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Centre for Business Sustainability, IIM Lucknow
Prabandh Nagar, Off. Sitapur Road, Lucknow- 226013
E-mail: cbs@iiml.ac.in Phone: +91 522 2736987, +91 2736989

Business Sustainability News — International

Global warming to hit Asia hardest, warns new report on climate change

By Robin McKie, *science editor, for The Observer*

Asia will face new challenges over food security because of climate change. Photograph: Jiang Kehong/AP

People in coastal regions of Asia, particularly those living in cities, could face some of the worst effects of global warming, climate experts will warn this week. Hundreds of millions of people are likely to lose their homes as flooding, famine and rising sea levels sweep the region, one of the most vulnerable on Earth to the impact of global warming, the UN states.

The report – Climate Change 2014: Impacts, Adaptation and Vulnerability – makes it clear that for the first half of this century countries such as the UK will avoid the worst impacts of climate change, triggered by rising carbon dioxide levels in the atmosphere. By contrast, people living in developing countries in low latitudes, particularly those along the coast of Asia, will suffer the most, especially those living in crowded cities.

A final draft of the report, seen by the *Observer*, will be debated by a panel of scientists set up by the Intergovernmental Panel on Climate Change (IPCC) this week at a meeting in Yokohama, Japan, and will form a key part of the IPCC's fifth assessment report on global warming, whose other sections will be published later this year.

According to the scientists who have written the draft report, hundreds of millions of people will be affected by coastal flooding and land loss as global temperatures rise, ice caps melt and sea levels rise. "The majority of it will be in east, south-east and south Asia. Some small island states are expected to face very high impacts."

In addition, the report warns that cities also face particular problems. "Heat stress, extreme precipitation, inland and coastal flooding, as well as drought and water scarcity, pose risks in urban areas with risks amplified for those lacking essential infrastructure and services or living in exposed areas." The report adds that this latter forecast is made with very high confidence.

In addition, climate change will slow down economic growth, further erode food security and trigger new poverty traps, particularly "in urban areas and emerging hot spots of hunger," it is argued.

This combination of a high-risk region and the special vulnerability of cities make coastal Asian urban centres likely flashpoints for future conflict and hardship as the planet warms up this century. Acrid plumes of smoke – produced by forest fires triggered by drought and other factors –are already choking cities across south-east Asia. In future, this problem is likely to get worse, say scientists.

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Corporate Emissions Fell 7% in Australia in First Year of Carbon Price

Emissions from Australia's largest emitting companies fell 7% on average in the first year of the carbon price, **Investor Group on Climate Change (IGCC)** analysis of new government data shows.

According to new official data from the Clean Energy Regulator, carbon emissions from Australia's largest 350 corporate emitters fell from 342 million tonnes in 2011-12 to 321 million tonnes of CO2e in 2012-13.

The carbon price applies to around 350 companies with above 25,000 tonnes of emissions per year. Australia's largest corporate emitters include large electricity generators like AGL Energy and Origin Energy, resources and energy companies like BHP Billiton, Santos, Peabody Energy and Woodside Petroleum, and airlines like Qantas.

"The carbon price is designed to encourage companies to find low-cost ways to reduce their emissions," said Nathan Fabian, Chief Executive of the Investor Group on Climate Change. "As this week's National Accounts data showed, Australia's economy continues to grow strongly while emissions from our largest emitting companies fall."

Investors have long argued that a carbon price is an essential part of the mix of policies forming a long-term framework for addressing climate risk.

"There is ample evidence that carbon pricing is cheapest and most effective way of reducing emissions," Mr. Fabian said.

Individual companies' emissions performance varies considerably from year to year, and each year some assets are decommissioned or moth-balled or change ownership, and some companies leave the list of large emitters while others join it. Many factors affect company emissions. For all companies, emissions rise and fall with changing production levels.

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Cultural World Heritage Threatened by Climate Change

Some of the world's most recognisable and important landmarks could be lost to rising sea levels if current global warming trends are maintained over the next two millennia.

From the Statue of Liberty in New York to the Tower of London or the Sydney Opera House – sea level rise not only affects settlement areas for large parts of the world population but also numerous sites of the UNESCO World Heritage. This is shown in a new study by Ben Marzeion from the University of Innsbruck and Anders Levermann from the Potsdam Institute for Climate Impact Research (PIK).

"The physical processes behind the global rise of the oceans are gradual, but they will continue for a very long time," says climate scientist Ben Marzeion. "This will also impact the cultural world heritage."

The scientists computed the likely sea level rise for each degree of global warming and identified regions where UNESCO World Heritage will be put at risk throughout the coming centuries. While public interest so far was focused mainly on ecological and agricultural impacts of climate change, Marzeion and Levermann in the journal Environmental Research Letters now put the focus on the cultural heritage of mankind.

136 Out of 700 Listed Cultural Monuments will be Affected in the Long-Term

The UNESCO World Heritage List comprises a total of more than 700 cultural monuments. If global average temperature increases by just one degree Celsius, already more than 40 of these sites will directly be threatened by the water during the next 2000 years. With a temperature increase of three degrees, about one fifth of the cultural world heritage will be affected in the long term.

"136 sites will be below sea level in the long-run in that case if no protection measures are taken," Ben Marzeion specifies. "The fact that tides and storm surges could already affect these cultural sites much earlier has not even been taken into account."

Among the world heritage sites affected are, for instance, the historical city centres of Bruges, Naples, Riga and St. Petersburg, Venice and its Lagoon, Robben Island, and Westminster Abbey, and a number of sites in India and China.

In order to make reliable statements, the climatologists also consider the regionally different rates of sea level rise. "If large ice masses are melting and the water is dispersed throughout the oceans, this will also influence the Earth's gravitational field," says Anders Levermann. "Sea level rise will therefore vary between regions."

The scientists calculated future sea-level rise for all world regions and compared these projections with today's coastal settlement areas and the sites of the cultural world heritage. "Our analysis shows how serious the long-term impacts for our cultural heritage will be if climate change is not mitigated," says Anders Levermann. "The global average temperature has already increased by 0.8 degrees compared to pre-industrial levels. If our greenhouse gas emissions increase as they have done in the past, physical models project a global warming of up to five degrees by the end of this century."

Currently Populated Regions Become Oceans

World heritage sites, like Santa Maria della Salute in Venice, are affected by sea level rise. © Thinkstock / PIK

Apart from historical cultural monuments, regions that are currently populated by millions of people would thus be affected. With a global warming of three degrees, twelve countries around the world could lose more than half of their present land area and about 30 countries could lose one tenth of their area.

"Island states in the Pacific and the Caribbean as well as the Maldives and the Seychelles are particularly threatened, but not only these," says Anders Levermann. "A majority of their population will eventually need to leave their home islands in long-term, so most of their culture could be entirely lost sooner or later if the warming trend is not stopped," Ben Marzeion adds.

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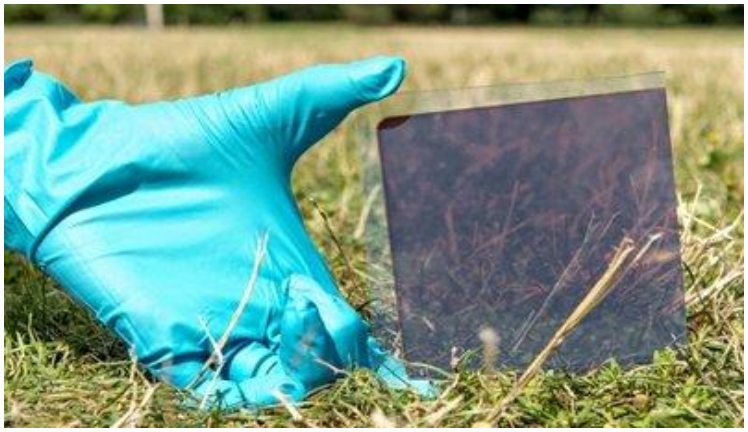
Tips:

Now it's clear that the climate change is taking place, all predictions and forecasts are stating this. Now the primary target is not to reverse but to limit it to rise up to 2^0 C. Air pollution is creating havoc in many parts of the world and so is the case of water pollution, at many places the ground water is not at all fit for use. We have no time to watch and have to act immediately. Here are some useful tips that may considerably help us in achieving the targets.

- Reduce use of fossil fuel by pooling vehicle, using bicycle or walking down short distances. One may also use electronic vehicles in place of petrol or diesel driven vehicles.
- Mostly people burn the trash in open air even the corporation employees clean the place collect small quantities of trash at one place and burn it. This practice pollutes the air.
- Use separate bins for organic waste and recyclable waste thus organic waste can be used to produce power or making manure, and reuse of the recycled waste can reduce burden on scarce resources.
- Reduce use of paper by judiciously using it, using paper that has been recycled from waste and instead of storing data in hard copies store it electronically.
- Practicing and advocating the sustainable living and inculcating good habits that promote sustainability is very much required, to have better response of people.
- Use products that have only essential packaging required to ensure good quality of the product. In this regard we also appeal to the manufacturers and marketers not to use unnecessary packaging material; this on the one hand increases pressure on resources and on the other and equally important side increases trash.
- Reduce use of Air conditioners as that uses lot of energy and emits Green house gases. As we have said in our previous issues set the air conditioner on moderate temperatures neither very high nor very low, as the electricity consumption is less on such settings.

The perovskite lightbulb moment for solar power

By Mark Miodownik, *for The Observer*



Bright idea: a 330nm-thick film of organometal halide perovskite fabricated on a glass sheet. This film is the active element of new 15% efficient solar cells. Photograph: Boshu Zhang, Wong Choon Lim Glenn & Mingzhen Liu

The worst part of my job as a materials scientist is going to conferences. They are often turgid affairs conducted in the ballrooms of hotels so identical to one another that you can't tell whether you are in Singapore or Manchester. The same speakers are there, for the most part droning on about the same thing they droned on about at the last conference. I should know, I am one of them.

But occasionally, just occasionally, someone says something so radically new that it causes you to sit up and actually listen. Your neighbours are no longer fiddling with their smartphones; there is the proverbial buzz in the air.

This was the scene at the Materials Research Society conference in Boston last December, where a breakthrough in perovskite solar cells was announced. If perovskites mean nothing to you read on, as they may have a very big impact on your future fuel bill.

If we could capture approximately 1% of the sunlight falling on to the British Isles and turn it into electricity we would meet our current energy demands. The reason no one suggests doing this rather than building wind, nuclear or conventional power stations is the cost. We currently use silicon solar cells to turn sunlight into electricity but they are expensive and require subsidies.

Silicon is a poor conductor of electricity because all of its four outer electrons are bound up in the chemical bonds holding the crystal together. However, by adding a tiny amount of phosphorous, which has five outer electrons, you effectively add a free electron to the crystal and make it conduct moderately well. Similarly, you can add boron, which has only three outer electrons, and effectively do the same thing, only now the conducting charge is called an electron hole.

The magic comes when you put a phosphorous silicon layer next to a boron silicon layer: the holes and the electrons cancel each other out at the junction but create an electric field that means that electrons only like to flow in one direction across the junction. This is called a diode.

There are many flavours of diodes, each having a different junction architecture. Light-emitting diodes (LEDs) emit light when electrons flow across the junction but the opposite effect also works: light hitting the diode creates an electric current, and this is how a solar cell works.

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Tesla Gigafactory: Gamechanger for Electric Cars & Energy Storage

SustainableBusiness.com News

Tesla is back in the news again, this time announcing plans for a Gigafactory, which could transform the power industry as much as advance its electric car.

The company plans to start construction of the **world's biggest battery factory** next year, up and running in 2017. The goal is to quickly bring down the cost of batteries - 30% lower per kilowatt cost in the first year - to produce a "compelling, affordable electric car in about three years," and accelerate battery innovation - a game-changer for electric cars and the entire energy storage industry.

Musk says the retail price for the Model S will be cut in half from the current $71,000 and the stationery battery he's developing will soon allow homeowners and businesses to use solar energy throughout the day and night.

CEO Elon Musk expects to produce batteries for 500,000 vehicles by 2020 at the 30 gigawatt factory - a gigantic 10 million square foot space that employs some 6000 people. Tesla says its choosing between Nevada, New Mexico, Arizona and Texas for the location. It will run on solar and wind.

Musk will invest $2 billion, and the remainder of the $4 billion to $5 billion needed through 2020 will come from $1.6 billion in convertible notes and as yet unnamed partners, which could be Panasonic, Samsung and even Apple. The vertically integrated facility would bring battery manufacturing under one roof - precursor material, cell, module and pack production.

The gigafactory will quickly achieve economies of scale and lower costs through innovative manufacturing processes, reduction of logistics waste, optimization of co-located processes and reduced overhead, Tesla says.

Because of competition, battery prices are already dropping, which could bring EVs with a 150-mile range starting this year.

"If it can be a leader in commercializing battery packs, investors may never look at Tesla the same way again. If Tesla can become the world's low-cost producer in energy storage, we see significant optionality for Tesla to disrupt adjacent industries." Morgan Stanley Adam Jonas, told Bloomberg.

"Battery storage is the holy grail of the distributed generation movement," Morningstar analyst Travis Miller, told *Bloomberg.* "If developers can create a high-capacity battery technology, it opens the door to a significant increase in options for customers to supply their own power."

"If you can get batteries cheap enough and combine them with solar panels, you no longer need the utility," Navigant analyst Sam Jaffe says. "Then the question is how cheap does it have to be? About 70% cheaper, he estimates.

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Indonesia's forest fires feed 'brown cloud' of pollution choking Asia's cities

By John Vidal, *for The Observer*

People wear masks to protect themselves from the haze in Pekanbaru, Riau province, Indonesia. Photograph: Rony Muharrman/AP

High above the vast Indonesian island of Sumatra, satellites identify hundreds of plumes of smoke drifting over the oil palm plantations and rainforests. They look harmless as the monsoon winds sweep them north and east towards Singapore, Malaysia and deep into Cambodia, Laos and Thailand. But at ground level, south-east Asian cities have been choking for weeks, wreathed in an acrid, stinking blanket of half-burned vegetation mixed with industrial pollution, car exhaust fumes and ash.

From Palangkarya in Borneo to Kuala Lumpur in Malaysia, the air has been thick, the sun a dull glow and face masks obligatory. Schools, airports and roads have been closed and visibility at times has been down to just a few yards. Communities have had to be evacuated and people advised to remain indoors, transport has been disrupted and more than 50,000 people have had to be treated for asthma, bronchitis and other respiratory illnesses in Sumatra alone. Last week more than 200 Malaysian schools were forced to close, and pollution twice reached officially hazardous levels.

The Asian "haze", which comes and goes with the wind and droughts, is back with a vengeance just eight months after an embarrassed Indonesian government promised it would never happen again and was forced to apologise to neighbouring countries for the pollution that blanketed the region in June 2013.

Mixed with the dense photo-chemical smogs that regularly hang over most large traffic-choked Asian cities, south-east Asia's air pollution has become not just a major public health hazard but is said to be now threatening food production, tourism and economic expansion. In addition, say scientists, it may now be exacerbating climate change.

According to Nasa satellite maps, more than 3,000 separate fires have been recorded across Indonesia, Thailand and Malaysia since mid-January, more than in June 2013 when the pollution spiked to dangerous levels and became a regional diplomatic crisis. This time, the monsoon winds mostly spared Singapore but sent the thick smog from burning peat soils and vegetation over much of the region. Around 10 million people and an area the size of Britain and France have been affected.

Just as in 2013, most of this year's fires appear to have been started in Riau province, northern Sumatra, the centre of the rampant Indonesian palm oil and pulp-paper industries. According to President Susilo Bambang Yudhoyono, 70% of these fires were lit by landowners wanting to clear ground for more plantations. But while Indonesia is widely blamed for the air pollution, the latest satellite images show fires burning and haze spreading across Burma, Thailand, Cambodia and Laos and as far away as the Philippines and Papua.

What has surprised observers is the timing: the burning season, when farmers clear land, does not usually start for many months. Monitoring groups such as Walhi, the World Resources Institute and Greenpeace say the fires are linked both to the worst drought seen in years and corruption and inaction at government level. So far, says the Riau government, only a handful of suspects have been held for setting the fires.

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Inside Levi's water recycling strategy

By Heather Clancy

Two decades ago, Levi Strauss & Co. shook up the apparel industry with water quality guidelines currently used widely across the apparel supply chain. Now, as scarcity concerns become more acute around the world, it is piloting ways to reduce fresh water used in its jeans-finishing operation by encouraging contract facilities to recycle wastewater.

It's the first time an apparel company has attempted to set standards within its supply chain for water reuse. Already, more than 100,000 pairs of jeans finished using 100 percent recycled water have been produced by the company's test partner in China, reducing the operation's fresh water draw by nearly 12 million liters (about 3 million gallons).

That's on top of the 770 million liters (203 million gallons) Levi Strauss has saved over the past four years through another initiative, its Water<Less jeans brand.

"This water recycling can happen over and over, significantly reducing the overall amount of water used to make our products," the company's sustainability team reports in a blog detailing the water recycling program. "As long as the water meets our standards to deliver the quality you expect from our brands, it can be recycled multiple times."

That's a notable achievement, given how much water the apparel industry uses — or wastes, depending on your perspective. For example, it takes 26 to 40 gallons of water to process about two pounds of textiles, which is one reason Nike is testing waterless dyeing techniques. The finishing process, like the ones used extensively to make your jeans that just-right shade of blue, also uses plenty of fresh water.

Taking the plunge

Expanding on the initial work by its Chinese partner, two additional facilities in Nicaragua and South Asia are retrofitting their operations to participate in water recycling, said Michael Kobori, vice president of sustainability for San Francisco-based Levi Strauss. The jeans maker works with about 100 industrial laundries globally where these processes take place.

"I was surprised by how interested [the facilities] are in working toward this. They really want to make it happen," Kobori said.

Jeans photo by Thinglass via Shutterstock

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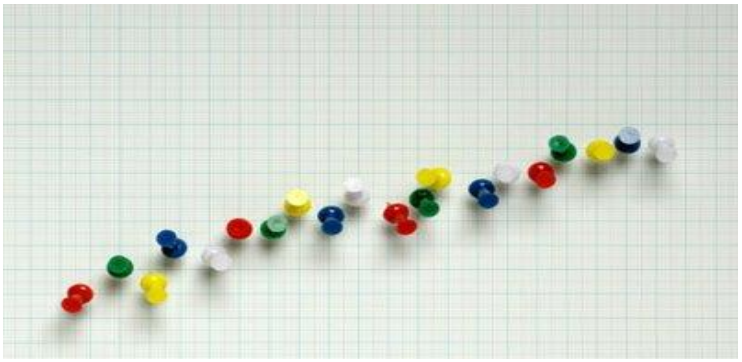
How to create system change that solves sustainability challenges

By Bruce Watson, *for theguardian.com*



System change focuses on the larger context of a problem, rather than looking at each individual issue. Photograph: Alamy

For those involved in sustainability, one of the biggest challenges is perspective; how can you tackle the big, systemic problems such as poverty, water scarcity and climate change? At a recent event, hosted by Guardian Sustainable Business and Forum for the Future, sustainability actors from businesses, NGOs, academia and the media discussed how to create the system change needed to address sustainability challenges.

Rather than focusing on an individual problem or issue, system innovation looks at the larger context of a problem, defining the roles, needs, and potential actions of all stakeholders. Here are some of the ways that it works:

Identify the process of change

Forum for the Future, a non-profit that works in sustainability, has outlined six steps to significant change, a general road map for system innovation.

Stakeholders begin by identifying the need for a change. They then diagnose the problem, develop “pioneering” solutions for solving it, and implement those solutions until they reach a tipping point. Afterward, they effectively create a new status quo, by sustaining the transition, and, finally, establishing the rules of the new mainstream.

Get a full understanding of the problem

The six steps, which seem to draw heavily from the dialectic, outline the generally theoretical process of a systemic transition. Joe Hsueh, partner in Second Muse and founding partner of the Academy for Systemic Change, offers a more tangible process for system change.

He begins by gathering all stakeholders, then asking them, together, to bring all problems to the table. In this way, Hsueh notes, stakeholders are able to create a “Participatory Causal Systems Map.” Or to put it simply, they’re able to diagram every aspect of a problem, so that each actor is aware of the challenges facing every other actor.

Find the core issue

To some extent, Hsueh suggested, sustainability problems are a matter of perspective. Using the example of the fishing industry, he noted that, while fishermen, fish buyers and seafood companies might regard themselves as opponents, they share a common interest: maintaining the health and integrity of the fish population. Having identified and agreed upon that core issue, the stakeholders can begin to approach a systemic problem from a common ground.

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Better data helps WisErg solve the food waste problem

By Heather Clancy

Two ex-Microsoft engineers are applying their backgrounds in enterprise technology and business intelligence to the problem of managing organic food waste at grocery stores and food service operations.

Their concept is coming to life in a new system called Harvester, which looks like a massive refrigerator or furnace that is access-controlled by a security keypad.

The technology being used in several grocery stores in the Seattle area leverages an oxidative conversion process to break down food scraps — up to 4,000 pounds daily — turning them into a "nutrient-rich liquid" that can be collected and used as the feedstock for organic fertilizer. At the same time, the system also uses cameras and sensors to generate and collect all sorts of valuable data, such as the sorts of materials being added, the times of day the system is used most frequently, or when the unit is full and needs to be emptied.

"We realized that data is really the key toward understanding what is being produced and what is being thrown away," said Larry LeSueur, co-founder and CEO of the company behind Harvester, WisErg of Redmond, Wash. "It is an appliance that allows us to understand what is being discarded."

The data created by the sensors and cameras used in each unit are transmitted and aggregated into a database hosted on the Microsoft Azure cloud service. Reports can summarize trends at specific locations or produce aggregated information, so that a grocer with more than one location can pinpoint places where improvements might be made or best practices shared. As more stores are added, the company will be able to mine that information for valuable seasonal or regional trending information.

Simplicity matters

LeSueur and his co-founder, Jose Lugo, started and bootstrap-financed the organization in 2010. They debuted their technology in 2012; the company hopes to have 10 systems in place by spring 2014 and already has several in the field.

Conceptually speaking, using the Harvester is pretty straightforward. "This was part of the design. The goal was to require no more than three levels of detail. As a result, not only are we seeing the courtesy clerks use them, department managers want to participate, too," LeSueur said.

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Solar innovation gives Nicaraguan community a brighter future

By Laurie Guevara-Stone

Forty years ago, Sabana Grande, a small community in northern Nicaragua, was ravaged by war. Now you will find people sitting under solar-powered lights, eating solar-cooked chicken and drinking smoothies made with a bicycle-powered blender. Sabana Grande (pop. 2,000), in the mountains of Totogalpa about 20 miles from the Honduran border, has embraced a solar culture that has transformed the community.

Turning landmine survivors into solar technicians

The war between the government Sandinistas and the Contra rebels left hundreds of people disabled by landmines, especially in the northern part of the country. In 1999, a Nicaraguan non-governmental organization called Grupo Fenix received a grant from the Canadian Falls Brook Center to reintegrate landmine survivors back into society. The NGO — founded by engineering professor Susan Kinne of the Engineering University of Nicaragua and made up of many of her engineering students — decided it would teach the landmine survivors how to make solar panels, providing them with both a livelihood and a way to get electricity in a poor, off-grid region. It focused on Sabana Grande, an agricultural community in one of the poorest regions in Nicaragua.

Grupo Fenix taught the villagers how to solder together discarded solar cells they received from some large PV manufacturers to make solar PV panels up to 60 watts in size. They also held classes on installing and maintaining off-grid solar PV systems. The Sabana Grande solar workshop was born, and soon a few of the trained farmers-turned-technicians started selling small solar home lighting systemsto people in the community and throughout the region.

Marco Antonio Perez is a landmine survivor trained by Grupo Fenix. "One gets a complex, and believes that their life is over," he said. "To reintegrate into society, to feel useful again, took five years." After being trained in photovoltaics, he directed the Sabana Grande solar workshop for years, and now runs a solar company in a nearby town. Despite his lack of a formal education, having only graduated from the sixth grade, he has traveled to Haiti and Costa Rica to teach people how to construct solar panels, and is co-author of a paper on an encapsulation method he helped develop that was published in the Elsevier journal Solar Energy Materials and Solar Cells.

Women's empowerment through solar energy

The engineering students also brought along some solar cookers, and showed them to the women in the community. The women were intrigued — in Nicaragua about 90 percent of the rural population cooks over open fires, and respiratory diseases are the leading cause of death for women. Soon the women were learning how to build their own solar cookers and using them to cook for their families, greatly reducing their firewood consumption and smoke exposure. The women were hooked, and organized themselves into an organization called Las Mujeres Solares de Totogalpa (the Solar Women of Totogalpa), which officially became a cooperative in 2010. In the early years, solar cookers were constructed in the homes of members. In 2005, they decided they needed a place of their own.

With the help of Grupo Fenix, the Solar Women acquired three acres of donated land along the Pan-American Highway and secured a grant from the Noble Foundation. They then embarked on building their own solar center to house both the PV workshop and the solar cooker workshop. The women learned how to make adobe bricks and after donating thousands of hours of time and making 6,000 adobe bricks, they built their own building, which houses an office, a warehouse and workshop space for constructing solar panels, solar battery chargers, solar cookers and solar driers.

La Casita Solar

La Casita Solar (Credit: Grupo Fenix)

While experimenting with their solar cookers, the women made an interesting discovery with coffee, one of Nicaragua's main export crops. Because the country's good beans are exported, leaving bitter green beans in the country, coffee found in Nicaragua is not very tasty. But when the women roasted the coffee beans in the solar ovens, the bitterness was taken away, leaving a rich, delicious flavor. Wanting to market their new discovery, along with the solar dried fruits and recipes they were developing for the solar ovens, the women decided to create a restaurant.

Through more grants, the women built the first solar restaurant in Nicaragua, aptly named La Casita Solar (PDF, Spanish) (The Little Solar House). They grow their own organic fruits and vegetables on adjoining land. The restaurant has solar-powered lights and a freezer, and uses solar cookers, fuel-efficient charcoal stoves (from charcoal made from the agricultural waste from their land), biogas stoves (from biogas made from the restaurant's latrine plus added cow manure) and fuel-efficient firewood stoves. "Truly, it has been a success for us, the Solar Women, to build this dream that we've had," said Nimia Lopez, a cooperative member.

Empowering the next generation

Local kids wanted to get in on the action as well, so the Solar Youth group was formed. One of their first projects was to construct a bicycle-powered blender, now used at the solar restaurant. Getting the youth involved was important for Grupo Fenix and for the Solar Women. The school in the community only goes up to the sixth grade, is overcrowded and has little access to educational resources such as books. Many women in the Solar Women's group only have a second or third grade education, and they wanted more for their kids. One of the most recent projects Grupo Fenix has undertaken is to help the community build a solar youth center. With the help of Earthen Endeavors Natural Building, the group recently built a beautiful building, El Centro Solar, out of earthen materials — cob, wattle and daub, adobe and earthen plasters.

The building will be used as both a preschool and daycare center — two services not currently available in Sabana Grande — and will provide extracurricular activities, after school tutoring and environmental education for older children and teens, as well as parenting classes for adults.

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Geoengineering side effects could be potentially disastrous, research shows

By John Vidal, *for theguardian.com*

Geoengineering the planet's climate: even when applied on a massive scale, the most that could be expected is a temperature drop of about 8%, new research shows. Photograph: Nasa/REUTERS

Large-scale human engineering of the Earth's climate to prevent catastrophic global warming would not only be ineffective but would have severe unintended side effects and could not be safely stopped, a comparison of five proposed methods has concluded.

Science academies around the world as well as some climate activists have called for more research into geoengineering techniques, such as reflecting sunlight from space, adding vast quantities of lime or iron filings to the oceans, pumping deep cold nutrient-rich waters to the surface of oceans and irrigating vast areas of the north African and Australian deserts to grow millions of trees. Each method has been shown to potentially reduce temperature on a planetary scale.

But researchers at the Helmholtz Centre for Ocean Research Kiel, Germany, modelled these five potential methods and concluded that geoengineering could add chaos to complex and not fully understood weather systems. Even when applied on a massive scale, the most that could be expected, they say, is a temperature drop of about 8%.

The potential side effects would be potentially disastrous, say the scientists, writing in Nature Communications. Ocean upwelling, or the bringing up of deep cold waters, would cool surface water temperatures and reduce sea ice melting, but would unbalance the global heat budget, while adding iron filings or lime would affect the oxygen levels in the oceans. Reflecting the sun's rays into space would alter rainfall patterns and reforesting the deserts could change wind patterns and could even reduce tree growth in other regions.

In addition, say the scientists, two of the five methods considered could not be safely stopped. "We find that, if solar radiation management or ocean upwelling is discontinued then rapid warming occurs. If the other methods are discontinued, less dramatic changes occur. Essentially all of the CO2 that was taken up remains in the ocean."

Even the foresting of deserts on a massive scale could prove disastrous if the irrigation needed to grow the trees were stopped, they say. "The desert regions would eventually return to desert and the carbon that was stored in the plant biomass and soil would slowly be returned to the atmosphere through decay and respiration," says the paper.

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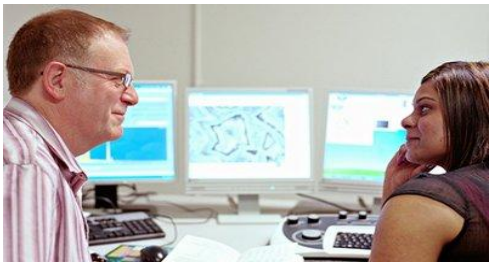
Sustainability gives HR teams an edge in attracting and retaining talent

By Katharine Earley, *for theguardian.com*



Philips retains a firm foothold on CareerBliss' 'Happiest Places to Work in America' list. Photograph: Juliet Brauner/Alamy

Passionate and entrepreneurial people are central to Philips' ambitions to transform its business. Through its Accelerate! programme, the global lighting, healthcare and consumer lifestyle giant is striding towards its goal of delivering customer-focused, meaningful innovation. The company is gaining the speed and agility to drive operational excellence, increase the pace of innovation and above all, to improve lives. And its 115,000 employees are leading the charge. Philips is committed to attracting and retaining the best and brightest brains by 'walking the talk' on sustainability and developing a culture that fosters creativity, collaboration and entrepreneurial spirit.

So what's in it for the employee and does Philips' reputation as a sustainable business leader motivate people to join and stay with the company?

"Philips is helping people around the world to live well and enjoy life in their communities, and in the same way, it looks after its employees in the workplace by prioritising health, safety and wellbeing," explains Cristina Grace, global head of leadership, talent and learning at Philips. "Job seekers are increasingly making these values a priority, and what's more, they want to be a part of what we're doing. Some are inspired by a particular initiative, like bringing light to rural African communities, but many simply see their own values reflected in the way we do business.

"Our talent acquisition teams are active in seeking a diverse range of people who share our values and exhibit the behaviours we want to see in the workplace," continues Grace. "In particular, we look for a willingness to take ownership, a readiness to collaborate and a desire to succeed."

Green jobs seekers

Some 40% of job seekers read a company's sustainability report, according to a survey commissioned by the Global Reporting Initiative (GRI). Anecdotally, Grace agrees that today's candidates tend to be better informed of Philips' sustainability credentials. Prospective employees can rifle through Google in seconds and unearth a myriad of sustainability news and accolades, including an Interbrand 'Top 50 Global Green Brand' ranking, leading CDP performance and disclosure scores and a firm foothold on CareerBliss' 'Happiest Places to Work in America' list.

"Despite tough competition and a challenging employment market, people are still interested in sustainability," says Grace. "We believe this stems from a growing desire, particularly among millennials, to make a difference in the world through their work. But the trend is more far-reaching than that. We're increasingly seeing people of all ages seeking companies that are leading the way in making a positive contribution to society."

Grace highlights a recent work-life study conducted by Philips in North America, which reveals that 68% of working Americans would take a pay cut for a job that better allowed them to apply their personal interests in the workplace. Nearly a quarter (23%) would be prepared to take a cut of 25% or more.

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Could future clothes, bottles and chairs be made from carbon emissions?

Companies such as AirCarbon and Novomer turn greenhouse gases to into new materials for a wide variety of products

By Bruce Watson, *theguardian.com*

AirCarbon rearranges the carbon molecules from greenhouse gas emissions and produces a plastic that can then be used to make everyday plastic products. Photograph: Christopher Thomond

Finding materials that are both sustainable and affordable has long been a central quandary in sustainable design. Certainly, high-cost, high-end materials, like sustainably-sourced hardwoods and post-consumer paper products, exist. However, the price of these products often pushes them out of the reach of many consumers.

Adding to the frustration is the fact that there is no dearth of available sustainable materials, including recovered waste. What if companies could move the recovered materials needle up a notch? What if, instead of simply diverting materials from landfills, they could recover a harmful waste material before it is even released? And what if, in the process, they could replace some of the most environmentally unsound materials currently in use?

Those questions lie at the heart of a new level of sustainable materials engineering. Across the globe, a growing cadre of engineers and researchers are looking for ways to transform greenhouse gasses into useable materials.

For the most part, the push to deal with greenhouse gasses has focused on limiting, offsetting and sequestering the materials, either by regulating the gasses that factories release, encouraging manufacturers to offset their "carbon footprint," or collecting greenhouse gasses and burying them deep within the earth. However, many of these gasses are at least partially composed of carbon, which means that they contain the building blocks of many popular materials, including plastic.

The vast majority of plastic is produced from petroleum, which means that the long carbon chains that make up the material come from one of the most environmentally costly materials on the planet. The question, then, is how to take the carbon molecules that make up greenhouse gasses like methane, carbon dioxide and carbon monoxide, and transform them into long, plastic-like carbon chains.

Creating carbon chains

AirCarbon entrepreneur Mark Herrema thinks that he may have a solution. By combining methane and carbon dioxide with a proprietary catalyst, his company rearranges the carbon into long chains, producing a plastic that can then be used to make bottles, chairs or almost anything else that plastic is currently used for.

AirCarbon diverts carbon from the atmosphere, but instead of burying it in the earth or storing it in canisters, it repurposes it as a useable material. Herrema emphasizes that his company's product is completely carbon negative: from collection of the greenhouse gasses to transportation to production of the plastics. Currently, AirCarbon's plastics are used by over thirty companies, including Virgin and KI.

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Financial Crisis has not put Europeans off Climate Action

Brussels – Four out of five people in the European Union recognise that fighting climate change and using energy more efficiently can boost the economy and employment, according to a special Eurobarometer opinion poll on climate change published on March 3. This is slightly higher than in the last poll, in 2011, when 78% agreed.

Several member states which suffered most in the economic and financial crisis are among the countries where recognition of the economic benefits of climate action and energy efficiency is highest. In no Member State did fewer than 65% of respondents agree.

The survey[1] also found that seven in ten citizens agree that reducing fossil fuel imports from outside the EU could bring economic benefits.

European Commission President José Manuel Barroso said, “There is not a choice to make between good economics and climate protection: cost-effective climate action is indeed good economics. I am very encouraged that European citizens recognise that too. This poll sends a strong signal to EU leaders to take bold climate action for a sustainable economic recovery. And it is an encouragement also for us in the Commission to continue fighting for ambitious climate action in Europe.”

Connie Hedegaard, European Commissioner for Climate Action, said, ”The poll confirms that a clear majority of Europeans expect their politicians to tackle the climate challenge now. The citizens understand that climate change did not go away while their governments were busy handling the economic crisis. It is not either growth and competitiveness or the climate. It is both, it has to be both. I hope that EU leaders will listen and act accordingly at the European Council later this month when they will discuss our 2030 climate and energy proposals.”’

Key results of the survey are as follows:

- 80% of respondents agree that fighting climate change and using energy more efficiently can boost the economy and jobs, with 31% agreeing totally and 49% tending to agree. People were most likely to agree totally in Spain (52%), Sweden (50%), Malta (44%), Ireland and Cyprus (43%) and Greece (42%). The lowest share of respondents either agreeing totally or tending to agree was 65% in Estonia.

Check the following link to read/download Full Report:

http://ec.europa.eu/public_opinion/archives/ebs/ebs_409_en.pdf

Source: Europa.

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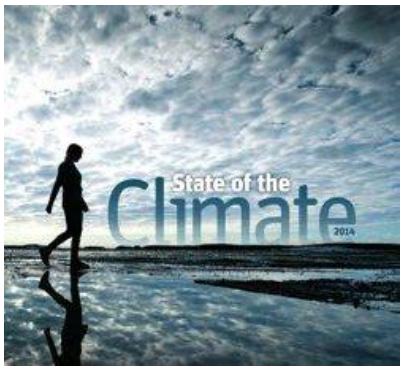
State of the Climate 2014: Forecasting Australia's Climate Trends



A definitive report on observed changes in long term trends in Australia's climate has been released on March 4 by CSIRO and the Bureau of Meteorology.

Bureau Chief Executive Dr. Rob Vertessy said, "Temperatures across Australia were, on average, almost 1°C warmer than they were a century ago, with most of the warming having occurred since 1950."

"Australia's mean temperature has warmed by 0.9°C since 1910," Dr. Vertessy said.

"Seven of the ten warmest years on record in Australia have occurred since 1998. When we compare the past 15 years to the period 1951 to 1980, we find that the frequency of very warm months has increased five-fold and the frequency of very cool months has decreased by around a third."

"The duration, frequency and intensity of heatwaves have increased across large parts of Australia since 1950."

"Extreme fire weather risk has increased, and the fire season has lengthened across large parts of Australia since the 1970s."

"We have also seen a general trend of declining autumn and winter rainfall, particularly in southwestern and southeastern Australia, while heavy rainfall events are projected to increase. Australian average annual rainfall has increased slightly, largely due to increases in spring and summer rainfall, most markedly in northwestern Australia."

CSIRO Chief Executive Dr. Megan Clark said Australia has warmed in every state and territory and in every season.

"Australia has one of the most variable climates in the world. Against this backdrop, across the decades, we're continuing to see increasing temperatures, warmer oceans, changes to when and where rain falls and higher sea levels," Dr. Clark said.

"The sea-surface temperatures have warmed by 0.9°C since 1900 and greenhouse gas concentrations continue to rise."

CSIRO and the Bureau of Meteorology play a key role in monitoring, measuring and reporting on weather and climate, contributing to improved understanding of Australia's changing global climate system. *State of the Climate 2014* is the third report in a series and follows earlier reports in 2010 and 2012.

State of the Climate: Fast Facts

Temperature

- Australia's mean surface air temperature has warmed by 0.9°C since 1910.
- Seven of the ten warmest years on record have occurred since 1998.
- Over the past 15 years, the frequency of very warm months has increased five-fold and the frequency of very cool months has declined by around a third, compared to 1951-1980.
- Sea-surface temperatures in the Australian region have warmed by 0.9°C since 1900.

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C40 mayors scaling up solutions for resilient, livable cities

By **Holger Dalkmann**

More than 70 percent of the world's population will live in cities by 2050. So cities represent the single greatest opportunity for targeted, meaningful actions that create impact on the ground, improve the quality of life for billions of people and reduce the risks of climate change.

This opportunity was a key theme at last week'sC40 Cities Mayors Summit in Johannesburg, South Africa. The conference brought together members of C40 Cities, a group of mayors and top officials from more than 45 cities who are committed to combating climate change and furthering urban sustainability. In addition to releasing the "Climate Action in Megacities 2.0 (CAM)" report (PDF), which highlights the actions C40 cities are already taking, the summit discussed uniquely urban challenges to sustainability.

A clear message emerged: If we are to create livable cities for a growing urban population, city leaders throughout the world must take action to provide access to education, jobs and health services. Sustainable urban transport and smart city design play key roles in expanding this access for all residents.

3 challenges to creating sustainable cities

The decisions made today will shape how the cities of tomorrow operate. Developing cities in particular have the opportunity to avoid lock-in and auto-dependency, designing cities that are efficient and accessible for all. These cities must look to Barcelona's compact urban form and not Atlanta's sprawl as a blueprint for future development. But creating urban centers that are both prosperous and climate-resilient will require immediate action across a few key hurdles:

Increasing motorization

Private motorized transport accounts for less than one-third of trips reported by C40 cities, but contributes to73 percent of GHG emissions. Cities simply cannot meet emissions-reduction goals and curb the impacts of climate change without a plan for transport demand management that enables safe, sustainable urban mobility for all.

Traffic safety

Traffic deaths are a huge economic burden on cities. By 2030, traffic fatalities are expected to become the fifth leading cause of death globally (PDF). No city truly can call itself livable unless it can provide safe access to goods, services and opportunities for all its residents.

Air quality

Deteriorating air quality and harmful pollution are rampant in today's cities. This winter, for example, New Delhi's air pollution was 60 times higher than the level deemed to be safe. Protecting human health and ecosystems means reducing cities' pollution woes.

This article originally appeared at World Resources Institute. Bicycle image by Stefanovi via Shutterstock.

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WMO Annual Climate Statement Highlights Extreme Weather Events

Geneva – The year 2013 once again demonstrated the dramatic impact of droughts, heatwaves, floods and tropical cyclones on people and property in all parts of the planet, according to the World Meteorological Organization's Annual Statement on the Status of the Climate.

The report confirmed that 2013 tied with 2007 as the sixth warmest on record, continuing the long-term global warming trend. It provided a snapshot of regional and national temperatures and extreme weather events as well as details of ice cover, ocean warming, sea level rise and greenhouse gas concentrations – all inter-related and consistent indicators of our changing climate.

Thirteen of the fourteen warmest years on record have all occurred in the 21st century, and each of the last three decades has been warmer than the previous one, culminating with 2001-2010 as the warmest decade on record. The average global land and ocean surface temperature in 2013 was 14.5°C (58.1°F) – 0.50°C (0.90°F) above the 1961–1990 average and 0.03°C (0.05°F) higher than the 2001–2010 decadal average. Temperatures in many parts of the southern hemisphere were especially warm, with Australia having its hottest year on record and Argentina its second hottest.

"Naturally occurring phenomena such as volcanic eruptions or El Niño and La Niña events have always contributed to frame our climate, influenced temperatures or caused disasters like droughts and floods. But many of the extreme events of 2013 were consistent with what we would expect as a result of human-induced climate change. We saw heavier precipitation, more intense heat, and more damage from storm surges and coastal flooding as a result of sea level rise – as Typhoon Haiyan so tragically demonstrated in the Philippines," said WMO Secretary-General, Mr. Michel Jarraud.

"There is no standstill in global warming," said Mr Jarraud. "The warming of our oceans has accelerated, and at lower depths. More than 90 percent of the excess energy trapped by greenhouse gases is stored in the oceans. Levels of these greenhouse gases are at record levels, meaning that our atmosphere and oceans will continue to warm for centuries to come. The laws of physics are non-negotiable."

"Weather forecasting, including of storms and other hazards, has become much more skilful in recent years. As demonstrated in October by Cyclone Phailin, the second strongest tropical cyclone to strike India since modern records began, improved forecasting, combined with government action to build national resilience and provide shelters, greatly reduces the loss of life. We must continue strengthening preparedness and early warning systems and implementing a multi-hazard approach to disaster risk reduction," he said.

The Status of the Climate Report contains a peer-reviewed case study into Australia's record warmth in 2013. The study by scientists at the ARC Centre of Excellence for Climate System Science, University of Melbourne, Australia, used nine state-of-the-art global climate models to investigate whether changes in the probability of extreme Australian summer temperatures were due to human influences.

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Fukushima's children at centre of debate over rates of thyroid cancer

By Justin McCurry *in Fukushima, for theguardian.com*

Young children play in a Red Cross 'Smile Park' – a play facility set up for Fukushima's children in Fukushima city. Photograph: Jeremy Sutton-Hibbert

When doctors found several tiny nodules on his 12-year-old daughter's thyroid gland, Toshiyuki Kamei refused to let parental fear get the better of him. The symptoms are not uncommon, and the probability that they will develop into something more serious is low.

Yet Kamei can be forgiven for occasional moments of doubt: his daughter, Ayako, is one of almost 400,000 children who were living in Fukushima on 11 March 2011 – the start of the world's worst nuclear accident for a quarter of a century.

"As a parent, of course I worry, but my daughter is taking it in her stride," said Kamei, who lives in Iwaki, a city about 40km (25 miles) south of the wrecked Fukushima Daiichi nuclear power plant. "She doesn't tell me if it's on her mind, and I've decided not to ask her about it."

Three years after the plant suffered a triple meltdown that released huge quantities of radiation into the atmosphere, medical authorities in Fukushima prefecture are reporting a significant rise in the number of thyroid cancer cases among local children and young adults.

The results have prompted a bitter debate about the potential effects the meltdown had on the health of hundreds of thousands of children. Either the higher-than-normal rates of thyroid cancer are connected to the nuclear accident, or they are the inevitable result of a testing regime unprecedented in size, and conducted using state-of-the-art medical equipment.

A doctor conducts a thyroid examination on four-year-old Maria Sakamoto in Iwaki town. Photograph: Damir Sagolj/Reuters

Last month, the number of confirmed and suspected cases of thyroid cancer among people aged 18 or below at the time of the accident rose to 75, compared with 59 at the end of last September. Of the current total, 33 cases have been confirmed as cancer.

Under the guidance of Fukushima Medical University, local health authorities have so far tested 254,000 out of 375,000 Fukushima children and adolescents, who will continue to be screened regularly throughout their lives.

Medical officials in Japan dismissed a link with the nuclear accident, but conceded that the results required further analysis.

"We hope to look for unknown types of gene mutations, other than those known to be associated with the generation of thyroid gland cancer, to study if they could serve as markers for determining if the cancers were induced by radiation," said Shinichi Suzuki, a professor of thyroid gland surgery at the university.

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Long-Term Warming Likely to Be Significant Despite Recent Slowdown

A new **NASA** study shows Earth's climate likely will continue to warm during this century on track with previous estimates, despite the recent slowdown in the rate of global warming.

This research hinges on a new and more detailed calculation of the sensitivity of Earth's climate to the factors that cause it to change, such as greenhouse gas emissions. Drew Shindell, a climatologist at NASA's Goddard Institute for Space Studies in New York, found Earth is likely to experience roughly 20 percent more warming than estimates that were largely based on surface temperature observations during the past 150 years.

Shindell's paper on this research was published March 9 in the journal *Nature Climate Change*.

Global temperatures have increased at a rate of 0.22°Fahrenheit (0.12°Celsius) per decade since 1951. But since 1998, the rate of warming has been only 0.09°F (0.05°C) per decade – even as atmospheric carbon dioxide continues to rise at a rate similar to previous decades. Carbon dioxide is the most significant greenhouse gas generated by humans.

Some recent research, aimed at fine-tuning long-term warming projections by taking this slowdown into account, suggested Earth may be less sensitive to greenhouse gas increases than previously thought. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), which was issued in 2013 and was the consensus report on the state of climate change science, also reduced the lower range of Earth's potential for global warming.

To put a number to climate change, researchers calculate what is called Earth's "transient climate response". This calculation determines how much global temperatures will change as atmospheric carbon dioxide continues to increase – at about 1 percent per year – until the total amount of atmospheric carbon dioxide has doubled. The estimates for transient climate response range from near 2.52°F (1.4°C) offered by recent research, to the IPCC's estimate of 1.8°F (1.0°C). Shindell's study estimates a transient climate response of 3.06°F (1.7°C), and determined it is unlikely values will be below 2.34°F (1.3°C).

Shindell's paper further focuses on improving our understanding of how airborne particles, called aerosols, drive climate change in the Northern Hemisphere. Aerosols are produced by both natural sources – such as volcanoes, wildfires and sea spray – and sources such as manufacturing activities, automobiles and energy production. Depending on their make-up, some aerosols cause warming, while others create a cooling effect. In order to understand the role played by carbon dioxide emissions in global warming, it is necessary to account for the effects of atmospheric aerosols.

While multiple studies have shown the Northern Hemisphere plays a stronger role than the Southern Hemisphere in transient climate change, this had not been included in calculations of the effect of atmospheric aerosols on climate sensitivity. Prior to Shindell's work, such calculations had assumed aerosol impacts were uniform around the globe.

This difference means previous studies have underestimated the cooling effect of aerosols. When corrected, the range of likely warming based on surface temperature observations is in line with earlier estimates, despite the recent slowdown.

Details of the Full Study:

Shindell, D.T., 2014: **Inhomogeneous Forcing and Transient Climate Sensitivity**. *Nature Climate Change*, doi:10.1038/nclimate2136.

Source: NASA-GISS. <ReadMore>

Walmart Puts Consumer Product Suppliers on Notice: The Chemical Phase-out Starts Now

By Michelle Mauthe Harvey *and* **Sarah Vogel, *EDF STAFF***

Today dozens of consumer product makers will get a letter from Walmart detailing new requirements on phasing out a list of toxic chemicals found in goods sold by the world's largest retailer. The comprehensive initiative is by far the largest and most ambitious of its kind. It reflects a growing trend in which consumer and wholesale purchasing power are combining to change the chemical makeup of the products we see on store shelves and bring into our homes.

The policy and its implementation guide can be found *here*.

Walmart worked closely with vendors and non-profit advisors including Environmental Defense Fund. Together they spent several years developing the policy, and figuring out how to implement the unprecedented measures across a sprawling global supply chain with hundreds of suppliers. The solution had to be robust, credible and transparent. It also had to set an ambitious goal for suppliers without creating impossible hurdles.

The policy covers formulated (chemical intensive) consumable products sold in US Walmart and Sam's Club stores, including health and beauty aids; cosmetics and skincare; baby care products; pet supplies; and household laundry and cleaning products. Moving forward, this list is expected to grow.

It's been a long and challenging road, but it's led us exactly where we hoped to be. Now the responsibility falls on suppliers to deliver the goods, and on Walmart to make sure everyone keeps their eye on the ball. EDF will be keeping a very close eye on the progress.

The process started with a list of hundreds of priority chemicals. Walmart defines a priority chemical as one that "meets the criteria for classification as a carcinogen, mutagen, reproductive toxicant, or is persistent, bioaccumulative, and toxic; or any chemical for which there is scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern." Assessment was based on a large set of authoritative, scientific and regulatory reference lists.

Back in 2006, Walmart began asking suppliers of formulated products to disclose their ingredients. Last fall, the company announced it had zeroed in on a short initial list of chemicals it would target for reduction, restriction and elimination. While Walmart is communicating with suppliers whether they have chemicals in their products that are on this initial list, the full list is not currently being shared publicly.

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Chinese premier declares war on pollution in economic overhaul

By Tania Branigan in Beijing, *for theguardian.com*

China will declare war on pollution, as part of a commitment to overhauling its unsustainable economic model, the country's premier said.

Smoke billows from the chimneys of a heating plant in Jilin province. Photograph: China Stringer Network/Reuters

Li Keqiang said reform was the top priority as he set out his first annual policy report since becoming premier of the world's second largest economy, but soothed anxieties about the impact by maintaining a 7.5% growth target.

He described pollution as "nature's red-light warning against the model of inefficient and blind development", underscoring the broader message that China must not only shut down coal-fired furnaces, but shift to a different kind of development.

Li was addressing the opening session of the National People's Congress (NPC), the largely rubber-stamp parliament that meets annually in Beijing. Amost 3,000 delegates at the Great Hall of the People observed a minute's silence for victims of Saturday's terrorist attack in Kunming as the meeting began.

Years of double-digit growth, driven by exports and investment, helped millions climb out of poverty but has led to social and environmental problems.

While the meeting opened under blue skies in Beijing, **official statistics showed that much of the year has been blighted by smog**.

Under President Xi Jinping, the leadership has been bolder in setting out a reform agenda after years of slow progress on promises to set the economy on a sustainable path.

Yao Wei, China economist for Societe Generale, cautioned: "They have promised to do all these things – speed up reform, fight pollution and manage debt risk – yet at the same time want to reach the same growth target as last year.

"Although the reforms are good in the long run, in the short term they're more likely to be negative for growth, so this target creates even more uncertainty."

She said if the government decided to shore up slowing growth it would resort to the old methods: infrastructure investment and faster credit growth. "That means the debt risk is only going to rise," she added.

China recorded 7.7% growth last year, but analysts say that level will be harder to achieve this year.

Li Wei and Stephen Green of Standard Chartered said some reformers had pushed for a target of 7%-7.5%.

"The ultimate decision appears to have been that Beijing cannot reform without a certain level of growth," they wrote.

But this year's report sets out the difficulties of reaching the target more clearly, warning that "deep-seated problems are surfacing; painful structural adjustments need to be made; the pace of economic growth is changing".

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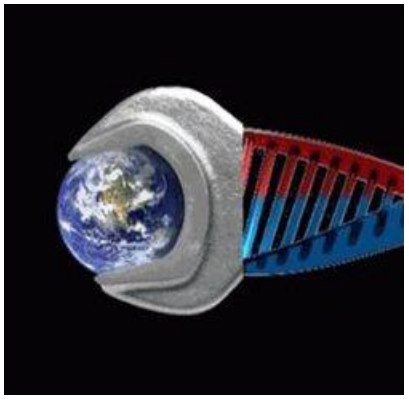
Climate Engineering: Minor Potential, Major Side Effects

Kiel - With global greenhouse gas emissions continuing to increase proposals to limit the effects of climate change through the large-scale manipulation of the Earth system are increasingly being discussed.

Researchers at the GEOMAR Helmholtz Centre for Ocean Research Kie l have now studied with computer simulations the long-term global consequences of several "climate engineering" methods. They show that all the proposed methods would either be unable to significantly reduce global warming if CO2 emissions remain high, or they could not be stopped without causing dangerous climate disruption. The study is published in the international journal *Nature Communications*.



Despite international agreements on climate protection and political declarations of intent, global greenhouse gas emissions have not decreased. On the contrary, they continue to increase. With a growing world population and significant industrialization in emerging markets such as India and China, the emission trend reversal necessary to limit global warming seems to be unlikely. Therefore, large-scale methods to artificially slow down global warming are increasingly being discussed.

They include proposals to fertilize the oceans, so that stimulated plankton can remove carbon dioxide (CO2) from the atmosphere, or to reduce the Sun's incoming radiation with atmospheric aerosols or mirrors in space so as to reduce climate warming. All of these approaches can be classified as "climate engineering".

"However, the long-term consequences and side effects of these methods have not been adequately studied," says Dr. David Keller from the GEOMAR Helmholtz Centre for Ocean Research Kiel. Together with colleagues, the expert in earth system modelling has compared several climate engineering methods using a computer model. The results of the study have now been published in the internationally renowned online journal *Nature Communications*.

"The problem with previous research was that in most cases the methods were studied with different models using different assumptions and different sets of earth system components, making it difficult to compare the effects and side effects of different methods," Dr. Keller says. He adds, "We wanted to simulate different climate engineering methods using the same basic assumptions and Earth system model."

For their study, the researchers chose five well-known climate engineering approaches: the reduction of incoming solar radiation, the afforestation of large desert areas in North Africa and Australia, and three different techniques aimed at increasing ocean carbon uptake. In parallel, the scientists also simulated future changes in the Earth system without climate engineering, based on the high-CO2 emission scenario used by the UN IPCC.

Click here to read/download the Full Study – "Potential Climate Engineering Effectiveness and Side Effects during a High Carbon Dioxide-Emission Scenario".

Source: GEOMAR.

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The alternatives to salt for battling ice: cheese, beets and ash

By Rachael Post, *for theguardian.com*

Bad weather has been a common occurrence this winter and as a result, the US has experience salt shortages. Photograph: Jamie Squire/Getty Images

As snow, ice and frigid temperatures continue to pound large portions of the US this winter, salt shortages and strained local budgets have sent states and municipalities scrambling for deicing alternatives.

The US uses millions of tons of rock salt each winter to keep roads and walkways safe, resulting in salty run-offs that pollute local groundwater, lakes, streams and rivers. Beyond sand and gravel, other deicing alternatives keep popping up, including potato juice and swine urea (yes, pig urine). So where are businesses innovating? Many of the alternative deicers highlighted below are sourced from waste products or byproducts of manufacturing processes.

Cheese brine

Cheese brine is a byproduct of making mozzarella with some surprising uses.

In Wisconsin, Polk County officials and a local company, F&A Dairy Products, came up with a mutually beneficial solution for cheese brine, a byproduct of making mozzarella and provolone. Local governments save on salt costs by using the brine to deice their roads, and the cheese company saves on disposal costs. Right now local counties use all of the brine that F&A produces, said Chuck Engdahl, F&A's wastewater manager. Salt soaked in cheese brine has a lower freezing point (-21F) than regular salt brine (-6F). Whether or not there's a unique odor, which a few have likened to whey, is disputable.

Salt treated with Beet Heet (pictured here) melts 65% more ice than untreated rock salt in an hour at 25°F, the company said. Photograph: K-Tech Specialty Coatings

Beet molasses

Across the Great Lakes States, **Beet Heet**, a product derived from molasses from sugar beet processing, is deicing roads. Salt treated with Beet Heet, a creation of K-Tech Specialty Coatings in Indiana, is effective at colder temperatures and lowers the freezing point of rock salt. Increased performance reduces the amount of salt needed. It also can be used to pre-treat roads before a storm.

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Carbon taxed companies cut emissions by 7% in past year, investor group says

By Lenore Taylor, *political editor, for theguardian.com*

Tony Abbott's climate policy has been criticised by an investor group. Photograph: Dean Lewins/AAP

Greenhouse emissions from Australian companies paying the carbon tax have fallen by 7% over the past year "in large part" due to the carbon price impost, the Investor Group on Climate Change has said.

Calculations by the group of official data from the Clean Energy Regulator shows carbon emissions from Australia's 350 largest corporate emitters – who are directly liable to pay the tax – fell from 342m tonnes in 2011-12 to 321m tonnes in 2012-13.

The group's chief executive, Nathan Fabian, said he believed the carbon tax was "the major contributor" to the decrease in emissions, although other factors did play a role, including the shutdown of some large electricity generators because of weather events and the closure of some major manufacturing operations.

Appearing before a Senate committee investigating the Coalition's Direct Action climate change plan, Fabian said the policy was not "investment grade" and investors were moving to Europe, the US and some South American countries to find "low-carbon opportunities".

Fabian's group represents institutional and other investors interested in the impact of climate change on investments.

He said his members were concerned that Direct Action was essentially "a short-term grants based scheme" and he believed the proposed emissions reduction fund would not provide sufficient incentives for investors and business to participate.

"We think banks will take a similar view," he told a Senate committee inquiry into the Direct Action scheme.

"My members are looking at the United Kingdom, Ireland, the United States, France and some South American countries as having more stable investment environments for low-carbon opportunities," he said.

He said the government's policy to abolish the carbon price and the Clean Energy Finance Corporation (CEFC), and its intention to review the renewable energy target as well as uncertainty over funding for the Australian Renewable Energy Agency "appears to be a very clear signal that Australia is not the market for low-carbon investing".

The so-called "green bank", the CEFC, which is tasked with encouraging low-carbon investment in Australia and which the government is seeking to abolish, also appeared before the inquiry.

A Nationals senator, John Williams, challenged the CEFC to explain why it had refinanced the Macarthur windfarm in July 2013 at a time when the project was already operating.

The CEFC chief executive, Oliver Yates, said refinancing was an important part of the CEFC role because it meant capital was turned over and it helped bring new investors into clean technology projects in Australia.

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An inside look at running a cleantech startup in India

By **Rupesh Shah**

When listening to feedback on the Simpa Solar Home System in Mathura, India, one man told me: "If this product had been around six years ago, my son would still have a mother."

When his little boy was crying one night, the mother got up with only a candle because there was no electricity for light. When she reached for milk, she was bitten by a poisonous snake and died. Clearly, flicking on a light switch would have saved her life.

Such is daily life for 2.5 billion people around the world who are locked into situations with bad or no electricity. The centralized electricity infrastructure may not have not reached them or if it has, there are daily cuts or even worse — outages that last days or weeks.

This energy poverty is extremely limiting and stifles development. There is no power for lights so shops can stay open longer or neighbors can connect on their porches, no reliable power to consider investing in machinery to make daily tasks easier.

Small solar home systems (SHS) can solve this problem. In Bangladesh, Grameen Shakti sells 100,000 systems a year to rural households. SHS can power multiple lights for morning and evening, a fan for cooling and comfort, and easily charge several mobile phones. These systems range between $150 to $300, depending on the type of lights and how long they will run. Not surprisingly, these price points keep most rural households away because they only make $5 or less a day.

Simpa Networks, founded in 2010 by Paul Needham, Jacob Winiecki and Michael MacHarg, is attempting to make these systems not only affordable by rural households, but also investible by commercial capital.

Banwarelal, a new customer, hangs one of his new lights outside. Customers love to sit together and talk at night in front of their homes; light makes this much more pleasant.

Simpa added a meter with a keypad and display to every SHS. Customers can purchase a Simpa SHS packaged with finance. After a small down payment, customers pay for energy days. When they pay, they enter a code on the keypad, which, if valid, gives the customers energy for as many days as they have paid for. If an invalid code or no code is entered, the meter turns off and the system stops generating electricity. Simpa's software generates unique codes for every system, so Simpa can track when and if each product is paid.

I learned about Simpa in 2011 at the SOCAP Conference while I was director of corporate sustainability at Intuit. While I absolutely loved my mission at Intuit, I felt I was missing a chance to have direct, tangible positive impact on peoples' daily lives. The idea of using technology to make renewable energy accessible and affordable to rural households in India seemed like a perfect opportunity for me.

Kiran, Simpa's product designer, teaches a new customer how the panel works to charge the battery and produce the light. Many customers have heard of solar, but it has not been brought to their doorstep and made so accessible to them

It's been six months and the learning curve is just as steep as my first week. I was hired to run Simpa's product team to ensure that we had a compelling product with clear requirements targeted at specific customer segments.

Despite my focus on Simpa's product, I could see plenty of other opportunities for improvement. My first learning was that organizational clarity and alignment were job one. Fortunately, I received world-class leadership development during my time at Intuit and learned how to think strategically, build teams, manage people, create alignment and prioritize.

Intuit CEO Brad Smith shared advice on how to approach my new role as a Simpa leader. He recommended that first I ensure all Simpa executives agree and align on four areas:

1. What is our mission and why do we exist?
2. What are our values?
3. What are our core capabilities?
4. What will success look like?

Simpa's executive team took Smith's advice and we started on a journey to clarify these key questions. We developed a clear strategy and the mission and vision were reinforced, company values were clarified and enhanced, our core capabilities were defined and key metrics were discussed and agreed. Soon after, we had a re-organization that led to a tighter executive team with clear accountability and responsibility. My role expanded to also run the hardware, software and supply chain teams.

At this point, Simpa had pivoted to a new geography, a new sales and support model and a new product. With everything happening at once, we were clearly building the plane as we were flying it. Many startups go through this phase where the clock ticks and everything seems urgent and important. Using a few key principles to make decisions seem to help a little. For example, we decided that our product had to be of highest quality to ensure we started to build trust with the new sales channel and with customers. We sacrificed other aspects, including cost, having a large bulky product vs. a compact one, making installation times longer due to such things as more onsite wiring, all in the name of high quality.

However, despite those principle-based decisions and frequent conversations about priorities, everything still seemed critical and important. I tried very hard to balance short-term objectives (build the products quickly) with some longer-term objectives, such as developing new products based on our recent customer insights. I tried to use everything I had learned about leadership and management in this situation. I promoted our best people to bigger roles, gave constant feedback, supported a bias for action, but yet everything still seems to be a fire drill.

Villager image by FiledIMAGE via Shutterstock.

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India may become a Water Scarce Country by 2020

New Delhi, India – India has 4% of the world's water which has to cater for 16% of the world's population, leading to steady shrinking of per-capita availability. There will be increased pressures on industry to conserve water as India approaches water stress conditions and could be water scarce by 2020, finds CDP's report titled"Safeguarding India's Water Resources: The Business Case for Water Disclosure in India".

Nearly 50% of villages do not have any source of protected drinking water. Rapid population growth coupled with mass industrialization, expanding agriculture and urbanization has resulted in an increase in competing demands for water resources. The country faces a looming water crisis where demand is set to outstrip supply by 50% by 2030, according to the 2030 Water Resources Group. As a result, governments are increasingly putting pressure on industries to adopt best international practices to improve water management.

Grundfos Pumps India Pvt. Ltd. (Grundfos India), has partnered with CDP to launch the report prepared by CDP and KPMG, which aims to promote water stewardship and reporting among the corporate community in the country

Commenting on this latest Grundfos India initiative focused on water conservation, Ranganath N. K., Managing Director, Grundfos India, said, "Water is a major driver for sustenance of a civilisation, food security and economic prosperity. Its mismanagement can result in significant harm to the environment and to the people. Effective management of water resources and use is one of the most critical business and sustainability challenges of the 21st century. We hope that through this report, we are able to help fuel the acceptance of water auditing and annual water reporting within corporate India."

CDP's water report identifies that companies are increasingly aware of water related risks but actions to manage water issues at a corporate level are inadequate. An increasing number of stakeholders are calling for transparent and comparable disclosure of water related information from Indian companies for consideration in decision making. Interestingly, the report also highlights how water presents a strategic opportunity for companies to improve financial and brand performance. It stresses that disclosure is good for business: The process of water disclosure helps businesses and institutional investors to better understand the risks and opportunities associated with water scarcity and other water-related issues whilst promoting water stewardship and delivering insight that enables companies to take intelligent action to manage this critical resource.

This report is aimed at government, business and investor communities and states the case for why corporate water disclosure is the most effective way to stimulate a rational and coherent business response to the issues of water availability. The report finds that:

- India faces an impending water crisis as it moves on into the 21st century with the potential to stifle economic growth.
- Water is a critical business issue that deserves serious attention.
- An increasing number of stakeholders are calling for transparent and comparable disclosure of water related information from Indian companies for consideration in decision making.
- Indian businesses are currently underestimating water-related risks due to a lack of effective measurement and monitoring.
- The introduction of CDP's water program in India will address this information gap by driving companies to measure, monitor and ultimately manage water-related risks.

Check the following link to read/download the Full Report:

https://www.cdp.net/CDPResults/CDP-india-business-case-for-water-disclosure.pdf

Source: Grundfos India.

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Pollutionwatch: How clean is the air we breathe at home?

By Gary Fuller, *for The Guardian*

Women in the Indian state of Gujarat are shown the benefits of a variety of clean lighting and stoves – badly ventilated solid fuel cooking causes over 1.6 million deaths annually in the developing world. Photograph: Sam Panthaky/AFP/Getty Images

The World Health Organisation estimates that we spend around 90% of our time indoors but relatively little attention is paid to indoor air quality. Being indoors can offer some protection from outdoor air pollution but it can also expose us to other air pollution sources.

There is good awareness of issues around badly maintained gas appliances, radioactive radon gas and second-hand tobacco smoke but indoors we can also be exposed to nitrogen dioxides from gas cooking and solvents that slowly seep from plastics, paints and furnishings. The lemon and pine scents that we use to make our homes smell fresh can also react chemically to generate air pollutants and ozone based air fresheners can cause serious indoor air pollution problems. The US Environmental Protection Agency underlines that the best way to clean indoor air is ventilation with clean outdoor air, but this can be difficult due to weather conditions and outdoor air pollution.

Travelling in cars and buses exposes us to exhaust from other vehicles and several studies highlight high particle concentrations in tube and metro systems.

Despite the amount of time we spend indoors, improvements in outdoor air pollution have led to improved population health, and indoor smoking bans have been followed by decreases in the numbers of people having heart attacks.

Indoor air pollution problems in the developed world are tiny compared to those in developing countries where badly ventilated solid fuel cooking is thought to cause over **1.6 million deaths** annually, over half of these being children. Strategies to improve this include better stoves, better fuels and keeping children away from cooking fires.

<Source>

Could Chennai become India's model green city?

By Carlin Carr in Mumbai, *for theguardian.com*

Traffic congestion is a major problem in most Indian cities, with hardly any space for pedestrians. Photograph: Jagadeesh NV/Reuters

Rapid urbanisation across India poses a new set of challenge for the country's cities. With few blueprints in place to handle the explosive growth, ad hoc urban planning has dominated. Nowhere is this more apparent than in urban public transport.

Inadequate public systems force millions of daily commuters in cities like Chennai – commercial capital of south India – to inch for room in overcrowded buses and trains. Chennai's buses carry **30% more passengers every day** than the international average. More and more affluent commuters abandon the system and take to their own vehicles. Tamil Nadu, Chennai's home state, has seen a **95% increase in car ownership** in the past decade. **Short-sighted solutions** tend to focus on bridges, flyovers and roads to ease congestion. The trend disproportionately impacts the health and safety of the poor who primarily walk or use public transport. A study in Mumbai found that overall, 44% of the city walks to work, though **among the poor**, that number jumps to 63%. Still, the ever-expanding number of cars has brought **major complications beyond traffic jams**: extremely poor air quality and a spike in road accidents has put vulnerable communities – those who often live and work on the roadsides – at greatest risk.

The southern coastal city of Chennai is a testament to these unsustainable car-centric choices, but it has set out to right its wrongs. In an unprecedented move, **15 key urban departments came together** in 2010 to form a central decision-making body, the **Chennai Unified Metropolitan Transport Authority** (Cumta), to reroute the city on a path to sustainable, integrated transport. Their goal is ambitious: to focus on cycling, walking and rapid bus transit in an increasingly car-loving country.

"If you speak to people, there is a sea change in attitude. Everyone is talking about how to create better facilities for pedestrians and improving public transport," says Shreya Gadepalli, director of the**Institute for Transportation & Development Policy (ITDP)**, an international organisation that has stepped in to catalyse and expand Cumta's efforts. She says it has been inspiring to watch Chennai's municipal engineers, many of them who came sceptically to the initiative, act as evangelists for making India's urban areas more pedestrian friendly. Chennai's new approach hopes to provide new, safer transport linkages for poor communities.

A study last year found that on average, **Chennai residents commute 72 minutes each way.** The poor, many of whom have been resettled to outskirt areas of the city, often have the **longest commutes and the fewest transport options.**

Important steps have been made by **Chennai's top officials** to reclaim road space for pedestrians where there was little or none in the past. Footpaths have been expanded and carriageways narrowed in 40 locations around the city. That number will jump to 70 soon and 400 by next year. "Every street where a bus plies will have a new sidewalk," says Gadepalli, recognising that the most marginalised communities will significantly benefit from these additions.

Rishi Aggarwal, founder of the **Walking Project** in Mumbai, is encouraged by what is happening in Chennai, but he's also cautious until he hears from those on the ground – the ultimate jury, Chennai's pedestrians. "We definitely need some cities to emerge as models of excellence creating inspiration and embarrassment for other cities," he says.

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This is India's greenest building

By Sidharth Pandey, *NDTV*

New Delhi: India's environment ministry has a new 'green' address. Prime Minister Manmohan Singh today inaugurated the new headquarters in New Delhi which took three years in the making and cost more than Rs. 200 crores.

"It's the greenest building in India" said Rural Development Minister Jairam Ramesh, who was the Environment Minister when the building plans were finalised and approved.

Located in Jor Bagh, the eight-storey building stands out in the upmarket neighborhood of the capital. The first thing that grabs the eye is the roof which seems to be hanging in the sky.

Each time the lift in the building halts on a floor, it generates a small amount of energy, said Dr Arun Kumar Trivedi, an engineer who was one of the key people in the planning of the building. "There are several features which we had planned, some got built others not, but even then this is a marvel of what can be achieved in the country," he said.

On the terrace are huge solar panels. This is where the building generates almost 1 MW of power for its needs. The panels, imported from the US, have a high efficiency conversion rate of 18 percent.

The building also has three levels of automated underground parking which can house 300 cars. "We can retrieve any car in three minutes and empty the entire lot in 40" said one of the attendants.

Thick cables from the roof converge in the power room where the DC power is converted into AC current to be used in the building. Computers here direct the power to where it is needed in the building; any extra power is routed through a cable that is connected to the power grid and is fed back to the city.

Another feature of the building is the use of Geo thermal heat exchange system to cut down the power needed to run air conditioners.

The building also recycles all of its water. Engineers claim treated waste water, which is used in the air conditioning system and also for watering the greens, will reduce water demand by over 50 percent.

The building which has been given a 5-star rating by TERI's GRIHA and a platinum rating by Leadership in Energy and Environmental Design (LEED) may open to the public as part of knowledge exchange, say senior officials. A lot, however, will depend on the ability of officials to maintain and run the systems which have earned the building its green rating.

<Source>

ICERE 2014

International Conference on Environment and Renewable Energy

7-8 May 2014, Paris, France

ICERE 2014 (International Conference on Environment and Renewable Energy) is being organized on 7th and 8th May 2014. Organizing chair of the conference is Elena Ringo Editor-in Chief International Scientific Journal. ICERE 2014, is to bring together innovative academics and industrial experts in the field of Environment and Renewable Energy to a common forum.

The aim of this conference is to promote environmentally safe and economically sustainable renewable energy, to create theoretical base of the utilization and implementation of renewable energy sources.

The aim of the conference is to promote research in the field of Environmental science and development of renewable Energy. Another goal is to facilitate exchange of new ideas in these fields and to create a dialogue between scientists and practitioners.

Topics include interesting topics like climate change, global warming, new perspectives of renewable energy, waste to energy, heating and cooling applications, low energy architecture, energy saving in buildings, low energy architecture, hydro power and renewable energy economics.

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WASTE MANAGEMENT 2014

12 - 14 MAY, 2014

ANCONA, ITALY

The International Conference on Waste Management and the Environment is organized every two years by the Wessex Institute of Technology. This seventh conference titled "WASTE MANAGEMENT 2014" is being organised jointly by Wessex Institute of Technology and UK Università Politecnica delle Marche, Italy. The Conference provides a forum for the exchange of scientific information and work on the current situation of waste management amongst professionals, researchers, government departments and local authorities.

There is growing awareness of the detrimental effects of current waste disposal and a movement towards greater accountability for effective waste management. Better practices and safer solutions are required. This creates a need for more research on current disposal methods such as landfills, incineration, chemical and effluent treatment as well as recycling, waste incineration, clean technologies, waste monitoring, public and corporate awareness, and general education. Waste Management is one of the key problems of modern society due to the ever expanding volume and complexity of discarded domestic and industrial waste.

The topics of the conference include Reduce, reuse, recycle and recovery (4Rs), Cost and benefits of management options, Waste incineration and gasification, Energy from waste, Industrial waste management, Nuclear and hazardous waste, Agricultural waste, Wastewater, eWaste and Emergent pollutants.

<Brochure> <ReadMore>

Water Pollution 2014

26 - 28 May, 2014

The Algarve, Portugal

Water Pollution 2014 is the 12th International Conference in the series of Modelling, Monitoring and Management of Water Pollution, the event will take place in Algarve, portugal. The conference provides a forum for discussion amongst scientists, managers and academics from different areas of water contamination. The information exchanged in this international meeting shall be of great benefit to all involved with water pollution problems.

The environmental problems caused by the increase of pollutant loads discharged into natural water bodies required the formation of a framework for regulation and control. This framework needs to be based on scientific results that relate pollutant discharge with changes in water quality. The results of these studies will allow industry to apply more efficient methods of controlling and treating waste loads, and water authorities to enforce appropriate regulations regarding this matter.

The topics of conference include important and relevant topics like Water quality, Groundwater and aquifer issues, Environmental monitoring and control, Remediation, Agricultural contamination, Wastewater treatment and management, Offshore pollution and oil spills and Pharmaceutical and pesticides pollution.

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CSR 2014

International Conference

on

Corporate Social Responsibility & Sustainable Development

June 02-05, 2014

Jakarta (Indonesia)

The conference CSR 2014 is being organized jointly by Society For Education and Research Development, India, Gundarma University, Indonesia and Musi Rawas Economic Institute, Indonesia. The conference will take place between June 02 and 05, 2014 at Mercure Convention Centre Ancol in Jakarta, Indonesia. CSR2014 will present the current CSR models and practices, as well as the next generation of issues that business leaders and society will face. This conference aims to provide a common platform to the corporate, government agencies, NGOs, civil society, academics and the other groups to share their expectations, aspirations and responsibilities. Conference also has the objective to bring together representatives from various parts of the globe to share their experiences, challenges and opportunities.

Eminent speakers from USA, India, Turkey and several other developing and developed countries shall give deliberations in the conference. The topics of interest include Socially responsible products, Low –Carbon Energy & sustainable industry, Mining and Sustainability principles, Sustainability Reporting Standards and Supply Chain Sustainability.

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The Times of India, Delhi dated February 26, 2014

DDA landfill plan may pollute river

NGO Says Site Vital For Groundwater Recharge, But Agency Not Listening

Jayashree Nandi | TNN

New Delhi: Creating landfills in two villages of Zone P-II in north Delhi, a part of Yamuna floodplains, may contaminate groundwater and further pollute the river. A proposal for this has, however, been made in the zonal development plan by DDA.

Though Delhi's 4 landfills are nearly saturated, necessitating setting up of alternative sites, environmentalists say locating landfills in floodplains can be disastrous. Members of Yamuna Jiye Abhiyan have written to the lieutenant governor and Delhi Development Authority for identifying a new site, but a reply from DDA suggests that their objections will no longer be considered.

In a letter dated February 4, 2014, DDA's planning department explains that the development plan of Zone P-II was notified in 2010 only after inviting objections and recommendations of various expert committees.

"DDA planners are looking at the issue with a closed mind. Zone P-II, falling between Yamuna and a national highway, is an important groundwater recharge zone and an agricultural area. Sanitary landfills shouldn't be located in such an eco-sensitive zone because leachate—liquids from decomposing waste in a landfill—will pollute groundwater and the river," Manoj Misra, convener, Yamuna Jiye Abhiyan, said.

Bakhtawarpur and Hamidpur, the proposed sites, are largely rural and fall within the agricultural belt. A 1936 map of the zone shows some channels and streams passing through these villages. These have dried up now. The plan is to make most of the area "urbanizable". "Zone P-II is as important as Zone O, the river zone. I think this area is potentially a great source of water and food security. It shouldn't be urbanized," added Misra.

The Parliamentary Standing Committee on urban development has pulled up the government for not considering "eco-friendly" ways of disposal like composting. "The mountain of municipal solid waste that is produced everyday has to be managed in a manner that will ensure least pollution—water table contamination, air pollution and zero health and nuisance value to the human population near the dumping sites," it has said. The committee urged MoEF to ensure that urban local bodies implement the ministry's guidelines of choosing landfill site only in consultation with it.

This also reflects a waste management crisis in Delhi. Instead of managing waste at source, the city is desperately looking for more landfills. The ones at Okhla, Ghazipur and Bhalswa, cannot be called landfills at all, according to Delhi Pollution Control Committee. "These are just dumping sites where a lot of waste is being piled up but not managed. They are not built scientifically," said Sandeep Misra, member secretary of DPCC, which had refused to grant licence to these so-called landfills. After repeated demands for more landfills, 10 sites were identified, including those at these two villages.

The Deccan Chronicle, Hyderabad dated 27, February, 2014

Nuclear winter hits Beijing

■ Particulate matter in air at 20 times the permissible limit

Beijing, Feb. 26: Scientists in China have warned that the country's toxic air pollution is now so bad that it resembles a nuclear winter, slowing photosynthesis in plants – and potentially wreaking havoc on the country's food supply, the *Guardian* reported

Beijing and broad swaths of six northern provinces have spent the past week blanketed in a dense pea-soup smog that is not expected to abate until Thursday.

Beijing's concentration of PM 2.5 particles – those small enough to penetrate deep into the lungs and enter the bloodstream – hit 505 micrograms per cubic metre on Tuesday night. The World Health Organisation recommends a safe level of 25.

The worsening air pollution has already exacted a significant economic toll, grounding flights, closing highways and keeping tourists at home.

On Monday 11,200 people visited Beijing's Forbidden City, about a quarter of the site's average daily draw.

New research suggested that if the smog persists, Chinese agriculture will suffer conditions "somewhat similar to a nuclear winter," He Dongxian, an associate professor at China Agricultural University's College of Water Resources and Civil Engineering was quoted as saying by the *Guardian*.

Chinese citizens wearing masks at the haze-covered Tiananmen Square in Beijing. China's National Meteorological Centre issued a "yellow" smog alert for much of the country's north, the fifth consecutive day of heavy pollution. — *AFP*

She has demonstrated that air pollutants adhere to greenhouse surfaces, cutting the amount of light inside by about 50% and severely impeding photosynthesis, the process by which plants convert light into life-sustaining chemical energy.

According to the report, she tested the hypothesis by growing one group of chilli and tomato seeds under artificial lab light, and another under a suburban Beijing greenhouse. In the lab, the seeds sprouted in 20 days; in the greenhouse, they took more than two months.

"They will be lucky to live at all," Prof He told the *South China Morning Post* newspaper.

She warned that if smoggy conditions persist, the country's agricultural production could be seriously affected.

"Now almost every farm is caught in a smog panic," she said. Earlier, a report emerged claiming that Beijing's pollution made the city almost "uninhabitable for human beings". — *Agencies*

MASKS OUT OF STOCK IN CHINA

Beijing, Feb. 26: China's biggest online face-mask sellers were running out of stock on Wednesday as consumers rushed to protect themselves from smog that has shrouded large swathes of northern China for a week.

Beijing's official reading for PM 2.5 — small airborne particles which easily penetrate the lungs and have been linked to hundreds of thousands of premature deaths — stood at 501 micrograms per cubic metre on Wednesday afternoon.

The World Health Organisation's recommended safe limit is 25.

An alternative measure by the US embassy in Beijing said PM 2.5 levels were at 542 in the city. — *AFP*

The Times of India, Delhi dated February 27, 2014

100 trees felled in Okhla sanctuary

Purusharth Aradhak | TNN

Noida: Even though UP government has claimed that it is taking all steps to protect Okhla Bird Sanctuary, the forest department has ironically allowed the irrigation department to cut nearly 100 fully-grown trees for embankment strengthening in the area. Environmental experts say that only the wildlife board can allow cutting of trees in the protected wildlife zone. When contacted, Gautam Budh Nagar district forest department chose to remain silent on the issue.

The UP irrigation department has not only cut trees but also destroyed vegetation in the name of strengthening the Yamuna embankment near Jamia Nagar in Delhi.

Environmentalist Swarnima Singh was irate over this decision of the government and said that not a single tree can be felled in a protected buffer zone without obtaining prior environmental clearances from the National Board for Wildlife. "The government has no right to allow cutting trees from a protected wildlife habitat. Migratory birds used to throng to this huge vegetation and old trees, but now their habitat has been destroyed," Singh claimed.

Officials of the UP irrigation and forest departments, however, believe that tree felling will not affect the sanctuary, which was declared as protected reserve in 1990. "We have no idea of how many trees were felled for the Yamuna embankment strengthening project. But UP irrigation department took permission from the UP chief wildlife warden to cut the trees," said a senior UP forest officer, on the condition of anonymity.

The matter of protecting Okhla Bird Sanctuary is before the National Green Tribunal which has directed the Centre, UP, Delhi and Haryana governments to take measures to protect this reserve green buffer zone.

TOI file photo

VANISHING HABITAT: Experts fear the tree-felling will hit the sanctuary

UP irrigation department has not only cut trees but also destroyed vegetation in the name of strengthening the Yamuna embankment near Jamia Nagar in Delhi

SUB-REGIONAL AGENDA, UP GOVT MOVE BLOW TO ENVIRONMENT

Board meet called over Haryana plan

Dipak Kumar Dash | TNN

New Delhi: The NCR Planning Board will meet on March 6 to discuss, among other things, an approval of Haryana's crucial sub-regional plan.

The Centre's haste to get the plan, on which the fate of mega-realty plans hinge, cleared is evident in the fact that it will be only the second time in almost three decades that the NCR Planning Board will hold two meetings within 45 days of one another.

Getting the sub-regional plan approved is critical for the Haryana government since the Punjab and Haryana high court has put an embargo on issuing licences for real estate projects in districts, including Gurgaon, Faridabad and Sonepat, till the plan gets NCRPB's nod.

Coming on the back of the recent approval it gave to the amended regional plan allowing construction in more than 0.5% of areas in natural conservation zones, the sub-regional plan, if cleared, will be another blow to ecologically sensitive areas in NCR like the Aravalis. Approving Haryana's sub-regional plan tops the list of three agendas that has been circulated to all NCRPB members for the March 6 meeting.

The state's revised sub-regional plan has incorporated provisions of the amended regional plan, including the provision to allow construction beyond 0.5%, with permission from environment and forest authorities. Like the regional plan, it also mentions that tourism projects in the green zones should be allowed "as per state policy".

"The sub-regional plan can only be cleared after the revised regional plan is notified. So, now it's evident that the amended regional plan that suits Haryana's demand will get notified in the next one week," said a government official on condition of anonymity.

The last time the NCRPB met in such close succession was 1986 when two consecutive meetings were held in less than two months.

The Union urban development ministry, meanwhile, reconstituted the board issuing a gazette notification on February 14 and one of the most interesting inclusions in the list of members was the town and country planning secretary of the Haryana government.

Questions are also being raised as to how the board can have different parameters for approving sub-regional plans of Uttar Pradesh and Haryana. UP's sub-regional plan was cleared by the board in July 2013 with the rider of not more than 0.5% construction in the green zones.

TOI had reported that minutes of the NCRPB's recent meeting had been circulated among members, approving revisions to the regional plan. The approval triggered protests from green activists, who feared that realtors would undertake various activities in the name of promoting tourism.

TOI file photo

HASTY STEP: It will only be the second time in three decades that NCRPB will hold two meetings within 45 days

The Times of India, Delhi dated February 28, 2014

Climate change killed Indus cities

Kounteya Sinha | TNN

London: A study has confirmed that the Bronze Age Indus Valley Civilization, which in its heyday spanned across present day India and Pakistan, declined due to climate change. Scientists from the University of Cambridge found evidence from Meghalaya, Oman and the Arabian Sea demonstrating that an abrupt weakening of the summer monsoon affected northwest India 4,100 years ago.

The resulting drought coincided with the beginning of the decline of the metropolis-building Indus Civilization suggesting that climate change could be why many of its major cities were abandoned. The new research is part of a project led by the University of Cambridge and Banaras Hindu University which has been funded by the British Council UK-India Education and Research Initiative to investigate the archaeology, river systems and climate of northwest India using a combination of archaeology and geo-science.

The multidisciplinary project hopes to provide new understanding of the relationships between humans and their environment and also involves researchers at Imperial College London, the University of Oxford, the Indian Institute of Technology, Kanpur, and the Uttar Pradesh State Archaeology Department.

Researchers say that the latest finding now links the decline of the Indus cities to a documented global scale climate event and its impact on the Old Kingdom in Egypt, the Early Bronze Age civilizations of Greece and Crete and the Akkadian Empire in Mesopotamia whose decline has previously been linked to abrupt climate change.

British scientists discovered snail shells preserved in the sediments of an ancient lake bed. By analyzing the oxygen isotopes in the shells they were able to tell how much rain fell in the lake thousands of years ago. The results shed light on a mystery surrounding why the major cities of the period were abandoned.

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

The Times of India, Delhi dated March 01, 2014

Gr Noida varsity bans cars, bikes on campus

Promotes Walking & Cycling, Fines Violators

Shafaque Alam | TNN

Greater Noida: In a bid to promote the concept of an environment-friendly campus, Gautam Buddha University in Greater Noida has enforced a ban on fuel-powered vehicles within the campus.

The University is also promoting cycling as a mode of transportation among the students and staff. People violating the order are fined between Rs 100 and Rs 500, depending upon the type of vehicle used and violations.

University officials argue that the students are young and they should walk or use cycle inside the campus. "Walking and cycling should be promoted as it is good for health. Using bikes and cars may lead to some untoward incidents," said Pushyapati Saxena, university registrar. Planning for a green, environmental-friendly campus, the authorities have planted 50,000 trees inside the campus. The University, which has 2800 students, had issued a circular in this regard in August 2013. However, with the commencement of new academic session it has decided to strictly enforce the order.

Prem Bisht

Gautam Buddha University

Shamsuddin Ansari, assistant registrar, said the new enforcement to promote green campus drive is workable as all the hostels and schools are located nearby. "There are 19 University hostels, out of which 13 are occupied. All the schools are located within half km distance from the hostels. Hence, the students are encouraged to walk or use cycle," Ansari said.

So far, the University has collected Rs 27,000 fine. "Students driving cars have to pay Rs 500 as fine, while riding a bike invites a fine of Rs 100. If a student is caught driving a bike with double or triple loading, then he is charged accordingly," an official said.

However, in exceptional cases like students needing to visit other universities or libraries, are given an exemption. University officials said the current enforcement drive is mainly for the University students but soon all the teachers and staffs will be asked to follow the order.

The Deccan Chronicle, Hyderabad dated March 01, 2014

■ Tax sops to AP alone may kill industry in Hyderabad, says TIF

T fight enters economic zone

DC CORRESPONDENT
HYDERABAD, FEB. 28

Telangana-based industrialists fear a flight of capital and factories to Seemandhra, as businessmen could not resist temptation to avail of tax concessions offered by the central government to to the residual state of Andhra Pradesh.

Prime Minister Manmohan Singh had promised to grant special category status to Seemandhra region following the formation of Telangana state.

"The special category status states enjoy concessions in excise and customs duties, income tax and corporate tax rates," said Telangana Industrial Federation (TIF) president K. Sudhir Reddy at a seminar on Friday.

"All these tax incentives will form 15 to 20 per cent of the sales revenue of a company. It is certain that nobody will come forward to set up factories in Telangana if the neighbouring state begins to offer this level of incentives. All those who have their operations in Telangana will also shift their base to residual AP. So we can forget about the manufacturing growth here," said J. Nrupender Rao, the chairman of Pennar Group.

Mr Sudhir Reddy claimed that Seemandhra, especially coastal Andhra, is fairly developed and hence does not meet the criteria of being declared a special category state.

They opined that winning a "political battle" by securing Telangana state would serve no purpose, if the "economic battle" is lost to Seemandhra due to special category status.

The industrialists asked Telangana political leaders to secure special category status to the Telangana state else it will not have a level-playing field.

INDIA'S SECOND LARGEST SOLAR PARK WITH A CAPACITY OF 1,000 MEGAWATT WILL COME UP IN MAHBUBNAGAR DISTRICT.

SOLAR BOOST

The project will be funded by Solar Energy Corporation of India. The country's largest solar plant is being built in Rajasthan, with a total power generation capacity of 4,000 MW.

A memorandum of understanding was signed between Solar Energy Corporation of India (SECI), AP Industrial Development Corp. and New and Renewable Energy Development Corporation of AP.

The solar park will be built on plug-and-play model. It is expected to provide investments to the tune of ₹8,000 to ₹10,000 crores and will provide indirect investments in the region.

Realtors stay bullish on Hyderabad market

DC CORRESPONDENT
HYDERABAD, FEB. 28

With an end to political uncertainty in the state, real estate developers expect a 20 to 30 per cent rise in property prices in Hyderabad in the next six months.

"In the last three years, Hyderabad has seen just five to 20 per cent growth in real estate prices, due to a host of factors such as political turmoil, delayed clearances, and economic slowdown," said N. Jaiveer Reddy, Credai president for Hyderabad chapter.

Mr Reddy was speaking at the Credai Hyderabad Property Show 2014 here on Friday.

"The next six months will be crucial, which will explain as to how Hyderabad will shape up after the state's bifurcation," said S. Ram Reddy, president, Credai AP.

Hoping for best

- **Credai national president C. Sekhar Reddy claims the returns on investments for builders will go up now.**
- **Jones Lang LaSelle feels the overall business sentiments in the city are likely to remain stable.**

A Jones Lang LaSelle report says that over the next six to nine months, the overall business sentiments in the city are likely to remain stable.

"Investors may find this period favourable, as property valuations are low and there is still potential to capitalise on this," said Sandip Patnaik, MD-Hyderabad, Jones Lang LaSalle India.

Indicating that the current time is the best period to invest in real estate, Credai national president C. Sekhar Reddy said the returns on investments for builders will be up by 50-100 per cent in the next 12 months.

According to JLL, "the construction of new capital for residual state of Andhra Pradesh is likely to boost infrastructure and real estate activity in the coastal Andhra and Rayalaseema regions."

"Not only Telangana, even the Seemandhra region will benefit from the bifurcation of the state. Builders are aware of developing smart cities. So, focus will not be limited to one city," the Credai president added.

Other key cites of AP — Vijayawada, Vizag, Guntur, Nellore, Ongole and Tirupati — are also likely to witness increases in property prices going forward.

The Times of India, Delhi dated March 02, 2014

Buck-passing dries up water bodies

Dwarka Water Table Revival Stuck As DDA, Forest Dept Spar Over Jurisdiction

Jayashree Nandi | TNN

New Delhi: Delhi government's poor documentation and conservation of water bodies is well-known. But when new water bodies are identified, even those are not preserved because nobody seems to know which agency is responsible for its upkeep.

Two water bodies in Dhulsiras village near Dwarka, that are not on government's records because they were recently identified, are awaiting rejuvenation work because authorities are not sure whether they are under purview of Delhi Development Authority or the forest department.

A committee constituted by the LG on June 7, 2013, was given the task of identifying new water bodies in Dwarka so that the water-starved sub-city's water table could be raised. Activist Diwan Singh and water expert Vikram Soni, who are part of the committee, had submitted to LG an assessment that about 2 million gallons daily (MGD) can be added to the current water supply of 2MGD after these water bodies are revived.

DYING STREAMS: Two water bodies in Dhulsiras village are drying up

DDA has observed that the two water bodies are with forest department. But chief conservator of forests AK Shukla says they are not. "After I got complaints that these two water bodies were drying up, because the owning agency couldn't be identified, I checked our records. But these are surely not with the forest department nor is the forest patch surrounding it," he said.

"During the last two meetings of the committee I have been asking about revival of these two water bodies. They do not figure in any records but have possibly the best chances for revival than any other I have come across in Dwarka. But DDA has claimed they are with the forest department," Singh said.

More than 20 new water bodies have been identified by the committee in Dwarka Phase I but work has not started on any because of a variety of hurdles. About eight water bodies do not have a "green land use". These are located on land that will be used either for commercial or residential purposes. But the committee has been asked to ignore such water bodies because their land use will not be changed.

"Dwarka is water-starved and we cannot afford to lose even a single water body. For instance, in Sector 12 there is a historical *baoli* that is not being revived because its land use is not green. No wonder, a so called well-planned sub-city is parched," Singh added.

The Times of India, Delhi dated March 03, 2014

Sugar-based battery can run a mobile for 10 days

It Works Like Human Body

Washington: Scientists have developed a battery that uses sugar to generate electricity enough to power a smartphone for 10 days.

The bio-battery designed by researchers at Virginia Polytechnic Institute and State University has a greater output per weight than the typical lithium ion batteries used in most electronic gadgets. The prototype has the potential to be lighter and more powerful than the batteries typically found in today's portable electronic devices, including smartphones.

In the body, sugar is converted into energy in a process called metabolism, which decomposes sugar into carbon dioxide and water while releasing electrons.

Bio-batteries produce energy though the same conversion process by capturing the electrons that are generated in the decomposition of sugar with the same tools that the body uses.

WEET NEWS

As bio-batteries use materials that are biologically based, they are renewable and non-toxic, making them an attractive alternative to traditional batteries that need metals and chemicals to operate.

"By using the lithium ion batery, for example, your phone can only last for one day, but in the future it will use sugar as fuel and then the phone could last 10 days," said Zhiguang Zhu, a researcher at Virginia Tech.

The new bio-battery gets its efficiency by using a unique system based on enzymes, which are proteins that help the reaction to take place. AGENCIES

The Times of India, Delhi dated March 04, 2014

Warming making life sparser in deep ocean

Kounteya Sinha | TNN

London: The world's first study of deep ocean trench has confirmed climate change — excessive warming of the ocean and melting of Arctic ice — has made marine life far sparser and less varied than expected in those depths.

British and Kiwi scientists joined hands and dived into the previously unexplored New Hebrides Trench, which lies east to the isle of New Caledonia 1,000 miles north-west of New Zealand, and captured on camera hours of footage of rarely seen animals. From their exploration of the trench, which plummets to depths of over 7,000m, they discovered life in some of the deepest places on the Earth is not as predictable as once thought. Instead marine life in the New Hebrides Trench was far sparser. Voyage leader Dr Alan Jamieson of the University of Aberdeen said, "Fish were surprisingly few in number and low in diversity and not at all what we expected."

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

The Times of India, Delhi
dated March 04, 2014

Corpn plans push-start for cycling

New Cycle Sharing Scheme Will Connect Main Roads With Bylanes, Without Hassles

Maria Akram | TNN

Commuting by cycle could catch on in the city if the South Delhi Municipal Corporation's 'cycle share project' materializes. Learning from DIMTS' failed 'rent-a-cycle' experiment, the civic agency has asked its consultant, Ahmedabadbased Centre for Green Mobility (CGM), to plan a user-friendly scheme this time.

The plan is to provide cycles on sharing basis from metro stations and bus stops to colleges, heritage sites and important junctions. To begin with, only 25 bike stations will be set up. Users will be able to rent a bike from one station and drop it off at any other station, or even leave it at a government building to be picked up by a van.

The project, for which a sixmonth time frame has been made, is estimated to cost Rs 25 crore. The corporation will provide the capital and the space for stations, and monitor the scheme while CGM will provide the bikes.

"We learned from the DIMTS scheme that a rented bike becomes a liability, and this deterred many prospective users. Moreover, the DIMTS bike stations were only on the main roads, so people opted for buses or the metro. We are focusing on connecting the main thoroughfares to the bylanes," said Satish Upadhyay, chairman of the corporation's standing committee, adding, "From the Moolchand metro station, one can ride a bike to Gargi College or Kamla Nehru College and leave it there".

The corporation has signed a memorandum of understanding with CGM, giving it three months to submit a feasibility report. A pilot project will be started in South Zone before being extended across the city.

Although the user fee hasn't been decided, there will be no security charges. Smart cards will be issued on the basis of photo-ID and insurance number. People without valid insurance will not be able to rent cycles.

"We will develop cycle lanes where possible, and designate pavements for use by pedestrians and cyclists elsewhere. The rental stations will be inte g rated through a web portal and phone app," said Upadhyay. The service will be available during metro operating hours and a biker club will also be created. "Pay once in a year and be a member of the club," said Upadhyay.

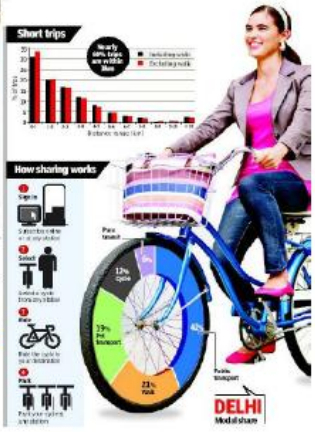
The corporation will set the other conditions after getting the feasibility report. "These will be one-way trips with short hiring duration. There will be 3-4 stations within 1km radius. There won't be many cycles parked at the station and the charges will be quite low," said Upadhyay.

It all sounds good but the corporation will have to prove itself against its poor track record on keeping cycle lanes free of encroachment.

GOOD FOR HEALTH AND ENVIRONMENT: A bike rental facility in Lyon, France

Across the world

HANGZHOU | China	LONDON | UK	PARIS | France	NEW YORK | USA	MONTREAL | Canada
HZ Bike	BARCLAYS	VELIB	CITIBIKE	BIX
Stations: 2,416	Stations: 570	Stations: 1,800	Stations: 600	Stations: 405
Cycles: 65,000	Cycles: 8,000	Cycles: 20,000	Cycles: 10,000	Cycles: 5,050
Coverage area: Approx. 443 sq km	Coverage area: Approx. 95 sq km	Coverage area: Approx. 304 sq km	Coverage area: Approx. 109 sq km	Coverage area: Approx. 68 sq km



The Times of India, Delhi dated March 04, 2014

Standardize fuel to improve city air: Experts

Jayashree Nandi | TNN

New Delhi: The Delhi government has kept mum on dealing with severe air pollution in the city, likely to be as bad as Beijing's. Environmentalists are now hoping that the national auto fuel policy, which is expected to be ready in a couple of months, will bring down the pollution level by implementing uniform and superior fuel emission norms throughout the country.

Delhi is likely to benefit considerably, experts point out, as most of over 30,000 commercial vehicles like trucks and buses that pass through the city every day do not use Bharat Stage (BS) IV-compliant fuel. These vehicles still use BS III fuel, which pollutes air more during combustion. BS IV-compliant fuel has been in use in only 13 major cities, including Delhi, since 2010.

"BS IV fuel is not available everywhere. Most of the vehicles from outside are running on BS III fuel. To address air pollution effectively, we need BS VI norms across the country immediately," said a member of Environment Pollution Control Authority (EPCA).

In 2001, the Supreme Court had directed that vehicles plying on interstate routes will not pass through Delhi. However, EPCA says the capital continues to act as a corridor for all. The municipal corporations usually don't check documents strictly as that would lead to long queues and congestion at the checkpoints. The eastern and western peripheral roads, which these vehicles could have used to bypass Delhi, have missed their 2009 deadline and are far from being ready.

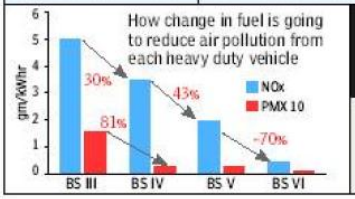
A study by IIT Delhi and Desert Research Institute, published in February, has found that total vehicle exhaust emissions can be maintained at current levels only if BS V fuel is introduced across the country immediately. If no interventions are made, the emission level is likely to double by 2030, it says.

The study also slams the government for always giving the excuse of high costs for not implementing superior fuel norms. "According to the government, refinery upgradation can cost over Rs 50,000 crore and, therefore, fuel quality cannot be improved in a hurry. But considering the adverse effects of air pollution on health, annual health costs translate to at least Rs 20,000 crore per year."

Anumita Roychowdhury of Centre for Science and Environment (CSE) says India is seven years behind Europe in terms of introducing fuel norms. "This approach of having different fuel norms for different cities is not helping in addressing air pollution. Also, why should citizens of some cities get inferior fuel? BS IV needs to be rolled out throughout the country by 2015, and we should start shifting to BS V immediately after that," said Roychowdhury.

STRICT FUEL NORMS FOR CLEANER AIR

- More than 30,000 heavy duty vehicles enter or pass through Delhi every day, according to Environment Pollution Control Authority (EPCA)
- Most of these use Bharat Stage (BS) III fuel
- In 2001, Supreme Court had ordered that no heavy, medium or light vehicle plying on interstate routes will pass through Delhi
- Only vehicles that pay toll tax and carry goods to or/and from Delhi will be allowed to enter the capital, says the order
- According to EPCA, the order is far from being implemented



What experts recommend to auto fuel policy committee

- Implement BS IV norms nationwide by 2014-15
- Cars should move to BS V between 2015 and 2017
- Commercial and heavy duty vehicles should move to BS IV+ by 2015-17
- All vehicles move to BS VI by 2020

Flutter of joy in capital park as rare birds return

TIMES NEWS NETWORK

New Delhi: Scientists at Aravali Biodiversity Park have recently documented the diversity of avian species here, soon to be published in a birding journal. The list is long; it also has several species that are rarely seen in Delhi. Scientists claim that manmade forests in the park with their own micro-climates may have led to revival of these species. Some birders are pleasantly surprised with the list.

According to M Shah Hussain, scientist-in-charge at the park, the number of species has gone up from 60-70 in 2005 to 190 now. "There could be many reasons for this rise. One of them is that we have insects for insectivorous birds and lots of fruiting trees for frugivores. The park now has micro-habitats like grasslands, there is some moist vegetation in the depressions which earlier used to be mining pits and there are many native trees," Hussain said. Before 2005, the area had almost a monoculture of *Prospis juliflora* (vilayati keekar), an invasive weed.

Park authorities claim that not just birds that had long disappeared from Delhi are being seen again, some belonging to other climate zones like moist deciduous forests have also been spotted here. Indian Pitta for instance, a bird usually found in Western Ghats and Himalayas was seen here recently. "Passage migrants" like red-throated flycatcher, orange-headed thrush, canary flycatcher, and some warblers migrate annually from the Himalayas in winters and white-eyed buzzard, common hawk cuckoo, pied-crested cuckoo, and blue-cheeked bee-eater visit the park in summers.

Among birds that have surprised birders and scientists at the park is the oriental pied hornbill that is usually seen in moist deciduous and evergreen forests of south-east Asia. "I don't think the oriental pied hornbill has been seen in Delhi any time recently. If the park authorities have really spotted it, it's surprising. I think it's a lovely park and their list of sightings is impressive. But the park is not open to birders or general public. I think they should let in interested people. The fact that the park is secure and undisturbed by other urban pressures is great for the birds," said author and birder Bikram Grewal.

Hussain said, "It's not easy to open the park for public because we need certain infrastructure. We do get students regularly. We have also proposed guided nature trails so that people understand how the area has been revived."

The list of birds is likely to be published in a couple of months.

MAKING A COMEBACK

RARE SPECIES SIGHTED AT PARK

Oriental pied hornbill, Indian pitta (spotted after 65 years), Dusky eagle owl, Eurasian eagle owl, Eurasian thick-knee, Lesser spotted eagle, Bonelli's eagle, Black eagle (spotted after 88 years), Booted eagle, Oriental honey buzzard, Long-legged buzzard, White-eyed buzzard, White-bellied minivet, Large cuckoo shrike, Orange-headed thrush, Grey-winged blackbird, Red-throated flycatcher, Jungle prinia, Rufous-fronted prinia, Plain leaf warbler, Striated babbler


Oriental pied hornbill


Indian pitta


Eurasian eagle owl

The Times of India, Delhi
dated March 06, 2014

Warming may sink 136 of 700 heritage sites

Kounteya Sinha | TNN

London: Climate change is threatening the world's cultural heritage with scientists estimating that 136 of 700 listed cultural monuments by Unesco will soon be under water.

A new study by Ben Marzeion from the University of Innsbruck and Anders Levermann from the Potsdam Institute for Climate Impact Research said that sea-level rise will not only affect settlement areas but also hit numerous world heritage sites listed by Unesco, like the Statue of Liberty in New York, the Tower of London and the Sydney Opera House.

Rise in global temperature by three degrees Celsius would threaten nearly one-fifth of world cultural heritage sites, researchers said. If global average temperature increases by just one degree Celsius, more than 40 of these sites will be threatened by water in the next 2,000 years.

With a temperature increase of three degrees, about one fifth of the cultural world heritage will be affected in the long term.

"Around 136 sites will be below sea-level in the long-run in that case if no protection measures are taken," Marzeion said. "The fact that tides and storm surges could already affect these cultural sites much earlier has not even been taken into account," he added. Among the world heritage sites affected are the historical city centres of Bruges, Naples, Istanbul and St Petersburg and a number of sites in India and China.


Reuters

UNDER THREAT

"If large ice masses are melting and the water is dispersed throughout the oceans, this will also influence the Earth's gravitational field," Levermann said.

"Sea-level rise will therefore vary between regions," he added.

They calculated future sea-level rise for all world regions and compared these projections with today's coastal settlement areas and the sites of the cultural world heritage. "Our analysis shows how serious the long-term impacts for our cultural heritage will be if climate change is not mitigated," Levermann said.

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

PMO steps into Haryana plan row

UD Ministry Asked Not To Okay It Until Green Concerns Are Addressed

Dipak Kumar Dash | TNN

New Delhi: In a rare intervention, the Prime Minister's Office has asked the Union urban development ministry not to approve Haryana's sub-regional plan — which allows construction beyond 0.5% in conservation areas such as the Aravalis and tourism activities in these zones — before environmental concerns are addressed. The missive came a day before the NCR Planning Board was scheduled to hold a special meeting to approve the plan.

Referring to news reports on the haste to clear Haryana's plan — something TOI has been highlighting — PMO said the board must get feedback from the environment and forest ministry and address its concerns before clearing the sub-regional plan. It has also asked the UD ministry and the board to ensure protection of forest areas, including the sacred grove of Mangar near Gurgaon, sources said.

Representatives from the ministry sit in the NCRPB, including the minister who chairs the board. The board


Sanjay Chauhan

SAFE NOW: Aravalis in Faridabad

was scheduled to meet on Thursday. But after the poll dates were announced in the morning, the NCRPB postponed the meeting. "We will seek permission of the Election Commission to hold the meeting," a source said.

Sources said that before the board secretariat had decided on cancelling the meeting, UP government shot a letter to the NCRPB saying that their representative won't attend since poll code of conduct had come into force. Another strong letter from Delhi government reached the planning board, raising questions on the hurry to clear both the regional plan for NCR and Haryana's sub-regional plan, sources said.

Delhi government is believed to have pointed out that many of the issues it had raised had not been incorporated while clearing the regional plan. While the views of Delhi Lieutenant Governor Najeeb Jung had been incorporated in the minutes of the last board meeting, this was not reflected in the policy decision. The approved minutes mostly favour Haryana's case.

TOI has learnt that on Wednesday, MoEF sent its observations to NCRPB on the plan for NCR. On Haryana's sub-regional plan, the NCR secretariat has asked the state government to incorporate about a dozen green provisions.

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The Deccan Chronicle, Hyderabad dated March 10, 2014

E-WASTE CONCERN

■ Eight lakh metric tonne produced yearly in India, Hyderabad contributes 6,000 tonne

Not many recyclers of e-waste

AMAR TEJASWI | DC
HYDERABAD, MARCH 9

Lack of adequate recycling capacity for electronic waste is costing the country several thousands crore of rupees each year.

About 10 states, including Andhra Pradesh, annually generate about 70 per cent of the estimated eight lakh metric tonne of e-waste in the country, but only about three lakh metric tonne is recycled to dispose and recover precious metals like gold, silver and palladium.

India currently has only about 98 registered recyclers, with only two in the state, according to the ministry of environment and forests.

Experts and environment officials term it a "bad scenario" stating that generation of e-waste will rise exponentially by 2020 while the capacity to recycle will remain the same, which is a fraction of what is required.

According to an independent study, Hyderabad is among the top e-waste generating cities in the country. The volume of e-waste in the city is estimated at around 16,000 tonne each year and is expected to rise exponentially.

A United Nations Environment Programme (UNEP) report estimated that the volume of e-waste in the country would rise by 500 per cent over the next decade.

Recycling of e-waste involves several processes including collection of e-wastes like flash drives, hard disks, motherboards, monitors, RAMs etc.

The recycling process has the motive of recovering several precious metals used in the manufacturing of the products. Studies state that a tonne of e-waste has about 340 gm of gold and 3500 gm of silver.

Speaking at the National Symposium on Sustainable E-waste Recycling Technologies here on Saturday, Steven Art, sales manager, Umicore Precious Metals Refining, said, "About 17 critical metals can be recovered from the recycling process of e-waste. But it is also important to manage toxins. It takes a lot of investment to recycle waste but the metal being recovered should be able to compensate that."

The symposium was organised as part of the foundation day celebration of the Centre for Materials and Electronic Technologies.

Dr Shruti Rai Bharadwaj, deputy director, ministry of environment and forests, said, "It is not a very good scenario. Only about three lakh tonnes of e-waste is being managed in an environment-friendly way. There are about 98 registered dismantlers in the country."

Dr Sandip Chaterjee, director, department of electronics and information technology, said, "We are losing precious metals as recycling is being done non-formally, in an unorganised way."

E-goods to specify hazardous content

DC CORRESPONDENT
HYDERABAD, MARCH 8

Safer side

- **From May, electronic goods will have to display the quantum of hazardous metals.**
- **Use of Lead, Mercury, Cadmium, Hexavalent Chromium, is restricted under ROHS guidelines.**

The quantum of hazardous metals or elements used in the manufacture of electronic goods will have to be displayed on the goods – on the lines of food products – from May this year.

Manufacturers will have to comply with the Restriction of Hazardous Substances (RoHS) directives under the e-waste rules pertaining to prohibition of hazardous substances used in the manufacture of electronic goods.

The E-waste (Management and Handling) Rules, 2011 came into force in May 2012 and the RoHS rules were slated to be implemented two year from the date, i.e. from May 2014.

Dr Arun Sachdeva, officer-on-special-duty to the secretary of ministry of environment and forests, said, "We are looking at electromagnets' standards and specifically, the RoHS standards. These safeguards need to be implemented to protect the environment."

Labels on electronic goods will be seen shortly, he added.

RoHS guidelines have been maintained in like Europe and the United States for a long time. The European Union had implemented the rules more than a decade ago.

"About 90 per cent of the industry is already compliant but we need conformity assessment tests," Dr Sachdeva said. City based Centre for Materials and Electronics Technology is the only government laboratory, which can test electronic goods to determine compliance to RoHS guidelines.

The Times of India, Delhi dated March 14, 2014

'Pollution pay' for Panasonic's expat staff in China

Saibal Dasgupta | TNN

Beijing: Electronics maker Panasonic Corp has announced it would compensate its Japanese employees for living with heavy smog and pollution in China amid reports that many foreigners were leaving the country due to it.

So-called hardship pay is not unusual for employees of foreign firms sent to work to China. But Panasonic is believed to be the first to announce a premium to compensate for polluted air.

Other firms are expected to emulate the move aimed at retaining staff. A recent European Chamber of Commerce survey showed its members regarded pollution as a major business challenge.

Reuters

HARDSHIP COMPENSATION: Other firms are expected to emulate the Japanese company's move aimed at retaining workers

Panasonic said the compensation will be for facing the "PM2.5 problem" referring to tiny particles in the air, which easily penetrate the lungs and have been linked to hundreds of thousands of premature deaths..

It did not disclose the amount of the payments, which start in April and would become part of the annual package negotiated for employees in China. The company clarified the compensation would only be available to members of the Panasonic Union and would not cover local staff. It did not disclose how many staff members would be benefitted.

On the weekend, a top Chinese environment official said that air quality was below national standards in almost all the country's major cities last year. Only three out of the 74 cities monitored by the government met a new air quality standard, said Wu Xiaoqing, a vice minister of environment protection, underscoring a problem that has set off alarm bells over health concerns. Chinese cities are regularly cloaked in a smoggy haze, with many residents donning masks to avoid taking in the toxic air.

The Times of India, Delhi
dated March 14, 2014

Spent CFLs an eco hazard

Concern Over High Mercury Content, Absence Of Recycling

TIMES NEWS NETWORK

New Delhi: Spent CFLs may be polluting the environment silently and causing a toxic hazard for *kabadiwalas* who handle such discarded bulbs.

Despite a huge spike in the demand (about 30% in the last five years) for these energy-saving lamps, a recent survey by NGO Toxics Link has found a number of ecological concerns with the management of these lamps. One of them is that they are not recycled safely; the mercury-laden glass invariably ends up in the municipal solid waste. Also, there is no set standard in India on the amount of mercury that should be used in a bulb. A meeting of stakeholders — including the environment ministry, Central Pollution Control Board (CPCB) and industry bodies — was organized by the NGO on Thursday where the experts debated on how compact fluorescent lamps (CFLs) and their recycling needs should be streamlined. Different CFL companies use varying quantities of mercury, often the European standard of 5mg, the experts said.

Researchers who surveyed the recycling of CFLs by informal waste handlers or *kabadiwalas* in parts of central Delhi found that no safety equipment was used and the bulbs were being handled with bare hands. In 2008, CPCB had issued guidelines for "environmentally sound mercury management in fluorescent lamp sector" which called for lamp recycling units (LRUs), but not a single LRU has been set up so far.

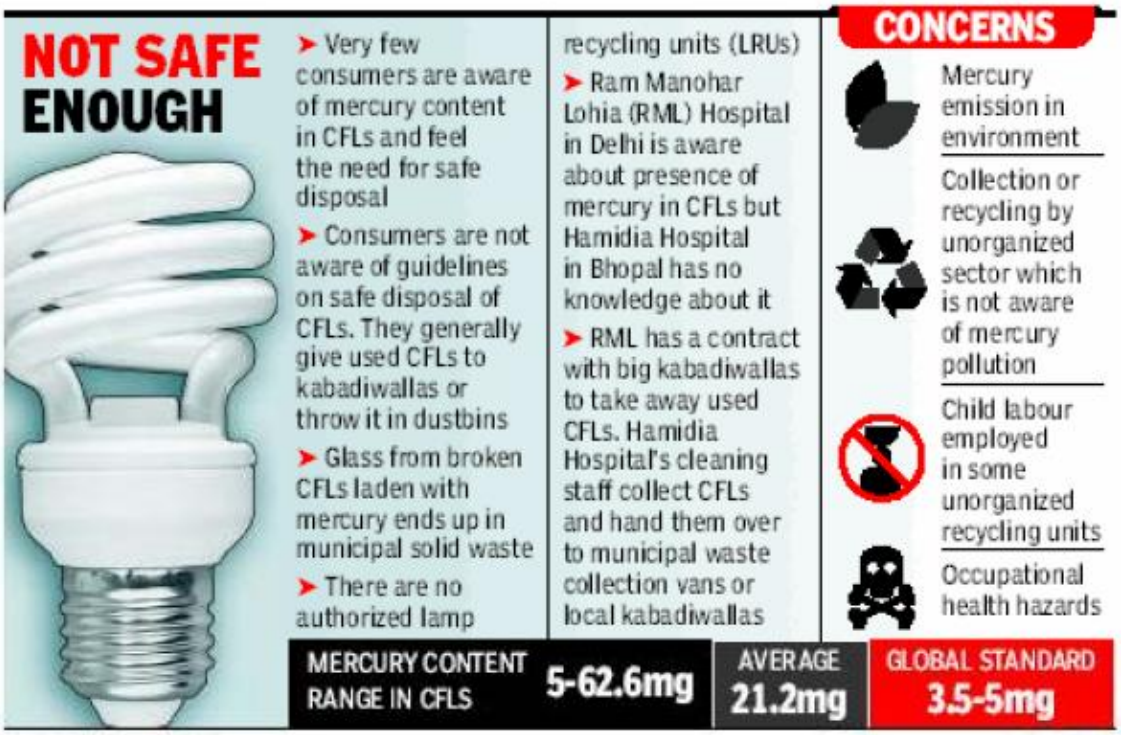
The environmentalists asked the industrial bodies why they didn't take responsibility for safe collection of spent lamps. But members of Electric Lamp and Component Manufacturers Association of India said they have already suggested that consumers put the spent lamp in a polythene pack before discarding it.

R N Jindal, additional director at MoEF, however, said that by asking consumers to discard it in a polythene bag, they may be breaking another law as there is a ban on such bags. "There are 53 cities. In which city do you have a collection centre for spent CFLs?" he asked. Tempers ran high at the meeting as industry members tried to defend themselves by claiming they have been reducing the amount of mercury in CFLs gradually.

Other stakeholders, like the Bureau of Energy Efficiency (BEE), said they were not sure how to deal with the spent CFLs. Pravatanalini Samal from BEE said they have 30,000 to 40,000 CFLs in store, which were procured for a scheme on distributing subsidized CFLs but now they don't know what to do with it or how it can be safely managed.

A standard has recently been prepared, a member from Bureau of Indian Standards said, which makes it mandatory for all CFL companies to have not more than 5mg of mercury in their lamps. This standard may be released next week, he added.

India is far behind many other developing and developed countries in managing CFL waste. Taiwan, for instance, has collection centers run by retailers. It also has the highest disposal and recycling rate of 87%.



Source: Toxics Link (2012)

The Times of India, Delhi dated March 15, 2014

Solar toilet that turns waste into 'charcoal'

Kounteya Sinha | TNN

London: A waterless toilet that is run by solar energy and converts excreta into a form of charcoal will be unveiled next week in India where over 626 million people don't have a closed toilet and consequently defecate in the open. University of Colorado University Boulder's self-contained toilet, designed and built using a $777,000 grant from Bill & Melinda Gates Foundation, has the capability of heating human waste to high temperature to sterilize it and create biochar, a highly porous charcoal. Principal investigator Karl Linden says biochar can be used to increase crop yields and sequester carbon dioxide. Biochar can be burnt like charcoal and provide energy comparable to commercial charcoal.

The ground breaking idea will help 2.5 billion people who lack safe and sustainable sanitation around the world. The project is part of Gates' Foundation's "Reinvent the Toilet Challenge," an effort to develop a next-generation toilet that can be used to disinfect liquid and solid waste while generating useful end products. The invention consists of eight parabolic mirrors that focus concentrated sunlight to a spot no larger than a postage stamp on a quartz-glass rod connected to eight bundles of fibre-optic cables, each consisting of thousands of intertwined, fused fibres.

MoEF empowers states to issue showcause to violators

Vishwa Mohan | TNN

New Delhi: To prevent cases of environmental violations piling up at the Centre, the ministry of environment and forests has delegated its power to "issue showcause notice" to violators of specific projects to states and Union Territories.

The move to decentralize power will help state and UT-level environment impact assessment authorities to take effective action or corrective measures quickly without waiting for the Centre.

The ministry issued the notification to this effect on February 28. This order, however, will not dilute the powers of the MoEF which may invoke its power any time.

States and UTs can withdraw a clearance if the project violates green norms

The notification is in tune with the government's "action taken report" on the recommendations of the Shah Commission which had probed cases of illegal mining in Goa and Odisha and suggested reforms related to environmental and forest clearances and their proper implementation at the state level.

State and UT authorities will now issue showcause notice in cases pertaining to violations of environment clearances and keep its green nod in abeyance.

They also have the power to withdraw the previous environment clearance if project proponents violate the "conditions" of green nods.

The Central government will step in only when action is necessary in public interest. Under the February 28 notification, these powers are now delegated to the states as per provision of Section 23 of the Environment (Protection) Act, 1986.

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

The Economic Times, Delhi dated March 17, 2014

Solar Power

As Cheap as Thermal

The cost of production of solar power has dropped 60% in three years. In three years, it will equal that of thermal power

EARLIER THIS month, when Madhya Pradesh accepted the bid of Himgiri Energy Ventures to supply solar power to the state grid at ₹6.5 a unit, it was a figure to note even by the industry's standards of smashing records by the season. This contract award shaved off 13% from the lowest price at which Indian industry was willing to supply solar power; over three years, the drop is a steep 61%.

More importantly, the MP tender brought the price of solar power closer to the price of thermal power — produced from coal or gas, and India's largest source. For 2012-13, Delhi's power utilities were projecting to buy conventional power at an average unit price of ₹5.71. In other words, at ₹6.5, solar is just 14% above thermal.

Its price prognosis is also better. Even as coal and natural gas become costlier, solar plants bask in free and ample sunshine and falling equipment prices. All this is taking the energy sector towards a game-changing milestone: grid parity, or the situation where solar costs the same as conventional sources.

"Price bids in conventional power have been up to Rs 5 per unit," says Sanjay Chakrabarti, partner (clean energy), Ernst & Young. "Keeping that as the grid parity price, wind power has already achieved grid parity and solar is quite close." The ministry of new and renewable energy is projecting grid parity by 2017 – five years ahead of its initial projection of 2022.

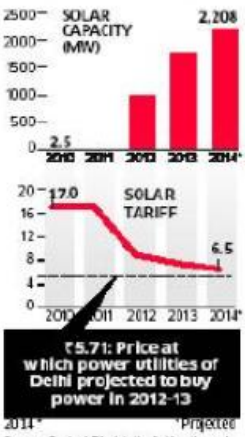
Cheaper Solar Power

Some countries are there. Like Germany, which has 36,000 MW of solar capacity, according to Bloomberg New Energy Finance. An early adopter, Germany started seeing a spike in solar capacity from 2001. In India, the spike came only in 2012, since when its solar capacity has increased from 2.5 MW to 1,759 MW (See graphic).

The Central government is looking to increase capacity through the National Solar Mission, which gives a certain set of incentives to companies and aims to put up 22,000 MW of solar capacity by 2022. In its last round of bidding, held this January, the government received bids for 2,170 MW, three times the advertised requirement, from 53 companies. Among them were state power utilities, global renewable-energy players and fresh entrants with international funding, holding out an investment of ₹5,000 crore.

Also active are select states. Madhya Pradesh leads, with ₹30,000 crore in the pipeline for renewable power development. It is followed by Gujarat, an early mover that has 850 MW of solar capacity at an investment of—11,000 crore up and running.

Solar Power Acquires a Shine



Source: Central Electricity Authority and Ministry of New and Renewable Energy

The jump in capacity is coming from the ongoing recalibration in tariffs. The second phase of the National Solar Mission, from 2013 to 2017, set the tariff at ₹5.5 per unit, with some financial support from the government in the form of 'viability gap funding'.

According to Tarun Kapoor, joint secretary at the ministry of new and renewable energy, viability gap funding was about Re 1 per unit. He sees this reducing with equipment becoming cheaper, particularly from China, and competing fuels becoming costlier. "Our experiment with viability gap funding turned out to be successful, with foreign investment coming in," he says. "Looking at the current trend, this amount would gradually go down."

The latest tenders floated by states—which don't offer viability gap funding, but offer subsidised land or tax breaks—give a glimpse. Price bids stood at ₹6.5 per unit in Madhya Pradesh, ₹7 in Rajasthan and Rs 8 in Punjab.

Increasing Consumer Adoption

Solar is also seeing increasing adoption at the consumer level. Micro grids, of 150 watts (powering 20 households) to 5 kilo watt (40 households and commercial use like water pumps) are being set up to independently power villages. "There are solar lanterns and street lights. Inverters, water pumps and other agri machines are increasingly coming in the solar option.

Ajay K Goel, CEO of Tata Power Solar, which makes solar equipment, feels adoption of solar-based products has parallels with telecom. "Off-grid products have better reach in areas where grid connectivity is an issue," he says. "Just as landline connections could not reach deeper pockets of the country but mobile phones did, decentralised systems would serve the same purpose."

For example, Lucknow-based Naturetech Infra has installed micro grids in villages in districts of Uttar Pradesh, including Gonda, Sitapur and Unnao. A micro grid entails installing a small field of solar panels at a central location in a village. The panels generate solar power during the day and store it in batteries. In the night, this power is released for seven hours to houses connected to the grid. Households pay ₹120 per month to run two bulbs, one fan and a mobile-charging point.

Shubhra Mohanka, director of Delhi-based Solid Solar, says her company sold 10,000 solar inverters—a cleaner and cheaper back-up option than diesel, which costs ₹16-18 a unit — in UP, Bihar, Delhi and Tamil Nadu last year. "Solar-based products have a huge market in remote areas, where they can easily replace costly diesel and kerosene," says Parag Shah, managing partner of Mahindra Partners and head of Mahindra cleantech division.

Solar is also diversifying into new spaces. Maharishi Solar, for example, does solar-powered garden lights, swimming pool heating, fridge, AC and cooler, among other things. "As more and more creative minds go into it, new technology development will take place," says Pradeep Khanna, the company's CEO & MD. A solar ecosystem is taking shape.

The Times of India, Delhi dated March 17, 2014

Weather call service gets only 3% pollution queries

Jayashree Nandi | TNN

New Delhi: Only 3% of enquires on a toll-free weather and air quality call service are on pollution levels. This facility, not known to most people, is being run by the ministry of earth sciences since May last year. During the major smog episode this winter, when Delhi's pollution levels were comparable to Beijing's, calls on this number increased marginally to about 6% during January and February.

System of Air Quality Weather Forecasting and Research (SAFAR) scientists who run the service say it is little interest, and not lack of awareness, that is responsible for the few calls. "Unlike other countries where people show much interest in pollution levels, people here don't seem to care so much. We get the maximum calls during monsoon when people want weather updates before stepping out. We are not sure how to promote this service," said Gufran Beig, the chief project scientist at SAFAR.

When you call on the number, a recorded voice gives the air quality index—the air pollution level that government agencies communicate to the public—and the corresponding health advisory. When TOI dialled this number on Saturday around 6.30pm and asked about air quality in east and south Delhi, it was told that the air quality was "poor" and "sensitive populations should stay indoors". "The air quality index is determined by the worst pollution level of the day—either PM10 or PM2.5—and the WHO advisory for that reading tells the impact on health," added Beig.

SAFAR also provides SMS alerts on air quality on registration of mobile numbers on its website. However, this doesn't include updates on pollutants like ground-level ozone and benzene, which also impact health.

This winter, inadequate monitoring of air pollution and poor communication earned Delhi much criticism in the international media. SAFAR scientists, however, feel that people are not accessing information that's available. They say air quality in Delhi had improved considerably after February, but started plummeting again from Saturday. "The air quality is going to be poor from Sunday, so sensitive people, like those with asthma or other respiratory illnesses, should be careful," Beig said.

jayashree.nandi@timesgroup.com

CALL UP TO KNOW AIR QUALITY

Toll-free number: 18001801717, operational since May 2013

- Gives information on **air quality and corresponding health advisory in Hindi and English**
- SMS alerts also available
- after registering on **SAFAR website**
- Cost to department | **Rs 3-10 lakh per month**

The Deccan Chronicle, Hyderabad dated March 18, 2014

Pollution getting worse in Indian cities, says UN

New Delhi/Beijing, March 17: A study pointing that the pollution levels in New Delhi is worse than that of Beijing may have been quoting the data from the worst period of the year but the air quality in Indian cities is progressively getting worse, UN climate change chief Rajendra Pachauri said today.

"We also have to allow the fact that there are variations in the composition of PM 2.5 in the atmosphere which varies from season to season. It may very well be the study they are quoting is that of the worst period during the year," he told media here at a pre-launch function of the report on the India-China Low Carbon Study.

The report will be formally launched tomorrow.

But at the same he said the situation is progressively getting worse in Delhi and Bengaluru and even in second rung cities like Ludhiana.

"Frankly I have to look at the numbers to be able to comment. All I can say it is getting progressively worse," he said responding to questions on a study by Yale University stating that Delhi's air quality is worse than that of Beijing, which is battling out worst polluted smog considered to several higher than the levels prescribed by the WHO.

Mr Pachauri, chairman of the UN Intergovernmental Panel on Climate Change, was co-recipient of the Nobel Peace Prize with former US vice president Al Gore in 2007.

The Yale data was contradicted by officials in Delhi who contradicted it citing data of their own obtained from monitoring stations on the ground.

About the quality of the data provided by the officials in Delhi, he said, "There are gaps in Delhi data. It is an issue needs to be investigated properly". — PTI

WORLD'S MOST POLLUTED CITIES

Here is a list of top 10 cities for which data is available, according to a 2011 WHO report

- **Ahvaz, Iran — 372 mcg/m3 (2009 data)**
- **Ulan Bator, Mongolia — 279 mcg/m3 (2008 data)**
- **Sanandaj, Iran — 254 mcg/m3 (2009 data)**
- **Ludhiana, India (2008 data) — 251 mcg/m3**
- **Quetta, Pakistan (2003/4 data) — 251mcg/m3**
- **Kermanshah, Iran — 229 mcg/m3 (2009 data)**
- **Peshawar, Pakistan — 219 mcg/m3 (2003/4 data)**
- **Gaborone, Botswana — 216 mcg/m3 (2005 data)**
- **Yasuj, Iran — 215 mcg/m3 (2009 data)**
- **Kanpur, India — 209 mcg/m3 (2008 data)**
- **Lahore, Pakistan — 200 mcg/m3 (2003/4 data)**

The Times of India, Delhi
dated March 19, 2014

Global warming may hit grain yield: IPCC report

Predicts A Civil-War Like Situation

TIMES NEWS NETWORK

New Delhi: A leaked report of a UN panel has predicted severe impact of global warming on food-grain production, fresh water resources and human settlements across the globe with Asia facing the brunt of it. It will also increase the risk of violent conflict and wipe trillions of dollars off the global economy.

The document, second in series of the Intergovernmental Panel on Climate Change's (IPCC) fifth assessment report which is to be made public in Tokyo on March 31, also carries details of how the global warming will create a civil-war kind of situation in many parts of the world due to huge pressure on available resources.

UK-based daily – The Independent – on Tuesday claimed to have seen the draft of the final version of the forthcoming IPCC (Working Group-II), saying the "warming climate will place the world under enormous strain, forcing mass migration, especially in Asia, and increasing the risk of violent conflict".

It forecasts that climate change will reduce median yields by up to 2% per decade for the rest of the 21st century – against a backdrop of rising demand of foodgrains by 14% per decade until 2050.

STARING AT DESTRUCTION: The report links rise in temperature to economic losses, leading to violent protests

It predicts impact of climate change on yields of major crops such as wheat, rice and maize in different climatic zones as also tropical regions of India. The leaked report says the temperature increase of 2.5 degree Celsius above pre-industrial levels may aggregate huge economic losses. It will indirectly increase the risk of violent conflict in the form of civil war.

Referring to the 'leaked' draft report, the UK daily claimed that the IPCC findings predict displacement of "hundreds of millions of people" due to land loss. It says, "The majority of those affected will be in East Asia, South-East Asia and South Asia. Rising sea levels means coastal systems and low-lying areas will increasingly experience submergence, coastal flooding and coastal erosion."

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

The Economic Times, Delhi dated March 21, 2014

National Solar Mission Way Short of Target

SHREYA JAI
NEW DELHI

Three years after Prime Minister Manmohan Singh announced an ambitious plan to generate 20,000 mw of solar power by 2022 under the Jawaharlal Nehru National Solar Mission, the programme is yet to takeoff in a meaningful way and remains far behind target.

Marred with delays, trade disputes and competition from state-level schemes, the central programme could so far contribute just one-third to the India's total solar capacity. "The programme is losing on time and offering small capacities. There is no long-term visibility on the central plan," said Sunil Jain, managing director at Hero Future Energies, a renewable energy firm of Hero Group. The first phase of the solar mission from 2010–2013 added just 252.5 mw of solar power generation capacity against the targeted 1100 mw.

In the second phase started in 2014, a year later than planned, the government aims to add 10,000 mw solar energy capacity by 2017, under both photovoltaic (PV) and concentrated solar power (CSP) or solar thermal technology.

In a tender floated in January, it bid out PV projects totalling 750 MW, for which it received bids thrice the requirement. "Companies are ready to offer more and government could have easily announced a second bid for the surplus amount," Jain said. "The solar mission would hopefully add around 800 MW this year and all states combined are expected to add another 600 MW. So, we are looking at a miniscule 1500 MW of capacity addition in solar this year and all this after when three years of the mission have already been consumed," he said.

India's total solar power installation currently stands at 2208 MW, out of which 661 MW has been contributed from projects selected under the national solar mission.

The balance is from the state schemes for solar power development, with 70% coming solely from Gujarat. Madhya Pradesh is looking to add another 800 MW of solar by June 2014.

Several independent power producers are lining up to invest in state schemes that come with offers such as cost-free land and tax breaks.

Officials at MNRE are, however, hopeful that the mission would meet its target. "We were actually thinking of scaling up the target to 1 lakh MW by 2022. But it was prudent to first develop a domestic market and stabilise it and then reach for bigger goals," a senior MNRE official said.

The second phase of the mission was delayed due to trade dispute among the domestic and foreign manufacturers of solar cells, with recurrent changes in the mission guidelines. A case of dumping of equipments against solar companies of China, US, Malaysia and Taiwan is going on. And the US has filed two complaints against India in World Trade Organisation for safeguarding its domestic industry and restricting competition in JNNNSM guidelines.

Analysts said such delays hurt a nascent sector like solar. "The uncertainty or lull that happened last year is not desirable for a programme of this scale. The bidding in the current phase has undoubtedly been impressive and government needs to keep up with the investment resonance happening in the sector," a renewable energy market analyst said.

The Times of India, Delhi
dated March 24, 2014

Inventors aim for better toilet habits

Padmaparna Ghosh | TNN

New Delhi: The most common joke at the toilet fair was, "Do you need to go", followed by a gentle nudge in the direction of a toilet. The one-liner was invariably followed by giggles and snickers. But the actual objective of the Reinvent the Toilet Fair, which was held in Delhi on Saturday, is to make all Indians "go".

Fifty three per cent of Indian households defecate in the open (600 million people) and the absence of toilets contributes to increased disease burden, malnutrition and impaired cognitive development in children, according to the World Bank.

The developing world's sanitation problem has received attention and funding from various quarters. One of these campaigns has been by the Bill & Melinda Gates Foundation, which funded 16 research institutions since 2011 across the world as part of the Reinvent the Toilet Challenge. Last year, India's department of biotechnology with the Gates Foundation and Biotechnology Industry Research Assistance Council had also launched the Grand Challenges India to reinvent the toilet under an investment of US$2 million.

Rajesh Mehta

SOLVING NATION'S SANITATION PROBLEM

For the 40 exhibitors who arrived in Delhi to showcase their idea of a complete solution, the challenge was simple—to design toilets that capture and process human waste without piped water, sewer or electrical connections, and transform waste into useful resources, such as energy and water, all at an affordable price. The cost of the service cannot exceed Rs 3 per user per day. From solar powered toilets to web-connected ones, from automatic toilet-seat sanitization to electronic latrines to modular ones that can be assembled in 40 minutes to those which turn organic waste into charcoal brickets that can again be used to fuel stoves—there is no almost no path that teams have not gone down. The team from University of Colorado, Boulder, has used concentrated solar energy to transform both faecal matter and urine into commercially-viable products such as solid fuel, heat and fertilizer.

Karl G Linden, civil, environmental and architectural engineering professor from UCB and the principal investigator on the team, pointed to a pack of peanuts he had roasted using the charcoal that his toilet had produced. He said, "The most important part are the fiber optic cables we have used to move the solar energy to the reaction pot where everything gets incinerated.".

Apart from the energy use, piped water requirement and waste treatment, odour and cleanliness issues are also reasons why people might not use a toilet and prefer to go out in the open. Eram Scientific Solutions Pvt Ltd has built and installed toilets that have an automated pre-flush, post-flush and a floor-wash system across ten states.

Anvar Sadath, CEO, Era, Scientific, said, "We found that people were put off by the dirty floors and squat potties. So, we put in the floor wash system that is completely unmanned." Eram's public toilet unit also has SIM cards and is web-linked which means it can be monitored remotely in case the toilet malfunctions.

CalTech's innovation from 2012 has attracted the interested of US-based Kohler Company that is now working with them on minimal water use in toilets and waste handling. Doulaye Kone, senior programme officer (water, sanitation and hygiene), Bill & Melinda Gates Foundation, said, "There have been hundreds of schemes and community mobilization. We are still stuck with no perfect solution. We are trying to solve one part of the problem. You have to understand that you cannot be using a clean flush-toilet at home and providing a stinky one to the poor"

Edited by: Prof. Sushil Kumar
Centre for Business Sustainability,
IIM Lucknow