16, 2013

RTI STATISTICS

Despite green awards, Vizag most polluted

DC CORRESPONDENT

VISAKHAPATNAM, APRIL 15

The famous port town of Visakhapatnam happens to be one of the worst-affected towns in the state, as far as the environmental pollution goes, according to the official data recently retrieved by a city based voluntary organisation under the Right to Information Act.

The shocking revelation flies in the face of the Visakhapatnam Port Trust's tall claims about Vizag being "environmentally the best managed town" in the state. In fact, the situation is so serious that about 44 people died in the town in the past one year owing to the environmental pollution, according to a city based voluntary organisation.

"Out of total (44) death toll, as many as 10 were children who died due to respiratory problems and

Month	2009		2010		2011		2012		2013	
	RSPM	TSPM	RSPM	TSPM	RSPM	TSPM	RSPM	TSPM	RSPM	TSPM
Jan	108.1	235	181.8	373.9	105.9	233.2	106.2	215	111.3	226
Feb	78.2	199.4	176.9	363	148.5	354	126.9	279	156.9	338
Mar	77.2	202.8	120.5	297.3	120	267	50.8	134		
Apr	63.8	207.3	74.8	263.3	95	206	85.5	235		
May	88.3	234.9	79.6	212.9	118.1	257	83.2	225		
June	79.3	195.1	56.0	179.4	62.4	148	93.8	202		
July	71.8	172.9	66.9	160.5	79.5	134	54	149		
Aug	99.6	234	57.6	140.3	30.2	116	67.3	157		
Sept	89.8	194.1	67.9	147.2	40.2	95	44.3	108		
Oct	102.8	228.5	91.9	196.9	90.7	202	126.9	322		
Nov	99.8	225.1	65.8	141	82.3	205	78.5	173		
Dec	171	367.4	117.9	244.4	82.3	205	84.2	210		
Avg	93.23	224.71	99.02	226.84	89.43	203.52	83.48	200.83	114.50	282.00
Standard	40	60	40	60	40	60	40	60	40	60

The RSPM and TSPM concentrations during different months of the years from 2009 to 2013 recorded at the St Aloysius School in Visakhapatnam.

tuberculosis", said the president of Chaitanya Sravanthi, a voluntary organisation, Dr Shirin Rehman. "Shocking, the port authorities offered no help to the poor families whose members died due to the environmental pollution", she told this correspondent.

As per the data obtained

by her organisation from the AP Pollution Control Board and Andhra University, the port town is in the fierce grip of environmental pollution. And it is a dangerous kind of air pollution caused by the "repeated handling of coal and iron ore" at the port for the past several decades.

"The air of the port town is so badly choked by the thick layers of dust of coal and iron ore that it has become a permanent health hazard for the locals", said the members of Chaitanya Sravanthi.

Incidentally, the locations where the pollution was recorded also include various schools such as St Aloysius School, St John Paris School and others in Visakhapatnam.

As far as the pollution goes, the situation is indeed worrying. Sample this: the concentration of the total suspended particulate matter, the respirable suspended particulate matter recorded in various locations is 2-3 times more than the permissible limits. No difference is the case with the ambient air quality standards.

As per the data, the RSPM and TSPM levels increased fast since 2001 but was

recorded the highest in 2009-10. No wonder, if the environmental activists engaged in the research are worried. "The situation is indeed worrisome, so it is high time that the VPT authorities took urgent measures to mitigate the fast increasing environmental pollution in the town", Dr Rehman said.

Interestingly, the port of Visakhapatnam is accredited with the ISO Certification (ISO 14001) by the Indian Register of Quality Systems for Environmental Management standards in all its activities including related support services.

It also has an environmental monitoring committee that inspects the port.

The VPT is also the recipient of Greentech Gold award in 2007 and environmental excellence award (twice) for outstanding environment management.

The Economic Times Delhi
dated April 17, 2013

Bring in Smart Policies, Clear the Air on Clean Energy



Jamshyd Godrej

Ministers are gathering in New Delhi on Wednesday to address an urgent challenge: how to unlock the full potential of clean energy to drive economic growth, expand energy access and protect the climate. The 4th Clean Energy Ministerial — which brings together energy ministers and other delegates from over 20 leading economies — is a critical opportunity to inject new life into the global clean energy transition.

While we've seen progress on renewable energy, the sector still faces barriers to increase financial support and create strong national policies that will enable it to flourish.

First, some good news: The renewable energy market has blossomed in recent years. In just the last decade, global clean energy investment has increased five-fold, from \$50 billion a year to over \$250 billion. And more than 100 countries have renewable energy targets in place.

India has set itself on a remarkable journey by ushering in renewable energy growth. The National Action Plan on Climate Change, launched in 2008, aims to have 15% of India's electricity consumption from renewable energy by 2020. Currently, the country produces slightly more than 12% of its energy from renewables, putting it on track to that goal. India

has been using various policy levers to advance renewable energy, including tax and generation-based incentives, capital subsidies and feed-in tariffs. The Renewable Portfolio Obligations is also providing support for renewable energy developers.

Even so, the country is not yet achieving its full potential — which is critical for 400 million people who lack access to basic electricity.

Falling Short

The same story is played out around the world, where renewable energy deployment is falling short of what's needed. Private equity and venture capital investment in renewables dropped by 34% in 2012. While much of this has been a result of reduced government support and falling technology prices, more can be done to drive investment into this sector.

When it comes to the global policy environment, there is a lack of strong and consistent policy signals. According to a recent analysis by World Resources Institute, countries with comprehensive, predictable and targeted policies have seen the greatest success in scaling up domestic installation and manufacturing capacity. More countries need to adopt such policies.

Further, excessive fossil fuel subsidies are distorting energy markets. The IMF just released an analysis that found that the total value of fossil fuel subsidies worldwide is nearly \$2 trillion, including direct subsidies and "mispriced" fossil fuels. While it's true that subsidies targeted towards the poorest consumers are often necessary, these broad-based subsidies are buoying the mature fossil

fuel industry, while holding back rapid expansion of clean energy.

Innovations Needed

The barriers can be overcome. What's needed is to set the right policies that will create a stable investment environment and drive innovation. Beyond policy measures, clean energy deployment calls for government officials, regulators and businesses to truly shift their mindset when it comes to clean energy.

One innovative example is the Green Power Market Development Group in India. A already, more than seven businesses representing over \$450 billion in market value have joined this group. The goal is to enable corporate buyers to access reliable and clean energy, while diversifying their energy portfolios and reducing their impact on climate change. This group is developing procurement models to help large industrial and commercial energy consumers get more value from using renewable energy. These strategies can drive down costs and overcome challenges of fragmented demand.

Other exciting examples are emerging like Husk Power, a company that provides affordable electricity to rural communities through rice husks. The Clean Energy Ministerial should help drive such innovations. It can enable smart policies, improved regulatory framework and private sector leadership. Ministers and other delegates should also work towards mobilising financial re-

sources, increasing access to data and developing new tools to accelerate the use of best practices.

The ministerial should break down barriers and inject renewed momentum in clean energy development.

With ANDREW STEER
Godrej is chairman and MD, Godrej & Boyce Mfg Co Ltd, and Steer is president & CEO, World Resources Institute

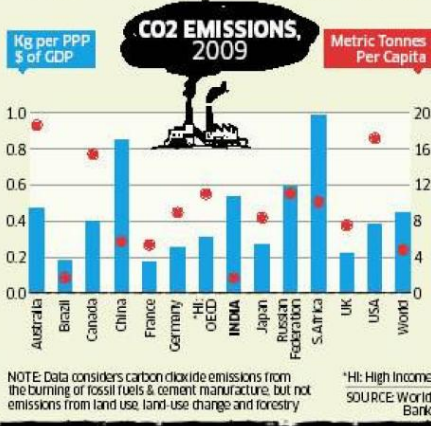


The Economic Times Delhi
dated April 18, 2013

Govt Talks of Incentives for Clean Energy Ventures...

Top Carbon Dioxide Emitters

Historically, the West has been responsible for the bulk of greenhouse emissions while the share of emerging countries has gone up only in the past few years. Here's a list of main carbon dioxide emitters:



PRESS TRUST OF INDIA
NEW DELHI

Prime Minister Manmohan Singh on Wednesday pitched for subsidies for clean energy saying market forces alone would not be able to finance it. He also voiced concern over "painfully slow" progress in climate talks and said the goal of stabilising global temperatures was "nowhere in sight". He urged individual countries to take action to increase energy efficiency.

Singh was speaking at the Fourth Clean Energy Ministerial attended by energy ministers from 20 major economies.

Highlighting critical issues in promoting expansion of green energy, Singh said investments in the sector were subject to technological, commercial and regulatory risk. "For the moment green energy is not viable on its own without subsidy or regulatory incentives. Investors obviously need assurance that these incentives will continue," he said.

The pace of reliance on new energy sources was constrained by the fact that they were more expensive than conventional energy, he said.

The costs of solar energy had nearly

For the moment, green energy is not viable on its own without subsidy or regulatory incentives. Investors obviously need assurance that these incentives will continue

MANMOHAN SINGH
Prime Minister

halved over the last two years, but was still higher than the cost of fossil fuel-based electricity, he said.

Singh said India was keen to ensure induction of the best technology and also to encourage domestic production of the equipment needed for adding solar capacity. He urged global manufacturers to set up production facilities in the country in this area.

The prime minister said India was also re-assessing its wind potential in both onshore and offshore areas to draw a long term plan for exploiting this source of energy.

He said the country has proposed to double renewable energy capacity in the country from 25,000 MW in 2012 to 55,000 MW by 2017.

The Economic Times Delhi
dated April 18, 2013

Phase Out Mining in Western Ghats: Panel

Recommends notifying region as Ecologically Sensitive Area

OUR BUREAU
NEW DELHI

A panel appointed by the environment ministry has recommended phasing out mining in five years, and disallowing thermal power stations and new townships in 60,000 sq km of Western Ghats, or 37% of the biologically diverse region.

The working group headed by Planning Commission member and former ISRO chairman K Kasturirangan has made this recommendation in its "pragmatic action plan" for conserving and preserving the ecologically sensitive region.

It has suggested that the area spanning 1,500 kilometres across the western peninsular region be notified as "Ecologically Sensitive Area". The contiguous area comprises 4,156 villages across six states. It has high biological richness, and low population density. It also contains protected areas, World Heritage Sites, and tiger and elephant corridors.

The 10-member panel has also recommended that all other infrastructure activities in the area be permitted only after

careful scrutiny and assessment of the project's cumulative impact and development need. The report was submitted to environment minister Jayanthi Natarajan on Wednesday.

"The message of this report is serious, alarming and urgent. It is imperative that we protect, manage and regenerate the lands now remaining in the Western Ghats as biologically rich, diverse, natural landscapes. We have reached a threshold from which we cannot slip further. This has to be the objective of future planning and regulation in this recognized centre of biodiversity in our country," Kasturirangan said.

The working group was constituted in August to advise the ministry on the recommendations of another environment ministry appointed committee—the Western Ghats Ecology Expert Panel headed by ecologist Madhav Gadgil.

The Western Ghats Ecology Expert Panel had categorised the entire region in three levels of environmentally sensitive zones and prescribed different levels of regulatory measures for the protection of each of these zones.

Deccan Chronicle, Hyderabad dated April 18, 2013

Slow climate talk pace upsets PM

RASHME SEHGAL | DC
NEW DELHI, APRIL 17

Expressing concern over the inordinately slow pace of climate negotiations, Prime Minister Manmohan Singh regretted that the "goal of stabilising global temperatures at acceptable levels was nowhere in sight".

Dr Singh, therefore, felt that the time had come for individual countries to increase their own energy efficiency.

Inaugurating the Fourth Clean Energy Ministerial meet being attended by energy ministers of 20 leading economies, Dr Singh



PM Manmohan Singh greets US Energy Secretary Steven Chu at the inauguration of the fourth Clean Energy conference in New Delhi on Wednesday.

— PTI

warned against developing countries following the unsustainable energy route that had been adopted by industrialised countries. "Developing countries account for 82 per cent of the world's population but use (only) 55 per cent of the available global supply of energy," he said.

The Economic Times Delhi dated April 19, 2013

Green buildings: The way ahead

Buying a green home does not mean buying a home surrounded by gardens. Instead, it means that the project is registered with the IGBC and compliant with IGBC norms/guidelines for green buildings

VANDANA SINGH

Today, global warming is a major threat to our environment. Global warming is proportional to CO2 emissions into the environment. The development of a green sustainable building is a vital step in decreasing the use of artificial resources and fossils. This, in turn, increases the use of natural resources, helps in reuse and recycling of the same.

While the practices or technologies employed in the construction of a green building are constantly evolving and may differ from region to region, there are fundamental principles that remain common, from which the method is derived. The Leadership in Energy and Environmental Design (LEED-INDIA) Green Building Rating System, is a nationally and internationally accepted benchmark for the design, construction and operation of high performance green buildings. In India, the Indian Green Building Council (IGBC) in association with LEED, is the certifying body for green buildings.

BENEFITS OF GREEN HOMES

A green home can have tremendous benefits, both, tangible and intangible. The immediate and most tangible benefit is in the reduction in water

usage and operating energy costs right from day one, during the entire life-cycle of the building.

While working on a green project, a developer must take into consideration the following aspects: reduced dependency on virgin materials, proper site selection and planning, indoor environmental quality, innovation and design process and reduced use of fossil fuels. With an enhanced need for environmental protection, it is advisable to design buildings with extra sensitivity as the real estate sector contributes as high as 30 per cent to global pollution.

According to Vikas Gupta, director, Earth Infrastructure Ltd, "Green development is an eco-friendly concept that includes consideration of environmental implications of development. Green sustainable buildings are fundamentally better and are more comfortable, more energy efficient and save cost in the longer run. They also ensure healthy living of the occupants of the building."

Gupta added, "The architecture and design should focus on passive heating and cooling methods, so as to utilise natural energy and minimise the use of artificial resources. Even the interiors have energy efficient features like insulated rooftops, wooden door frames and terrace gardens. The



whole idea behind green construction is to reduce the carbon footprint. It is important to note that buying a green home does not mean buying a home surrounded by gardens but the same should be registered with the IGBC and compliant with IGBC norms/guidelines. We are a member of the IGBC. Green development strategies include energy and water

efficiency, use of sustainable material, on-site water management, healthy indoor air quality, building preservation and reuse of natural resources. We have been building all our projects on the basis of guidelines from LEED India."

Anil Mithas, CMD, Unnati Fortune Group, also shares about their project 'The Aranya', wherein, they have used

green technology to build the project. "The Aranya, is a multi-storied residential project that is aimed at green living for its residents, by ensuring enhanced air quality, day lighting, etc., that qualifies as per IGBC's Green Homes rating system. Also, it is designed to achieve low heat intake, thus, reducing the need for air-conditioning. It has a climate

TANGIBLE BENEFITS

- Energy savings: 20-30 %
- Water savings: 30-50%

INTANGIBLE BENEFITS

- Enhanced air quality
- Excellent day lighting
- Health and wellbeing of the occupants
- Conservation of scarce natural resources
- Enhanced valuation of the investment

Courtesy: IGBC

responsive design and high performance glass roof and walls that have been incorporated from the design stage. The whole complex has been constructed with eco-friendly technology and recycled material, with low volatile compound emission."

He goes on to add how "Most of the Asian countries, especially India, is a water-stressed zone. The water levels have reduced drastically over the decade. In such a scenario, it helps when green technology allows the use of water in a self-sustainable manner through reducing, recycling and reusing strategies that saves up to 30-50 per cent water."

To encourage green buildings, the Noida Authority has decided to reward developers who have opted for eco-friendly construction by giving them five per cent Floor Area Ratio (FAR) for free. In the last six months, layout plans of around 20 buildings that have been designed completely on the green concept, have been approved by the Authority.

The Times of India Delhi
dated April 19, 2013

Clean energy group to clear fin hurdles

New Delhi: The 23-nation grouping on clean energy on Thursday decided to chalk out ways to clear the financing hurdles that have halted progress of the initiative.

"We discussed as to what are the constraints and what can be done... We are thinking of preparing a paper on what are the issues of financing. One of the issues may be international funding," deputy chairman Planning Commission Montek Singh Ahluwalia said after the two-day Clean Energy Ministerial meet. "Actually, how to mobilise private finance, not just globally but internally is very important," he added.

The meet saw participation from 23 nations that represent 90% of the global clean energy investment. Ahluwalia said the paper would be prepared by the secretariat before being put up for discussion at the fifth meet to be held in Korea next year. AGENCIES

The Times of India
Delhi dated
April 20,
2013

Since '04, 6L hectares of forest cleared for mining

Nitin Sethi | TNN

New Delhi: Rejection of big-ticket mining proposals such as Vedanta has been a rare exception in the UPA's nine-year reign. The UPA has given clearance to cut a whopping six lakh hectares of forests — of these more than 2.5 lakh hectares were for mining — since it came to power in mid-2004.

The data, accessed by TOI from the environment ministry, shows that the in-principle and final clearances add up to the combined area of Delhi, Mumbai, Kolkata, Chennai and Bangalore, or roughly the equivalent of three large tiger reserves.

In comparison to the vast tracts that have been permitted to be cleared, the UPA has rejected proposals for less than 14,000 hectares out of which only about 11,000 hectares were for mining in forestland. In fact, only 13 rejected mining projects were for more than 100 hectares — Vedanta being



SHRINKING GREEN COVER

one of them. Most rejected cases have been less than five-hectare proposals, ranging from minor mining to hospitals and petrol pumps. The big ticket cases have almost always sailed through in the end.

Any project requiring forestland needs to secure a forest clearance under the Forest Conservation Act, 1980. The state governments prepare the proposal upon receiving request from the project developer and send it to the ministry for clearance. The statutory Forest Advisory Committee (FAC) recommends a case to the Centre, what is known as the Stage-1 clearance in the bureaucratic parlance. Once the ministry is assured that

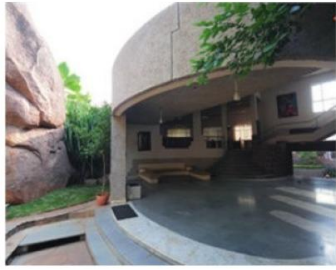
the Stage-1 norms have been met, it gives the final clearance to the state government permitting it to hand over the forest to the project developer. While the industry has often complained of delays in these clearances — and the back and forth causing inordinate hold ups — the data portrays a contrary picture. In a vast majority of cases, the projects have eventually got a nod. Most in-principle clearances have also got the approval.

Cases, adding up to around 37,500 hectares, have been eventually closed in the UPA tenure so far. The ministry classifies cases as closed, when state governments are unable to provide information sought for clearance. In comparison, the rejected cases can always be revived with some changes. Government records show that states do send back cases that have been rejected and some of them get a nod after a while.

For the full report, log on to www.timesofindia.com

Deccan Chronicle, Hyderabad dated April 21, 2013

Close adherence to climatic requirements



CCMB LaCONES
The campus has been designed in a way that the natural rock formations get highlighted

DC CORRESPONDENT
HYDERABAD, APRIL 20

The CCMB-La CONES Campus situated in the heart of the city is the sprawling and delightful campus of the Laboratory for the Conservation of Enda-

ngered Species at Hyderguda near Attapur. The institute is an annexe of the Centre for Cellular and Molecular Biology. It is also a remarkable departure from the present architectural trends which seldom pay attention to regional sensibilities and climatic requirements. The sensitivity shown by the architect in retaining rock formations is a unique feature of the campus. It has been designed in a

way that the natural rock formations get highlighted. "The campus has been awarded with an honour in Open Spaces category," said the administrator of the Society to Save Rocks, Frauke Quader. Shrish R. Beri designed the campus. He evolved a concept of the earth being a ball of fire and later cooling down to form spectacular rock formations like in the Deccan Plateau.

Deccan Chronicle, Hyderabad dated April 22, 2013

Depleting ground water levels cause grave worry

DC CORRESPONDENT
HYDERABAD, APRIL 21

Life has hit rock bottom for Lalu Naik, a small time farmer of a tribal hamlet near Maheswaram on the outskirts of the city. For the first time in two decades the bore-well in his field has run dry leaving his entire paddy crop to wither away.

Over exploitation coupled with bad monsoon last year has resulted in depletion of groundwater not only in Naik's farm but across the country.

India has the dubious distinction of ranking top among 10 countries where 72 per cent of the global groundwater abstraction

takes place. UN World Water Development Report-2012 states that India's ground water abstraction is 255 cubic kms per year followed by China and US with 112 cu km each and Pakistan at 64 units.

With surface water supply remaining stagnant, nearly 84 per cent of the total addition to the net irrigated area comes from groundwater.

The Planning Commission has warned the country that "with an estimated 30 million groundwater structures in play, a serious crisis of groundwater over-extraction and quality deterioration is seen."

National Aeronautics and Space Administration

states that the country has lost about 109 cu km of water leading to a drastic decline in the water table to the extent of 0.33 meters per annum. In the absence of any regulatory mechanism, individual land owners dig wells as deep as 500-1000 ft affecting the flora and fauna. Regulations like Water, Land and Tree Act have proved to be ineffective.

"It is high time the government focuses on making groundwater available by re-charging it rather than talking of stringent regulatory mechanisms," says T. Hanumantha Rao, veteran engineering expert and a former UN consultant.

GROUND WATER SITUATION

State	areas	critical	over exploited
AP	1125	77	219
TN	384	33	142
Karnataka	175	3	65
Kerala	154	15	5
Maharashtra	231	7	1

POTENTIAL WATER SAVING

Efficiency Measure	Water Saved (%)
Closed loop recycling	90
Closed loop recycling with treatment	60
Automatic shut-off	15
Counter current rinsing	40
Spray/jet upgrades	20
Reuse of wash water	50
Scrapers	30
Cleaning in place (CIP)	60

Deccan Chronicle, Hyderabad dated April 22, 2013

AP witnesses decline in green cover, Hyderabad is worst hit

DC CORRESPONDENT
HYDERABAD, APRIL 21

Green cover is dwindling rapidly in the state, and Hyderabad is the worst hit when compared to other cities, according to data released by the Forest Survey of India and the AP Forest department.

In just one year, the state has lost tree cover of the size of Vijayawada city, or about 45.34 sq km.

According to Forest Survey of India-2011 Hyderabad and Ranga Reddy have only five per cent of forest cover at 391 sq km out of the total area of 7,710 sq km.

AP State of Forests 2012, a recent report by the state

GOING BROWN		
AP forest cover (in sq km)	2009	2010
Very dense forest	931.73	931.73
Moderately dense forest	18418.53	18408.48
Open forest	22686.57	22651.28

Figures in square kilometres

government, disclosed that moderate dense, scrub forest and open forest areas are being converted into non-forest areas. It is revealed that there is degradation of forests from higher canopy density class to lower canopy density class in 70 sq km. Around 36.44 sq km of forests was lost due to encroachments and 16.29 sq km due to clearance of jungles for raising planta-

tions and diversion of forest land for other purposes. In the report, principal chief conservator of forests S.V. Kumar blamed the loss on pressure from human as well as cattle population. Environmentalist Devidas Mangani said habitat loss would affect biodiversity. Hyderabad should go for more green options and tree felling should be stopped immediately."

Deccan Chronicle, Hyderabad dated April 22, 2013

ELDERLY TURNS SAND DUNE 'GREEN'



Jodhpur, April 21: Turning a sand dune into a green garden might seem like a difficult task, but septuagenarian Ranaram Bishnoi of Ekalkhori village has single-handedly achieved this and planted over 27,000 trees in a village near here.

He climbs a high sand dune every alternate morning and waters the trees he has planted in 25 bigha land with a large earthen pitcher.

For this, he has to walk 3 km to reach the dune from his house, climb it, go down the other side to fetch water from his friend's tubewell and mount it back, defying his age. He has planted indigenous trees like Neem, Rohida, Fog, Khejadi, Kankeri and Babool. — PTI

Proper rainwater harvesting needed

TIMES NEWS NETWORK

New Delhi: In 2012 CM Sheila Dikshit said that rainwater harvesting, which had been made mandatory in Delhi more than 10 years earlier, had failed to take off in the city. There were some co-operative societies and individuals who took up the initiative but piecemeal efforts made no difference to the city's falling groundwater levels.

Groundwater levels have been falling consistently over past several years and despite a ban on constructing borewells without permission from Delhi Jal Board, illegal extraction of groundwater has been taking place. A Central Ground Water Board study showed that between November 2011 and November 2012, 96 of the 119 wells that were inspected showed a fall ranging from a few centimetres to more than 4m. Several wells in southwest and south Delhi have gone dry.

Finally the government has chosen to act. It has simplified the permission procedure and has increased the grant to those who undertake rainwater harvesting. South and southwest

districts will soon have two agencies that will undertake the work for getting clearance for rainwater harvesting. "In each district, 100 built-up areas of 2,000 sq m or more will be taken up for the work."

The agencies will identify places where rainwater harvesting is possible, provide technical designs, get approvals that include financial assistance from the government. This will simply the procedure

PIECEMEAL STEPS

for getting rainwater harvesting," said a DJB official.

DJB is also giving a 10% rebate in bills to those individuals or societies that undertake rainwater harvesting and a penalty might be put in place for those for whom rainwater harvesting is mandatory and they haven't done it.

"Delhi is a water starved and it is shameful that each monsoon there is waterlogging whereas all this water could have been diverted to rainwater harvesting structures," said Jyoti Sharma, president of NGO FORCE.

The
Times of
India
Delhi
dated
April 22,
2013

Deccan Chronicle, Hyderabad dated April 22, 2013

Nation debates if water is an economic good

■ With experts projecting 2030 as the D-day for shortage of this resource, alarm bells are ringing

N. VAMSI SRINIVAS | DC
HYDERABAD, APRIL 21

The Centre's declaration for the first time that water must be used as an economic good in its Draft National Water Policy 2012 has sparked off wide debate across the country.

The NWP says, "After meeting the minimum quantity of water required for the survival of human beings and the ecosystem, water must be used as an economic good with higher priority to livelihood support to poor and ensuring national food security."

Several Non Governmental Organisations and political parties have cried foul over the government deviating from its previous NWP 2002, the very opening sentence of which read: "Water is a prime natural resource, a basic human need and a precious national asset." These vociferous sections see an ulterior motive in the government's declaration—to privatise the very same water resource and the new policy as only the beginning in this journey.

The availability of this limited resource has reached an alarming situation, with D-day being as close as 2030 and demand for it ever increasing. It is a reminder to citizens of their duty to be responsible when using it.

"Water, a social good when it is meant for use, shall not remain the same and must be treated as economic good when it is misused or wasted," says Prof. V. Srinivas Chary, director of the Centre for Energy, Environment, Urban Governance and Infrastructure

STATE'S RECOMMENDATIONS ON WATER POLICY



- Priority of water use may vary from state to state due to geographical location. It is necessary to fix priority areas for allocation by respective states.
- Regulation and development of inter-state rivers and river valleys may be brought under control of Centre.
- Water Users Associations shall be made accountable for supply of water to agriculture during peak demand period.
- Word "equitable manner" shall be deleted from the clause that a permanent water disputes tribunal at Centre should be set up to resolve disputes expeditiously and equitable manner Public Private Partnership is not suitable for irrigation.

Development, ASCL

The NWPs of 2002 and 2012 are self-explanatory on the grim situation. The availability of utilisable water in the country was 1,123 billion cubic meters (BCM) in 1993 and in 2013, but population increased from 85 crore to 124 crore in the interim and the irrigated area grew to 105 million hectares from 68 million hectares, both indicating increasing levels of water consumption.

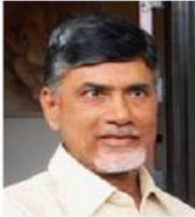
The Planning Commission too has pressed the alarm bells in its draft 12th Five Year Plan. Quoting the 2030 Water Resources Group, the Commission said, "If the current pat-

tern continues about half the demand for water will be unmet by 2030."

The Andhra Pradesh state water policy, brought out by the Irrigation department states that the remaining water resources amount to 103 BCM. "The current trends of increase in water supply from all users will outstrip the available supplies by 2025."

The Irrigation sector, which takes more than 80 per cent water in the country and 93 per cent in AP, is also marred by the low levels of water use efficiency.

In Hyderabad, where the average supply of water to every household is below two hours against 24x7



Water, as a resource, is extremely limited and has a serious bearing on human lives. It is suggested that the format of public-private partnership in building the Golden Quadrilateral in the roadways sector should also be extended to fully exploit the irrigation potential of our river systems.

— N. Chandrababu Naidu during his December 21, 2002 speech as AP CM at the 50th National Development Council Meeting in New Delhi

supply in many cities in less developed countries, like Colombo and Jakarta, a huge gap of 150 MGD per day persists between demand and supply.

An interesting phenomenon the world over has been experiencing, the switchover from private management of water sources to public and vice-versa, with the exception of United Kingdom, where privatisation has taken place from source to supply since the Margaret Thatcher era.

The public sector versus private in water distribution gained significance, with draft National Water Policy 2012, laying empha-

sis on water pricing and private participation in distribution. The policy stressed the need for the "service provider" role of the state to gradually shift to that of a regulator transferring the services to "community and/or private sector" with appropriate PPP models.

"The Paris city government, in France, took back water management system 70 years after privatising the same. On the contrary, the growing economies, like India and China, are opting for partial privatisation," pointed out Prof Srinivas Chary.

"The Central Electricity Act 2003 envisages choice to the power consumers also to pick the service provider on the lines of the telecom sector," said P. Kodandaramaiah, an energy consultant. The NWP also would have come out with specific road map, for privatisation in water sector, and allowing multiple players, he added.

The pro privatisation groups cite the examples of effective power supply in metros, like Mumbai and Kolkata, where distribution is with private sector and uninterrupted supplies ensured for the busiest metro rail services.

"The governments can experiment with privatising the operation and maintenance, while retaining the source as national property," suggests Prof Chary adding that the Shanghai, China, experiment is more interesting as the government staff work along with their counterparts to understand and implement better management practices.

VIEWS AND REVIEWS

“If the current pattern of demand for water continues, about half of the demand for water will be unmet by 2030.”

— PLANNING Commission of India

Policy considers water to be a human right, but in a dangerous form by entitling each individual to a particular quantity of water (60 litres per day in rural areas and 135 litres in city). The rest will be commercialised.

— RANJAN PANDA, convener of Water Initiatives.

While in conformity by and large with the provisions of the new policy, the state government wanted the Centre to incorporate effective mechanisms that will protect the interests of lower riparian states.

— AJOYENDRA PAL, special chief secretary, Irrigation, AP

The water policy shall concentrate on recharging of ground water source instead of restricting its use because dependence on ground water is inevitable.

— T. HANUMANTHA RAO, former engineering consultant of United Nations.

Water must be treated as an economic good when it is misused or wasted.

— PROF V. SRINIVAS CHARY, Environment, Urban Governance, and Infrastructure, ASCI



File photo of people filling water from a water tanker.

Multiple service providers can be and shall be allowed to operate in energy and water sectors also on the lines of Telecom. Privatisation is the only panacea for the sufferings of the consumers in the hands of inefficient and populist public sector.

— P. KODANDARAMAIAH, energy consultant

The Times of India Delhi dated April 22, 2013

Renewable power use short of requirement

TIMES NEWS NETWORK

New Delhi: Delhi has a renewable power obligation of 2% which means that of its entire power supply, 2% must come from renewable sources. Of this, 0.25% should be solar power. This power Delhi may purchase or produce itself but sources say that it will take another 2-3 years before discoms are able to implement this.

Delhi has a peak demand of about 5,000MW which means that it would need to source 12.5MW through solar. However, its present capacity is about 2MW. The government has been focusing on commercial buildings, schools, hospitals and its own office so far but with prices of solar equipment having fallen in past six months and the government anticipating a lesser price difference between conventional power and solar power, environment



PROMOTING DOMESTIC USE

department officials say they will shortly start promoting it for domestic usage as well.

For solar water heating, there was a subsidy being provided by Delhi government and another by the ministry of new and renewable energy. While the latter is continuing, the one by Delhi government is under review. "We started this subsidy in 2008 and wanted to see how it was working. It has not been stopped and is only under review," said sources in the environment department.

Due to its location, Delhi can adopt only solar power and because of land shortage, it can go for only roof-top panels. A policy was being planned for domestic users wherein they could produce solar power on their rooftops and feed the additional power into the grid. The policy was shelved and the domestic potential in Delhi has been largely untapped.

China-like smog staring in eye

TIMES NEWS NETWORK

New Delhi: With close to 1,500 vehicles being added to its streets daily, Delhi is staring at a China-like crisis where smoggy conditions will be a daily feature. Polluted air had, in fact, been the norm till the early 2000s after which public transport moved to CNG and there was a drastic improvement in air quality. That, however, is being lost thanks to the massive number of private vehicles now plying on Delhi's streets.

Experts say that the only way to deal with the issue is to move to public transport. For that, the government needs to provide a convenient and integrated system of public transport.

Delhi government claims it needs 11,000 buses to meet the city's demand. Right now, there are only 5,000 buses operational of which 4,500 are DTC operated. There is no deadline fixed for when the remaining will be acquired.

Delhi Metro has come as a boon for several travellers but that has not resulted in any decrease in private vehicles which has led to the argument that it is bus travellers that have moved to the Metro.



WAY AHEAD: Experts say a switch to public transport is imperative

"Delhi Metro is, without doubt, Delhi's pride. However, can the city afford such a system. Speaking from an environmental perspective, the Metro has dug into the city which must have impacted groundwater and groundwater movement, led to a massive loss in the green cover. It has not even led to a fall in cars. Most roundabouts

in Delhi now either need to be manned by a traffic cop or are witnessing the installation of red lights on them. This speaks for itself to point out the traffic mess," said Govind Singh, director, Delhi Greens.

Meanwhile, say experts, a good idea will be to car pool or cycle and walk if one needs to go a short distance.

The Economic Times Delhi dated April 22, 2013

The Times of India Delhi dated April 22, 2013



Is genetic modification of plants in the best interests of humanity and the planet's biodiversity?

How Green is My Planet?

NILAKSHI SHARMA

When we think of environmental issues we tend to think of pollution, especially from waste material, we tend to think in terms of carbon fuel sources such as coal and oil. Rarely do we think of the environment and agriculture in the same category. And yet, this is where an impending disaster looms; the threat to the crux of our environment - the planet's biological diversity a.k.a biodiversity. Simply put, the term biodiversity refers to the variety of life found on Earth and all of the natural processes. This includes ecosystem, genetic and cultural diversity. At stake today is the green biodiversity or the ecosystems of flora.

As the human population continues to grow at an unprecedented rate generating enough food is a legitimate concern. And it is using the narrative of increasing food production that a new category of threat has emerged - Genetically modified crops (known also as GMCs/ GM crop or biotech crop).

These are essentially plants the DNA of which has been altered using genetic engineering techniques. The justification for this genetic manipulation is two-fold - on the one hand GM crop is bred to resist pests; the other touted

benefit of the GMC is that they have a higher yield. So how does genetic modification achieve its stated aim?

The first method involves the introduction of a toxic gene Bt, the successful presence of which is ascertained through the injecting of an antibiotic resistant marker. The second method of genetic alteration involves breeding a genetic mutation that makes the plant resistant to a specific herbicide - Glyphosate, which can then be sprayed to control the pests.

But the truth is somewhat different. After decades of GM crop harvests certain facts have become incontestable according to community of scientists, researchers, farmers and concerned citizens: GMCs not only fail on the two stated benefits of GMC (higher yield and pest resistance) but pose a substantial health risk, the complete adverse impact of which is yet to be fully acknowledged in the mainstream narrative.

Between the arguments and counter arguments here are some things that are known; as of 1st January, 2013, Indian law makes it mandatory that all the primary or processed foods, food ingredients, or food additives derived from GM food be labelled accordingly, and that imported GM foods indicate the status of approval in the country of origin. This is decades after such labelling was made mandatory in the EU.

A very long and successful campaign was fought by activists to prevent the introduction of the GM Brinjal - Bt Brinjal - in India, the country that has 4,500 traditional varieties of Brinjal. Biopiracy has also arrived and threatens to patent our traditional knowledge and use of plants such as Neem.

The farming of GM crops has also led to a marked increase in the birth of super weeds - weeds that are resistant to the herbicides currently used, and in the rise of insects who have become resistant to the Bt toxin. As an aside, the promise of a genetically modified utopia of harvests does not take into account the delicate balance that governs a typical ecosystem. So crops tend to be planted with an eye on profitability of harvest as opposed to factoring in considerations such water, which is now a critical resource. Last but not least farming with GM crops puts at risk the traditional flora because of the toxic gene mutation and the chemical pesticides that linger in the soil and seep into the ground water.

Science is an agent of development and change but it would be foolish to pretend that the development is always beneficial; often what is touted as the scientific eureka of today is discredited by the next scientific discovery. When it comes to genetic modification of food the implementation needs to be even more cautious given that at risk is the permanent, artificial mutation of the very source of life - earth's biodiversity.

Tree laws tough on paper, but not on the ground

TIMES NEWS NETWORK

New Delhi: Delhi probably has some of the most exhaustive set of rules for trees. It is not alright to cut a tree if it is blocking the sun and it is not fine to chop one off because it may be attracting insects or noisy birds. If the offence is discovered, and such cases are coming to light more frequently because of ever-active tree activists, you might find yourself in jail.

The plight befell a Vasant Kunj RWA president when he allegedly had an entire patch of trees cleared for making a parking lot. "So far it has been impossible to make people and civic agencies understand there are procedures for cutting or pruning trees. When we permit light prun-



NO BREATHING SPACE

ing, heavy pruning or lopping is done. There is a tree helpline and our contact details are on the forest department website. If a contractor is unable to produce a permission letter, we urge people to report the matter to us," said a forest department official.

Aditya Prasad recently

filed a case in the National Green Tribunal asking for implementation of rules regarding concretization around tree. "The rule has been in place since 2007 but trees are being choked rampantly in violation of the Delhi Preservation of Trees Act, 1994, and the Environment Protection Act, 1986. The case is up for hearing on April 23," he said.

A tree authority was set up in Delhi in 2007 but despite its presence, violations continue unabated. It has in fact not met in the last six months though it is supposed to come together every three months. "Government agencies and Delhi Metro are responsible for the maximum number of trees being felled in the name of development projects," said an activist.

Deccan Chronicle,
Hyderabad dated
April 23, 2013

Global warming highest in 20th century, claims study

Melbourne, April 22: Global warming over the 20th century has produced the hottest global average temperatures in 1400 years, a major scientific study has found.

Scientists have found that the period between 1971-2000 was warmer than any other time in nearly 1400 years.

The first continental-scale reconstruction of tempera-

tures over the past 2000 years by an international team of scientists has highlighted the unusual nature of the 20th century warming.

Recent warming reversed the long-term cooling, during the period 1971-2000, when the average temperature was higher than any other time in nearly 1,400 years, according to the study published in *Nature*

Geoscience.

Researchers, combing Northern and Southern Hemisphere temperature reconstructions, found that the 20th Century warming is a global event that has produced the hottest global average temperature in 1400 years.

This is in stark contrast to the Medieval Warm Period and Little Ice Age, which the study revealed. — PTI

The Economic Times Delhi dated April 23, 2013

Sustainable Biz: Still Miles to Go Before Unilever Can Cheer

Co has succeeded in sourcing raw materials sustainably, but yet to make big impact in waste, water and greenhouse gases

AHONA GHOSH
MUMBAI

In 2010, Unilever, the €51-billion consumer-goods major, laid down a path to become a more responsible corporate citizen in what products it made, how it made them and how consumers used them. The second progress report of the Unilever Sustainable Living Plan, released worldwide on Monday, shows the company has achieved significant milestones in areas like sourcing raw materials, but is struggling to make big impact in waste, water and greenhouse gases.

Sustainable sourcing of raw materials is one area where Unilever has shown tangible results in 2012. According to the company, 100% of its palm oil is now sourced 'sustainably', three years ahead of schedule. What this means is that each of its palm oil suppliers meets 11 requirements — certified by an independent agency — such as not employing child labour, providing fair wages and minimising use of water and pesticides.

Unilever has also made significant progress in sourcing tea (Lipton brand, 75%) and cocoa (Magnum brand, 64%). Its Indian arm, Hindustan Unilever (HUL), procures 60% of tomatoes for its Kissan brand of ketchup from sustainable sources, for which it has joined hands with the Maharashtra government to work with 618 farmers.

Unilever's goal is to source 100% of raw materials sustainably by 2020. In 2012, that figure was 36%, up from 24% in 2011. "This (the sustainability drive) will enable us to decouple business growth from resource use and re-couple it with societal good," Nitin Paranjpe, CEO of HUL, told ET a day before the report's release.

It also makes for good business. For example, since 2008, Unilever has saved €300 million in costs through eco-efficiency programmes in manufacturing operations, which is part of a plan to halve its environmental footprint by 2020. Initiatives ranged from small

actions like ensuring lights are turned off to larger investments such as biomass boilers.

But, along with tangible successes, there are challenges. The biggest challenge is how to change consumption habits of its consumers. For example, laundry and bathing account for 77% of Unilever's water footprint. But consumers are still using the same amount of water while using a Unilever soap or detergent as they were in 2010. "One of the things we realised is changing human behaviour is not easy," says Paranjpe.

Towards this end, the company is stepping up efforts to find new business models to drive product innovation and research. For example, its detergent Comfort One Rinse reduces the water needed for laundry and performs well in shorter wash cycles. Another



The biggest challenge faced by Unilever is how to change consumption habits of its consumers

innovation, a dry shampoo, launched in the UK and the US, encourages people to wash their hair with hot water less often. Sales of dry shampoo grew 19% in 2012. In order to drive consumer adoption of such products, Unilever entered into a partnership with UK retail chain Tesco called 'a better future starts at home', wherein it offers consumers advice on sustainable living and promotions of sustainable products.

In India, HUL has a similar tie-up with Walmart, where it incentivises customers to bring back recyclable packing to the store in return for a discount coupon. Further, it is now converting used packaging material waste to fuel, through a pyrolysis process. "We have tied up with cement companies (to burn the waste in cement kilns) for this and are working with technology partners to convert packaging material to fuel," says Paranjpe. Hindustan Unilever is also working on replacing fur-

nace oil in its factories with fuel from packaging waste, also a cheaper alternative.

When it comes to raw material sourcing, a challenge before Unilever is to ensure continuity in good practices among vendors and suppliers. So, during an audit, when the company found one of its largest palm oil producers in Indonesia erring on this front, Unilever snapped ties.

The emerging business environment made it easier to do so. "Today, there is enough sustainable palm oil in the market, which has brought down the premium on sustainable palm oil to \$2 per tonne, from \$8 per tonne," says Paranjpe. Three years ago, Unilever was one of the founding members of the round table on sustainable palm oil set up in 2004; according to Paranjpe, most companies today are sourcing from suppliers adopting these standards.

This is raising standards and making it more commonplace. "Only when more and more companies do it will it have an impact on the world's problems," he adds. Now, Unilever is working on tracing the palm oil back to the plantation on which it is grown. The new target is to source all palm oil from certified 'traceable' sources by 2020.

Even investors are slowly taking note of a sustainability mindset. "There is a bucket of investors looking to invest in such companies," says an analyst with a foreign bank, requesting anonymity. "The perception is sustainable business practices are becoming a necessity; if they weren't, then their profits could be lower."

"It is definitely benefiting the company (being sustainable), but it will become more apparent over a longer time," feels Sumantra Sen, CEO of Responsible Investment Research Association, a non-profit.

"Two years on, we are starting to see how our (sustainability) plan is contributing to our business success. Why will any investor or shareholder not like it?" says Paranjpe.

Sustainability Scorecard

Unilever's 2012 sustainable report shows it is moving forward in some areas, but is stagnant in others

HITS

Sustainable Sourcing

Target 2020
Source 100% of agri raw materials sustainably

Performance



ACHIEVEMENT
100% PURCHASE OF PALM OIL FROM SUSTAINABLE SOURCES, THREE YEARS AHEAD OF SCHEDULE

Nutrition

Target 2020
Double proportion of portfolio that meets high nutritional standards

Performance



FIRST MILESTONE
REDUCE SALT INTAKE LEVELS TO 5G PER DAY BETWEEN 2015 AND 2020

Waste

Target 2020
Halve the waste associated with disposal of products

Performance 2012
Unable to make much progress in 'reuse' packaging -- providing consumers with refills in home and personal care portfolio

ACHIEVEMENT
53%
Unilever factories are sending zero non-hazardous waste to landfills

30 of 38
Factories in India, are doing the same, and waste per tonne of production is down 77% since 2008

...and MISSES

Water

Target 2020
Halve consumer usage of water while using its products

Performance 2012
Globally water use per consumer largely unchanged since 2010; HUL reduced water use in its manufacturing plants by 29%, over 2008

Greenhouse Gases

Target 2020
Halve greenhouse gas impact of products across lifecycle

Performance 2012
GHG footprint of its consumers remains largely unchanged for skin cleansing and hair-washing segment, accounting for half its GHG footprint

ACHIEVEMENT
Over 95% (by volume) of laundry powders in top 14 countries reformulated, yielding a 15% drop in GHG

GEETANJALI

The Times of India Delhi dated April 23, 2013

Ragpickers swear passengers to green oath

Neha Lalchandani | TNN

New Delhi: They were quite a sight on Monday, dressed in green jackets and mingling with the passengers at the New Delhi Railway Station. Passengers were taken aback when they were approached by them, some refused to even talk but others broke into a smile and happily took up the pen that the team was brandishing. The Safai Sena, a team of organized ragpickers working at four railway stations in the city, was encouraging people to sign a pledge saying that they would not litter.

"On the occasion of Earth Day we decided to have this event and managed to collect a few hundred signatures. Our people and volunteers from NGO Chintan spoke to passengers on platforms 1 and 16 and asked them not to litter and instead throw their garbage into

FOR LITTER-FREE STATIONS



Station	Waste produced	Waste recycled	Landfill waste	Workforce (no. of people)
New Delhi	15	1.0	8-10	70
Old Delhi	18	0.4-0.5	16	7
Anand Vihar	3-3.5	0.2-0.25	2.5	12
Nizamuddin	7-7.5	0.45	6	12

Figures in tonnes



Safai Sena members tell people not to litter railway stations

bins," said Santu, a waste-picker working under the umbrella of Chintan.

Geeta, a Delhiite travelling to Patna with her daughter, was one such passenger who signed the pledge. "Many of us litter even without thinking. I was a little surprised when I was approached by the team but when I learnt what they

wanted, I happily signed. I only hope I am able to live up to my promise though I will try very hard," she said.

Around 100 Safai Sena kamcharis work at four railway stations in the city, collect waste, segregate and recycle about 2,200 kg of waste each day. "We have a contract with the Indian Railways and have been as-

signed to clear waste from all trains and dustbins. However, since waste collection is a source of income to several people, we are often not allowed to carry out our work. Other ragpickers, sweepers etc threaten us. Consequently, the amount of waste we recycle is less than half of what we are capable of. Even now, we are spending Rs 1.5 lakh each month in lining the bins at the stations," said Santu.

At the New Delhi railway station, where about 70 people are stationed, the Safai Sena manages to recycle most waste. Having recently been provided with electricity, they have set up a plastic shredder where they process the plastic bottles. "Each day we get 4,000-6,000 bottles and manage to shred 165-175 of plastic. This we manage to sell in the market for about Rs 45/kg. Other recyclable goods include paper cups, tissues and cardboards," said a worker.

*The Times of India, Delhi dated
April 24, 2013*

'Take your ads off trees or face legal action'



GREEN TRIBUNAL FOR SAVING CITY'S TREES

Neha Lalchandani | TNN

New Delhi: Using a tree as a free display board can have you prosecuted now. Taking note of a Times of India article titled "Ads nail city's greens" that was published on April 22, a five-member bench headed by NGT chairperson Swatanter Kumar has asked all civic and land owning agencies to immediately remove all boards, advertisements, signages and nails from trees in their respective areas. Anyone whose board is found nailed to a tree is to be prosecuted by the relevant authority.

The bench observed that based on facts presented before it on Tuesday, "it is clear that all the public authorities have failed to discharge their duties and statutory obligations. They have not only violated various special statutes but also infringed their legal obligation arising out of the Environment Protection Act 1986. It is the obligation of the state to provide a healthy environment to the citizens and redress injuries to trees".

Based on the pictures carried in ToI report showing a DTC timetable hammered into a tree, the transport corporation has also been made party to the case as the 13th respondent.

The court was hearing a case filed by Aditya Prasad against Union of India regarding de-concretization of trees and allied matters. It has directed all government authorities, specifically the three municipal corpora-

tions, Delhi Development Authority, DTC, Delhi Metro, National Highway Authority of India, director general of Central Public Works Department and chief engineer of the Delhi PWD to remove forthwith all boards, nails, advertisements and signs from trees in the respective areas and prosecute any person or agency whose board is found nailed to a tree.

The officials have also been asked to ensure that a space of 1m or as much is necessary is left around



trees while tiling or concretizing. The bench said all such trees which are currently concretized should be freed up and no further tiling around trees should be permitted. It has made the vice-chairperson, commissioners, chief engineers, director generals and all senior-most officers of the respective organizations personally responsible for carrying out these orders.

RO water for cancer capital

Neel Kamal | TNN

Bathinda: Caught in the grip of cancer, Punjab seems to have finally heard the wake-up call. The state has declared the ground-water in Bathinda unsafe for drinking and decided to seal all 540 hand-pumps in town. The hand-pumps will be replaced by reverse osmosis (RO) plants.

The local administration has issued an advisory asking residents to use the water from RO plants for drinking only.

"We have plans to provide safe water to all residents in the next couple of months or so, and once we are done all hand-pumps will be sealed," said Bathinda municipal corporation commissioner Uma Shankar Gupta.

The municipal corporation of Bathinda — which lies in the heart of Punjab's Malwa region, the cancer capital of the state with the highest average of 136 patients per one lakh population — has already installed RO plants in 45 of the 50 wards in the

town. The residents are charged Rs 2.50 for a 20-litre can.

Gupta said the municipal corporation was also working on treating the canal water that is supplied to homes through taps.

But many residents said the government was late in taking action. "The highly contaminated water has led to cancer among so many people here and snatched many lives," said

Mohinder Singh of Jajal, the worst cancer-hit village of the district. "Every day we have to reach these RO plants, stand in line and

wait for water because we can't afford ROs at home," said Ramesh Kumar, a resident. "The government should make arrangements to supply water directly to our houses." Government officials said after Bathinda, safe water would be provided in adjoining Malwa districts.

Studies have found arsenic and toxic levels in underground water to be much higher than permissible limits in the Malwa belt.



Green panel pulls up five hospitals

Neha Lalchandani | TNN

New Delhi: A committee set up by National Green Tribunal to inspect Delhi hospitals for biomedical waste disposal practices has found serious lapses at three government hospitals and some minor issues at two private hospitals. The NGT has served a show-cause notice to the hospitals.

The hospitals that have been served notice are Dr Hedgewar Arogya Sanshan, Lok Nayak Hospital on Jawaharlal Nehru Marg, Dr Baba Saheb Ambedkar Institute Rohini, Max Super Specialty Hospital in Patparganj and Fortis Escorts Health Institute Okhla.

On April 18, a five-member bench headed by NGT chairperson Swatanter Kumar appointed a Central Pollution Control Board committee to carry out a surprise inspection of Delhi hospitals and submit a report by April 23.

"Having perused the reports and having heard the counsel appearing for the parties, it is apparently clear that none of these hospitals are strictly adhering

to the parameters prescribed under the Bio-Medical Waste (Management and Handling) Rules, 1986 while government hospitals are in serious default," said the bench.

The report by the expert committee indicated that among the various violations found at the three government hospitals, in the case of Lok Nayak Hospital there is a 1,250 kilolitres per day sewage treatment plant on its premises that has not been functioning since the last three months.

"Similarly, other government hospitals are also not adhering to the requirements of law... private hospitals are also in breach of law in adhering to the prescribed norms and standards which are of the nature which can be remedied easily," observed the bench.

Based on this report, the court has issued a show-cause notice to all five hospitals and asked them to pay compensation on the principle of 'polluter pays'.

The committee has also been asked to carry out similar inspections at other hospitals, including private clinics and nursing homes.

LAPSES IN WASTE DISPOSAL

**Edited by: Prof. Sushil Kumar
Centre for Business Sustainability,
IIM Lucknow**