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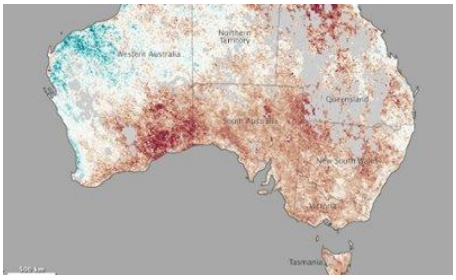
Business Sustainability News — International

Heatwave frequency 'surpasses levels previously predicted for 2030'

By Oliver Milman, *for theguardian.com*



Satellite data showing how the extent of a heatwave. Photograph: Earth Observatory/AAP

The government has been urged to better articulate the dangers of climate change after a report that shows the frequency of heatwaves in parts of Australia has already surpassed levels previously predicted for 2030.

The Climate Council report highlights that Adelaide, Melbourne and Canberra all experienced a higher average number of hot days between 2000 and 2009 than was expected to occur by 2030.

Research by the CSIRO forecast that Melbourne would experience an average of 12 days over 35C each year from 2030, but the average over the past decade was 12.6 days.

Adelaide experienced an average of 25.1 days a year over 35C in this time, while Canberra surpassed this mark an average of 9.4 days.

The annual number of record hot days across Australia has more than doubled since 1950, according to the Climate Council report, with the south-east of the country at particular risk from more frequent heatwaves, drought and bushfires.

Last month's heatwave, which enveloped much of Victoria and South Australia, caused 203 heat-related deaths in Victoria alone, according to the report.

Tim Flannery, of the Climate Council, told Guardian Australia that heatwaves were the "most dangerous natural hazards in Australia".

"They kill hundreds of people and the fact they are accelerating beyond the predicted trends is a concern," he said. "Heatwaves are coming earlier, they are lasting longer and they are hotter. They build up for days and before you know it, elderly people, infants and the homeless are in danger."

On Monday, Tony Abbott dismissed talk of a link between climate change and drought, saying there "have always been tough times and lush times". Last year he played down the connection between climate change and bushfires.

Flannery said there was "clear evidence" of these links and said the government had yet to articulate the dangers of climate change and how it would combat it.

"We're not looking at these things in a linked-up way, we don't seem to recognise the relationship between the number and intensity of heatwaves on bushfires, and the impact on droughts," he said. "It's an inconvenient truth and people don't want to face the truth.

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Canada's carbon emissions projected to soar by 2030

Tar sands expected to help drive 38% increase in emissions, Harper government admits in submission to the UN

By Stephen Leahy, *theguardian.com*

Canada's carbon emissions will soar 38% by 2030 mainly due to expanding tar sands projects, according to the government's own projections.

The tailings pond at the Syncrude mine north of Fort McMurray, Alberta, Canada. Tar sands could become a 'stranded asset', campaigners say Photograph: Ashley Cooper pics/Alamy

In a new report (pdf) to the United Nations, the Harper administration says it expects emissions of 815million tonnes of CO2 in 2030, up from 590Mt in 1990. Emissions from the fast-growing tar sands sector is projected to quadruple between 2005 and 2030, reaching 137Mt a year, more than Belgium and many other countries, the report shows.

Worse, Canada is likely under-reporting its emissions. An investigation in 2013 found that Canada's reported emissions from its natural gas sector, the world's third largest, could be missing as much as 212Mt in 2011 alone.

"Canada appears to have vastly underestimated fugitive emissions (leaks) from gas exploration," possibly because of "inadequate accounting methodology" according to the Climate Action Tracker analysis done by Germany's Climate Analytics, the Potsdam Institute for Climate Impact Research and Dutch based energy institute Ecofys.

Bill McKibben, founder of the grassroots climate campaigning organisation 350.org, told the Guardian: "Who'd have imagined that digging up the tar sands would somehow add carbon to the atmosphere? That Canada watched the Arctic melt and then responded like this will be remembered by history."

The Harper government pulled out of the Kyoto Protocol in 2011, promising instead to meet a weaker target of cutting emissions 17% by 2020, against 2005 levels.

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Japan's Fukushima Commits to 100% Renewable Energy

SustainableBusiness.com News

By Rona Fried

Three years after Japan's nuclear meltdown, Fukushima Prefecture announced it will transition to 100% renewable energy by 2040.

The region, which has a population of about two million people, doesn't want to return to nuclear power even as the national government remains committed to getting the reactors back online. A recent survey shows that 53% of Japan's citizens want nuclear power phased out and 23% want it shut down now.

Currently, Fukushima gets 22% of its energy from renewable sources. One of Japan's biggest solar projects could be located there, but residents also want to bring back small farming communities.

Called "Solar Sharing," farmers are growing crops underneath solar panels. They are growing crops like canola - which absorbs radiation - in an effort to decontaminate their farmland and their abandoned livelihoods. Solar panels are designed on a pergola-type structure that lets in enough sun to grow crops below.

They are also planning 1 GW of offshore wind off Fukushima's coast by 2020, where a $226 million floating offshore wind farm project is already in motion.

Nagano, the Japanese prefecture which hosted the Winter Olympics in 1998, has pledged to switch to 100% renewable energy by 2050.

The nuclear disaster has changed the way people think about energy, Tetsunari Iida, director of the Institute for Sustainable Energy Policies in Japan, told Responding to Climate Change (RTCC). On the other hand, community power development offers a sense of "local ownership and participation."

In Germany, 74 regions and municipalities have already reached 100% renewable energy, according to the newly established Global 100% Renewable Energy Campaign.

At the Warsaw Climate Summit last November, delegates were stunned when the Japanese national government rolled back its long-held target of cutting emissions 25% below 1990 levels by 2020. The new target is 3.8% below 2005 levels by 2020.

Japan's Growing Pains

After implementing the world's most generous feed-in tariff two years ago, Japan is now the world's second-largest solar PV market, installing 7 gigawatts in 2013 (the country has 10.5 GW installed in total). Developers turned more to solar than wind or geothermal because it's cheaper and quicker to develop.

The government target for solar is 28 GW by 2020 - and 40% renewable energy by 2030 – and corporations from Softbank to First Solar have been rushing to fulfill it, with 22.4 GW already approved.

Kyocera's floating solar plant:

But developers are running into a raft of barriers, most notably limits to grid capacity, but also finding available land, waiting lists for components and a shortage of qualified technicians.

For example, Softbank's 180-plus GW solar project - three large projects on the island of Hokkaido - has been put on hold because the utility hasn't decided which projects will be able to connect to the grid.

About a quarter of all solar projects are being built on Hokkaido, Japan's second largest island, because it's one of few areas with relatively large pieces of inexpensive land. But the grid can't handle all those projects. About 20% are being denied access to the grid altogether and 37% have been told they will have limited access, according to survey by the Japan Renewable Energy Foundation.

To deal with that, the government is building the world's largest battery bank in Hokkaido (the northern part of Japan) and another, much smaller, 2 MW bank in Okinawa (the southern part) to stabilize the flow of solar energy. It will invest $33 billion on grid modernization and development over the next 10 years, particularly to spur growth of wind energy.

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Water shortages could disrupt Britain's electricity supply, researchers warn

By Terry Macalister, *for The Guardian*

Parts of Britain may be under water after the worst floods in half a century, but a team of top academics from Newcastle and Oxford University is warning that the country is at risk of water shortages that could shut down power stations and paralyse electricity supplies.

Sandbags around an electricity substation close to the swollen river Severn in Gloucester on Saturday. Photograph: Ben Birchall/PA

"It is difficult to fathom we should start to think about water shortages in the middle of these storms but only two years ago areas of Britain were suffering from severe droughts," said Ed Byers, a researcher at Newcastle University's engineering and geosciences department.

"The high dependency on water in electricity generation means there is a real possibility that in just a few decades some power stations may be forced to decrease production or shut down if there are water shortages, which may be expected with changes in climate and a growing population."

Byers, with another Newcastle colleague and Professor Jim Hall, director of the Environmental Change Institute at Oxford University, has been studying the impact on water of the government's proposed different energy "pathways" taken from the 2011 Carbon Plan.

Their new academic paper makes clear that one Department of Energy and Climate Change option – of using gas or other fossil fuels with high levels of carbon capture and storage (CCS) – could increase fresh water consumption by almost 70%.

Another option – using high levels of nuclear power – could lead to increases in the use of tidal and coastal water by almost 400%. Although sea water is clearly in much greater supply than fresh water from rivers, the increase in use could bring with it much more impact on the environment because of potentially harmful emissions.

Using wind power, in contrast, could save water. The academics conclude that a high level of wind or other renewable power technology, with a consequent reduction of other more water-intensive power systems, could result in fresh water consumption falling in the electricity sector by about 60%.

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Higher education gets smart about climate change

By **Gabriela Boscio**, **Axum Teferra** and **Van Du**

The higher education sector continues to be a leader in climate action, and through the American College & University Presidents' Climate Commitment (ACUPCC), more than 670 institutions are collectively taking meaningful measures to mitigate climate change. In the seventh year since the ACUPCC's formation, the network maintains its growth of signatory members and is progressively expanding its database of higher education's greenhouse gas emissions and climate action plans.

As demonstrated through the facts and figures below, there were many key achievements in the past year. In the new year, there will be more opportunities for continued successes.

Successes and achievements

As of November, 616 signatory institutions collectively submitted 1,998 Greenhouse Gas (GHG) Inventories. There were 616 institutions that submitted at least one GHG report, and 492 institutions that submitted at least two GHG reports, with which there are datasets to analyze trends of emission within the ACUPCC network.

The institutions that submitted at least two GHG reports present the following trends on their emissions:

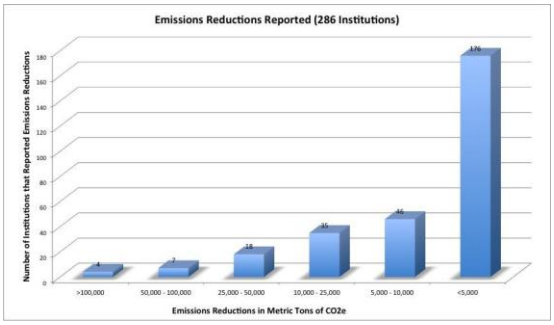
• 286 (58 percent) show a reduction totaling 2,898,816 metric tons of CO2e.

• 198 (40 percent) show an increase of 1,196,815 metric tons of CO2e.

• 8 show no change in their emissions.

• The cumulative emissions reduction from these institutions is 1,702,001 metric tons of CO2e.

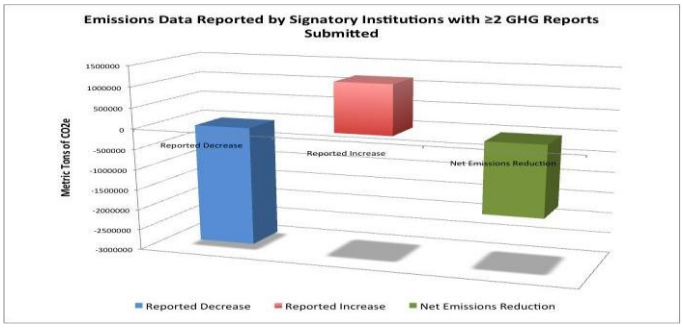
The following figure highlights the net emissions reduction (in metric tons of CO2e) by the 492 signatory institutions that have submitted two or more GHG reports:



This means that 42 percent of the ACUPCC network have reported that implementation activities have resulted in emissions reductions. Twenty-nine percent have reported emissions increases, and 1 percent have reported no change in their emissions. Eighteen percent of respondents that have reported on their baseline emissions, however, have not reported the progress (as they have submitted only one GHG report), and 9 percent of the signatory institutions have not reported their baseline emissions (these institutions may not have a GHG report due yet or may have missed their deadline) as of November.

Of the 286 signatory institutions that reported emissions reduction, 176 (61.5 percent) reported reduction of less than 5,000 metric tons of CO2e. Out of the 286, 1.3 percent reported reduction of more than 100,000 metric tons of CO2e.

The following figure represents further breakdown of the 286 signatory institutions that reported emission reductions:



Of the 198 signatory institutions that reported an increase in their operational emissions, 141 (71.2 percent) reported an increase of fewer than 5,000 metric tons of CO2e. Out of the 198, 1.5 percent reported an increase of more than 100,000 metric tons of CO2e.

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Tips:

Now that summers are round the corner, so Air-conditioners will be put back into service. It is most opportune to remind energy saving tips. Also cold drinks and water once again find place in the refrigerators in the summer, therefore electricity consumption for refrigerators also increase. The consumption of power increases suddenly during summers and shortage of power, forces trips and power cuts. Please make efforts to use these small tips to save energy.

- Use ceiling or table fan as first line of defence against summer heat. Ceiling fans, for instance, it saves power and costs much less than air conditioners.
- You can reduce air-conditioning energy use by as much as 40 percent by shading your home's windows and walls. Plant trees and shrubs to keep the day's hottest sun off your house.
- One will use 3 to 5 percent less energy for each degree air conditioner is set above22°C (71.5°F), so set the thermostat of room air conditioner at 25°C (77°F) to provide the most comfort at the least cost.
- Using ceiling or room fans allows you to set the thermostat higher because the air movement will cool the room.
- Clean the air-conditioner filter every month. A dirty air filter reduces airflow and may damage the unit. Clean filters enable the unit to cool down quickly and use less energy.
- Make sure that refrigerator is kept away from all sources of heat, including direct sunlight, radiators and appliances such as the oven, and cooking range. When it's dark, place a lit flashlight inside the refrigerator and close the door. If light around the door is seen, the seals need to be replaced.
- Refrigerator motors and compressors generate heat, so allow enough space for continuous airflow around refrigerator. If the heat can't escape, the refrigerator's cooling system will work harder and use more energy.
- A full refrigerator is a fine thing, but be sure to allow adequate air circulation inside.
- Think about what you need before opening refrigerator door. You'll reduce the amount of time the door remains open.
- Allow hot and warm foods to cool and cover them well before putting them in refrigerator. Refrigerator will use less energy and condensation will be reduced.

Why synthetic soil holds the key to a sustainable future

The production of soils is an act of sustainability, yet compost is a currency that can be traded

By Rachel Armstrong, *Guardian Professional,*

Without soil there can be no life, but we consistently neglect our soils. Synthetic soils could give the planet a better chance of survival, says Rachel Armstrong Photograph: Julian Stratenschulte/ Julian Stratenschulte/dpa/Corbis

Space agencies have spent a lot of time looking at how soils are made so that we can bring them with us if we need to move or extend our civilisation. Soils are the foundations of every city and we need to understand how they can be produced if we are ever to settle frontiers beyond our planet.

But, closer to home, potential uses of synthetic soil may be just as important for improving the sustainability of the society and economies we already have here on Earth.

Soils are a form of technology. They perform useful work transforming one group of substances into another. Soils enabled us to make the transition from the sea to the land and are the heart of all organic regeneration. Without soils there is no terrestrial life.

Yet we have neglected our soils. We assume they are constant when they are not. Soils are giant organic bodies that change with time, metabolise and - ultimately - die. We plaster our soils with slabs of concrete and tar macadam, which stop them breathing. Consequently our city soils have fewer bacteria and micro-organisms, so things decompose more slowly. We also ship our waste to concentrated tips of garbage where the refuse is incompletely metabolised and often cannot properly return to our soil systems through the process of regeneration and decay.

Until now, creating a synthetic soil has been an agrarian practice which uses various techniques such as the addition of substances or organisms. But in my research on living materials, I am taking a 21st century view of soils. By thinking about the chemical systems embodied in soils and how these complex material systems bring about transformation, I hope to bring synthetic soils to the fore.

I am starting in the built environment looking at the work of soils in our under-designed spaces, such as cavity walls, where they may heat our buildings, filter our water, adsorb toxins and insulate our living spaces.

My work uses inorganic chemistry impregnated with gels to produce soil-like formations, but is also using 3D printing techniques to better understand how soil chemistry works and may be replicated artificially. Soils are ecosystems and if we learn how they operate so that we can build them from first principles, then we may have an opportunity to revitalise and extend our soils so life on our planet can continue to thrive.

The production of soils is an act of sustainability - returning something to the Earth that has been taken during the process of industrial production - yet from a business perspective compost is also a currency that may be traded. Soils also offer great economic and social opportunities for us: the production of heat, filtration systems, recycling, extending our resources.

We are currently losing our fertile soils. They have a finite lifespan and we need to urgently figure out how to prolong their vitality and regenerate them.

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Air pollution: European commission launches legal action against the UK

By John Vidal, *for theguardian.com*

St Paul's Cathedral is seen shrouded in smog in central London in April 2011. Air pollution limits are regularly exceeded in 16 zones across the UK. Photograph: Carl De Souza/AFP/Getty Images

The UK faces fines of up to £300m a year and embarrassing court appearances after the European commission launched legal proceedings against it for failing to reduce "excessive" levels of nitrogen dioxide (NO_2) air pollution from traffic, despite 15 years of warnings and several extensions and postponements granted to the government.

Other European countries have also failed to meet the air quality directive – that should have been adopted in 2008 – but the EU environment commissioner, Janez Potočnik, has singled Britain out for its "persistent" breaches of the air quality directive. The government has been sent a letter of formal notice of the intention to take Britain to court. The UK has been given two months to respond.

In a statement, the commission said that: "Nitrogen dioxide is the main precursor for ground-level ozone causing major respiratory problems and leading to premature death. City-dwellers are particularly exposed, as most nitrogen dioxide originates in traffic fumes … air pollution limits are regularly exceeded in 16 zones across the UK."

The affected areas are Greater London, the West Midlands, Greater Manchester, West Yorkshire, Teesside, the Potteries, Hull, Southampton, Glasgow, the east, the south-east, the east Midlands, Merseyside, Yorkshire & Humberside, the west Midlands, and the north-east. But the commission said that Britain had not presented any "credible and workable plan" for meeting air quality standards by 2015.

Potočnik was spurred into action by the UK Supreme Court's landmark ruling last year which declared that Britain was in breach of the directive and said: "The way [is] open to immediate enforcement action at national or European level."

Air pollution causes 29,000 early deaths a year in the UK and the World Health Organisation has confirmed that air pollution causes cancer. Poor air quality also causes heart attacks and children living near busy roads in the UK have been shown to grow up with under-developed lungs.

According to Potočnik, poor air quality is the number one environmental cause of premature death in the EU with a toll that outstrips road traffic accidents. "It is an invisible killer and it prevents many people from living a fully active life. It already costs Europe €330bn-€940bn (£277bn-£789bn) a year in extra health costs and prematurely killed over 100,000 people a year," he said last year.

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Scotland's sustainable solution for recycling disposable nappies

After the success of a kerbside pick-up scheme, two recycling firms aim to deal with the mountain of used nappies

By Tim Smedley, *Guardian Professional*

The average baby gets through 4,000 nappies, all of which end up in landfill. Photograph: ACE STOCK LIMITED / Alamy/Alamy

The average baby gets through approximately 4,000 nappies before they are potty trained, every one of which goes to landfill. Being made of virgin wood fibre, plastic, and accounting for some 4% to 7% of black bin waste is a big problem for eco-conscious parents and local authorities alike.

A six month pilot in Scotland last year, however, showed that recycling nappies is technologically achievable and logistically possible.

The scheme saw residents in Fife, North Lanarkshire, Perth and Kinross enjoy a kerbside pick-up scheme with a separate bin for absorbent hygiene products (AHP), the term for nappies, incontinence pads and some feminine hygiene products. The collections were taken to a recycling facility in West Bromwich to be cleaned, shredded, pulped, and separated into recycled cardboard fibre and plastic pellets to be used for roof tiles and recyling bins, among other products.

Almost a year on from what was regarded a successful trial, domestic AHP is once again clogging up landfill. The recycling firm Knowaste closed the West Bromwich facility last May. However, both it and Zero Waste Scotland believe that with proof of concept now in place, a service for householders to recycle their AHP is only a matter of time.

At the end of last year a rival solution came on the scene – the Envirocomp facility in Rochester that uses a low-energy composting system that also makes use of the human waste. The nappy wars are on.

"Being the only plant in the world we were basically writing the book on how this process would work," says Paul Richardson, business development director at Knowaste. "Over the two years it provided proof in terms of being able to establish how to process the material and establish the end markets that just didn't exist at the time we started."

Richardson insists the closed plant had outgrown its pilot facility and is in the process of planning several bigger sites in North London, Wales and Scotland. He says 2014 is likely to see one of these sites come to fruition, with a processing capacity of 36,000 tonnes of material.

The energy intensity of the recycling process could even have a sustainable solution in the form of baby poo: it may not be recyclable, but it can fuel anaerobic digestion (AD). "We will look to put a small AD plant either in our facility or based next to an existing one so that our waste material can go there," informs Richardson. "We will not have another site that does not have [sustainable energy] attributes to it."

Composting, meanwhile, has no such energy issues argues Andy Band, director of Envirocomp, whose process is already established in New Zealand. "It is small scale but modular ... It's a different philosophy to Knowaste who were looking at dealing with some 30,000 tonnes of AHP waste and shipping that in from some distances away. Our view is that we should be deploying these plants locally for local solutions."

Whether it's Knowaste's vision of large recycling plants powered by poo or a multitude of local compost heaps, with more than a million tonnes of AHP produced in the UK, there's plenty to go around.

For a kerbside collection to appear in your area any time soon however depends on the economic case, residents who can overcome the "yuk" factor, and the market's appetite for its end products: cardboard, plastic and compost.

"There is a definite effect of landfill tax changing the UK approach to AHP recycling," argues Band of the annually escalating tax that is driving local authority waste policies. "It will make the decision-making process that bit easier for councils ... I think the end market will come – if we've got the right product then we will find the right markets."

Scotland's target of 70% recycling of all waste by 2025 and a ban on biodegradable waste going to landfill by 2021, also provides fertile regulatory ground (as do the English and Northern Irish targets for recycling of 50% and 60% respectively by 2020 and Wales for 70% by 2025).

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Electric Vehicles Charge Forward With 150 Mile Range

SustainableBusiness.com News

Electric vehicles (EVs) are slowly winding their way into the hearts and minds of drivers and the pace is expected to pick up this year.

Worldwide production of all-electric and plug-in vehicles is expected to rise 67% in 2014 to 403,000 vehicles, up from 242,000 last year, according to market research firm IHS Automotive, when they were the fastest growing segment of the auto industry.

Last year, 96,000 EVs sold in the US.

Thanks to competition, battery prices are dropping rapidly - the most costly component of EVs - starting this year, bigger batteries will be in many cars, giving them a 150 mile range.

Battery makers now include LG Chem (Chevy Volt), Panasonic (Tesla's Model S) and Samsung SDI (BMW i3 and Fiat 500e).

IHS points to two reasons for greater growth this year: more stringent emission standards in Europe which take effect later this year and the greater variety of models available on the market.

New vehicles entering the market this year include: BMW's i3, Volkswagen's e-Up!, Mercedes-Benz B-Class Electric and Audi's A3 e-tron plug-in hybrid. More product availability and greater choice will help widespread adoption of EVs.

BMW i3:

At the same time, the installed base of EV charging stations is hitting critical mass at over 1.1 million units worldwide by the end of this year. All this means the price for EVs will start coming down as more manufacturers enter the market, coupled with lower battery prices. Nissan's LEAF is now profitable since it dropped the price $6000.

Then there are the exciting innovations ahead, such as flow batteries, Ford's C-MAX Solar EnergiConcept which charges from rooftop solar panels, Volvo's use of car panels to store energy, which and Bosch's start/stop system that not only shuts the engine off when the car is idling, but when it's coasting - cutting fuel consumption another 10%.

And though negligible today, the market for electric vehicles that are equipped with vehicle-to-grid(V2G) technologies will expand slowly and steadily over the coming years.

"Compelling business models for V2G technologies are starting to emerge in select markets around the world, and it's expected that individually owned electric vehicles will be able to participate in grid services in the second half of this decade," says Navigant Research. They expect over 250,000 V2G-enabled PEVs to be sold worldwide by 2022.

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Heat-related deaths will rise 257% by 2050 because of climate change

Number of heat-related deaths projected to increase in UK as temperature rise, with elderly people most at risk

By *theguardian.com*

An elderly couple enjoy an ice cream on Brighton Pier in the summer heatwave of 2013. Heat-related deaths are expected to rise by 2050, as global warming causes temperatures to rise Photograph: Keith

Deaths as a result of hot weather are to soar over the next four decades as a result of climate change, researchers have predicted.

The number of annual deaths in the UK that occur as a result of the heat will rise by 257% by 2050, they said. Elderly people are most at risk, according to the new study.

While the number of excess deaths seen in the summer months will rise, those recorded in winter will actually decrease, they said.

Researchers wanted to try to determine the effect that climate change will have on temperature-related deaths in the coming decades. Their study, published in the Journal of Epidemiology and Community Health, examined fluctuations in weather patterns and death rates between 1993 and 2006 to characterise the associations between temperature and mortality.

The researchers, from Public Health England (PHE) and the London School of Hygiene and Tropical Medicine, then looked at projected population and climate increases so they could estimate temperature-related deaths for the UK in coming decades.

Researchers noted a 2.1% increase in the number of deaths for every 1C rise in the mercury and a 2% increase in mortality for every 1C drop in temperature. The number of hot weather days is projected to rise steeply, tripling by 2080, they said. Meanwhile the number of cold days is expected to fall, though at a less dramatic pace.

At present there are around 41,000 winter-related deaths and 2,000 excess summer deaths.

The authors predicted that without adaptation, the number of heat-related deaths will increase by 66% in the 2020s, 257% by the 2050s and 535% by the 2080s. Cold weather-related deaths will increase by 3% in the 2020s, then decrease by 2% in the 2050s and by 12% in the 2080s, they added.

This means by 2080 there will be around 12,500 heat-related deaths and 36,500 cold-related deaths.

The authors said that the burden of extreme weather remains such higher in those over the age of 75, particularly in the over-85s.

At present there are regional variations in excess temperature-related deaths and these are likely to persist, they added. The south and the Midlands are the regions most vulnerable to heat while Wales, the north west, the east of England and the south are most vulnerable to the cold.

"The most direct way in which climate change is expected to affect public health relates to changes in mortality rates associated with ambient temperature," they wrote. "In the UK, thousands of preventable deaths occur naturally from cold weather and a smaller burden is also associated with hot weather. Future changes in climate are likely to lead not only to an increase in heat-related deaths in the UK, but also a proportionally smaller decrease in cold-related deaths."

They added: "Our results indicate that health protection from hot weather will become increasingly necessary this century, and measures to reduce cold impacts will also remain important. Air conditioning is likely to become more widely used in the UK, which will reduce heat vulnerability. However, the distribution of cooling systems may reflect socio-economic inequalities unless they are heavily subsidised, and rising fuel costs may exacerbate this."

Dr Sotiris Vardoulakis, head of the PHE's air pollution and climate change group and co-author of the paper, said: "During periods of warmer weather higher temperatures can lead to greater-than-usual stress on the body caused by heat and higher levels of air pollution, which can aggravate the symptoms of those with chronic conditions, such as cardiovascular and respiratory conditions."

"This paper has again pointed to the anticipated growth of the UK's elderly population, broadly the most at-risk group from the effects of heat, and again states that because the UK elderly population will grow over the coming years, it will be even more important to plan how the country will cope with forthcoming temperature rises."

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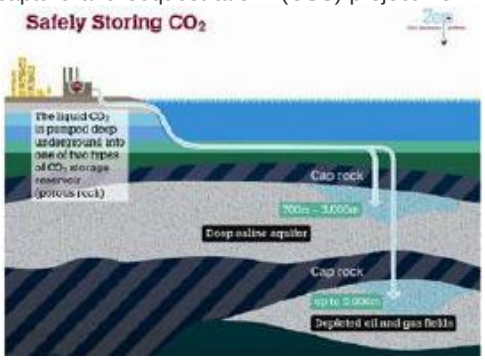
UK Greenlights Carbon Capture From Natural Gas

SustainableBusiness.com News

The first industrial carbon capture and sequestration (CSS) project from natural gas has been given the go-ahead by the British government with Shell as the contractor.



Shell UK is launching the design phase for Peterhead Carbon Capture and Storage in Aberdeenshire, Scotland.

It would capture over 85% of CO2 emissions that would otherwise be released into the atmosphere and then transport it through an existing pipeline to be buried in a depleted gas field 2.5 kilometers beneath the North Sea.

After the design is completed next year, Shell and the government will decide whether to pursue the rest of the project.

If it goes forward, it would capture 1 million tons of carbon emissions a year while providing electricity to over 500,000 homes.

"Demonstrating carbon capture on this existing gas power station would enable us to test the technology and cut emissions from our energy sector whilst we transition to a renewable future," Lang Banks, Director of World Wildlife Fund Scotland, told BBC News.

Last year, the government announced a similar project for a coal plant in Yorkshire, the White RoseCCS project.

Both projects are receiving a combined £100 million from the government for the design phase. By 2050, the government says, CCS could provide more than 20% of the country's electricity and save more than £30 billion a year to meet its climate targets.

The UK has very aggressive climate targets to reach: reducing greenhouse gas emissions 50% below 1990 levels by 2020 and 80% by 2050. Another target is for 30% of electricity to come from renewable energy by 2020. Scotland's goal is to generate 100% of electricity from renewables by 2020.

Norway's $1 billion capture and storage plant is the largest in the world.

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State of Green Business: Energy storage becomes a game-changer

By Joel Makower,

One of a series of excerpts from the 2014 State of Green Business report (download here).

One of the big technology stories of 2013 had to do with batteries. Not your garden-variety AA or D type, or even the rechargeables found in phones, laptops and cordless appliances. We're talking about large-scale batteries that provide energy storage for the grid. That story will become even bigger in 2014, as technology and economic forces begin to solve one of the big hurdles to a low-carbon energy future. And it increasingly will affect how many companies and commercial and industrial building owners manage energy.

Lithium-ion battery (Credit: Janaka Dharmasena via Shutterstock)

The ability to cost-effectively store energy to power buildings is nothing less than a game-changer. For starters, it enables renewable energy to more easily become cost-effective. No longer do solar- and wind-energy customers need be subject to the vagaries of the sun and wind. Energy can be produced when it's shining (or blowing) and saved for a rainy day, literally.

Battery technology is nothing new, but for years companies have been trying to create a new generation able to store megawatts of energy — enough to power homes and businesses. Doing so not only will benefit renewables, but also will make homes and businesses better able to withstand outages or disruptions. After years of hard work, the technologies finally are achieving the price and performance targets needed to make the competitive.

The growing commercial uptake is due in large part to technological advances, but also in response to Superstorm Sandy and other extreme weather events that knocked out power to large areas, and knocked some companies for million- or billion-dollar losses. Suddenly, back-up power is looking more and more like a necessity.

Fortunately, the technology is marching forward. There are now 29 energy storage technologies in use worldwide, according to Navigant Research. They range from the conventional — refrigerator-sized bundles of lithium-ion batteries (the kind used in laptops, among other places) — to, well, the less conventional, such as capacitor batteries, lithium titanate oxide, nickel-iron and solar thermal. That's a lot of technologies, and there no doubt will be a shake-out, as we've seen with solar and many other technologies.

The sheer number is a factor of the global interest in harnessing energy storage to store both renewable and nonrenewable energy, to be used at times it is needed most, whether on a daily basis or for "just in case." Asia seems to be taking the lead on energy storage, in particular China and Japan, for somewhat different reasons: China to make maximize use of renewables instead of polluting coal plants, and because its grid remains shaky and in need of reliable power; Japan in response to the Fukushima nuclear power plant disaster, which has resulted in dramatic increases in demand for renewable and backup power.

But the situation isn't that different in North America, Europe, Russia and the Middle East. As energy grids become more diversified and bigger, there are emerging opportunities for large-scale energy storage systems.

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Veganuary could be a stepping stone to more sustainable eating

Go vegan for January? How short-term, positive campaigns could help people reconsider the way they eat

By Damien Clarkson, *theguardian.com*

A boy enjoying a mass of tomatoes on a vegetable stall at Brighton Open Market. Photograph: Alamy

What if I said you could switch to a diet of tasty, healthy food, which could reduce your weight and lessen your impact on the environment, more so than if you stopped driving and flying? What if this meant you would be eating no eggs, dairy, meat or fish?

This January thousands of people have joined the Veganuary campaign, stepping up to the challenge of giving veganism a go for 31 days.

Traditionally the vegan message has been focused on ending cruelty to animals, but veganism achieves much more. There are many health and environmental benefits to be found in adopting meat-reductionist diets and thinking more about what we eat. With Veganuary we wanted to take a relaxed, non-judgmental approach, asking people to take part whatever their motivation. Our goal is to provide a supportive stepping stone towards adopting a vegan diet for January, and hopefully to shift the diets and perceptions of thousands of people.

We've been overwhelmed by the reaction. In just two months, the Veganuary Facebook community has grown to 5,700, with no major advertising spend or media coverage. There's a real desire by participants to document and share their experiences online; they support one another daily as they learn, as well as accessing experienced vegans who are on hand for advice. Taking part this year, Emma Spradbury said: "I've enjoyed the Veganuary site and followers' support. I'm pleased to now be more educated and in a position to counter many of the negative and stereotypical comments about veganism."

Veganuary founders Matthew Glover and Jane Land wanted to create a campaign with mass appeal. "We chose to focus more on the health aspect of veganism and how great the food can taste, rather than on the ethics and environmental issues. In many respects this goes against the grain of why we became vegans, but we've tried to 'put ourselves in the shoes of non-vegans' and consider what might motivate them to consider a vegan diet." Matthew continued, "However, the ethical arguments are still within the campaign materials when people are ready for them."

Part of the inspiration to approach behavioural change in this way was a talk by animal-rights campaigner Tobias Leenaert. His insight was that health and taste were more-common entry points to meat-reduction than the environment and animal welfare. But that over time people who started doing a Meat Free Monday or a Veggie Thursday often gradually became more interested in the animal welfare aspects.

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New campaign seeks to drive low-carbon urban transportation

By Holger Dalkmann

CO2 emissions — due in large part to urban transport — and projected to generate 65 percent of global economic growth by 2025, they are the battleground where the fight for sustainable development will be won or lost. Human society has a lot riding on the safety and efficiency of the transport sector. Transport not only has the potential to enhance or degrade the public spaces, health and economic dynamism of where the majority of humanity lives — in cities — it also has a significant impact on our planet.

With cities already producing 75 percent of global

So it's encouraging that some major players recently called for action so that cities and their transport systems can grow sustainably. Two weeks ago, EMBARQ, the sustainable transport and urban development program of the World Resources Institute (WRI), and the World Bank co-hosted Transforming Transportation, with the support of a team of partner organizations.

The two-day event concluded with the announcement of Transport Delivers, a global campaign calling city and national leaders to better integrate sustainable transport into policy discussions on development and climate change. If the campaign's objectives are fully implemented, they could be a game-changer for today's cities — as well as tomorrow's.

Transport Delivers

Transport Delivers, spearheaded by the Partnership on Sustainable Low Carbon Transport (SLoCaT), will help create and promote a collective voice on sustainable, low-carbon transport. These proposed actions aim to inform political discussions of both the Open Working Group on the Sustainable Development Goals (SDGs) and the deliberations under the United Nations Framework Convention on Climate Change. Given the upcoming Climate Summit 2014 hosted by United Nations Secretary-General Ban Ki-moon, the definition of the SDGs and the 20th and 21st Conference of the Parties to the UNFCCC in Lima in 2014 andParis in 2015, the next two years represent a critical opportunity to embed transport into the heart of global climate change and development commitments.

A variety of wheels in Pune, India (Credit: willi_hybrid via Flickr)

The Transport Delivers campaign was announced by Cornie Huizenga, joint convener of SLoCaT. Because building a sustainable future for our society and our planet requires a goal-driven strategy, Transport Delivers has articulated four calls to action to accelerate the implementation of sustainable transport solutions such as public transport, bike lanes and pedestrian walkways. These new objectives build on the voluntary commitments on sustainable transport developed at the Rio+20 Conference on Sustainable Development in June 2012.

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Cheap batteries will revolutionise the renewable energy market

By Chris Huhne, *for The Guardian*

Elon Musk, the CEO of Tesla Motors, posing with with a Tesla elecric car in Times Square. Photograph: Mark Lennihan/AP

News this week, from opposite ends of the planet, that points to the convulsion of change about to hit the global economy. The first report came from Palo Alto, California, headquarters of the Tesla electric car company. Tesla's car produces no carbon emissions (so long as the electricity that charges its batteries is also low carbon). Tesla's chief executive, Elon Musk, announced it would invest in a $4bn-$5bn "gigafactory" doubling the world's production of lithium-ion batteries. These power your mobile phone, but also Tesla's high-end luxury electric cars. The objective is to cut battery prices by 30% in three years, and to halve them by 2020.

Since battery cost is the main obstacle to electric cars, this is potentially game-changing. It would allow electric cars with a 200-mile range to compete with the Ford Mondeo and not just the BMW 5-series (Tesla has already spurred the Bavarian luxury car-maker into an electric response).

Tesla is treading the route first mapped by Henry Ford, whose mass production of the Model T halved the price of US cars. The same happened with computer memory and, more recently, solar panels, whose price collapsed by half in just over a year.

Nor is scale the only likely development in batteries. There is work going on in nanotechnology, making things tiny. This allows a much greater surface within a given size of battery, so that charging will be quicker, and storage capacity higher. If scale and technology work their miracles, cheap batteries will disrupt many more industries than cars.

Most fundamentally, it will make the transition to low-carbon electricity far easier. Renewables like solar and onshore wind are coming down dramatically in price – the industry forecasts they will be cheaper than grid electricity in most of the world by 2025 – but they have a key disadvantage: they do not produce electricity when people want it.

This matters. The UK is typical in having an enormous variation in electricity use through the day, with demand when the kettles go on in the Coronation Street ads nearly double that in the early morning. Wind and solar cannot meet this without a cheap and effective battery solution.

Car batteries can be used to store and then provide electricity when demand peaks. And battery packs in the loft could charge up when the sun shines and the wind blows, and then supply heat, light and boiling water on winter evenings. Tesla's battery plant brings that prospect far closer.

Hot on the heels of Tesla's news, there is a report from Essen in Germany, a Ruhrland town at the heart of the last industrial revolution. It is where RWE – one of Europe's biggest power utilities and owner of the UK's npower – this week announced an annual loss of €2.76bn, its first since 1949.

Until now power utilities have been regarded as among the safest of blue chip stocks,. No longer. RWE's loss followed a record loss posted by one of the world's biggest electricity generators, France's GDF Suez. The change, as RWE made clear, was due to its failure to move quickly enough into renewables, which are causing massive changes to the German electricity grid.

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Why recycling smartphone batteries is vital for sustainability

By Tim Smedley, *Guardian Professional*

Collecting the batteries we keep stored and unused at home is an urban mining resource that is woefully underexploited. Photograph: Carlos Barria/REUTERS

Few smartphone batteries end up in a landfill. In part this is thanks to strict UK and EU landfill regulation and directives on battery disposal. But even countries without regulation tend not to throw away the lithium-ion batteries that power smartphones and the majority of portable electronic equipment, due to their reusability and the salvageable metals they contain.

The bad news is that the current recycling rate of lithium-ion batteries is poor. Friends of the Earth reports that the amount collected for recycling in the EU in 2010 was an estimated 1,289 tonnes, accounting for only 4-5% of the lithium-ion batteries sold that year. Instead, rather than recycle our old mobile phones we tend to keep them unused in drawers, trapping within them the precious metals they contain.

When Sony introduced the first rechargeable lithium-ion battery in 1991, it rapidly replaced the more toxic alternatives on the market such as nickel cadmium. The main metal component of lithium-ion batteries is cobalt, accounting for 10-20% of the battery, plus small amounts of nickel, copper and aluminium enclosed in plastic, and a liquid electrolyte solution. These can be and are recycled.

The metals are typically recovered in a high-temperature process that fuses them together as an alloy, sometimes using the plastic casing as a fuel. Umicore, the biggest recycler of lithium-ion batteries in Europe and also a major manufacturer of battery parts for Asia's smartphone manufacturers, uses this process and believes that recovering metals this way has a 90% smaller ecological footprint than primary mining.

"The content of precious metals is something like 100 times that which you find in the ground", explains Sybolt Brouwer, head of battery recycling at Umicore. "Portable batteries contain 10% or more of cobalt, that's an amount that you do not find in nature as such. So you don't need to look further than the 'urban mine' to find very rich materials."

The resources of urban mining – in this context, collecting the batteries we keep stored and unused at home – is woefully underexploited. The vast majority of metals in smartphone batteries come from primary mining, often from processes that cause great environmental damage and from countries with few environmental regulations. The world's biggest producer of cobalt is the Democratic Republic of Congo, with stories of acid dumping and child labour commonplace.

Another destination for unwanted smartphones is the valuable secondary market in Asia and Africa. "We take everything that comes to us, but there are certain streams that don't come our way because of the economics", says Scott Butler, managing director of UK-based European battery recycler ERP. "The amount of mobile phone and smartphone technology that we get back is incredibly tiny". He doesn't rule out some of it ending up in the bin either for the simple reason that, "if it fits in a bin, there's a good chance it ends up in a bin". Modern landfill sites should be sufficiently equipped to avoid toxic leakage from phones disposed of in this way, but the greater environmental damage is really caused through the subsequent loss of resources and the ongoing need for primary mining.

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Richard Branson pledges to turn Caribbean green

By John Vidal, *for The Observer*

Richard Branson says Caribbean islands could use renewables for most of their energy needs within five years. Photograph: Jenny Bates for the Observer

The palm trees and billiard table have been shipped in, work on the infinity pool overlooking the coral reef is progressing and the tennis courts are celebrity-ready. But few of the super-luxury buildings rising on Moskito island's beaches are finished yet.

Moskito is Sir Richard Branson's number two Caribbean island, but it will soon be his new family complex. It is just over a mile from Necker island, which he bought in his 20s for £250,000 and now rents for £40,000 a night.

Both islands are eco-trophies for Britain's best-known entrepreneur, but his plans to ditch the use of diesel power and to generate electricity from wind and solar are expected to have a profound impact on dozens of far poorer nearby islands facing crippling debt, hurricanes and climate change.

Last week Branson hosted a summit of financiers, politicians, energy companies, lawyers and others on Moskito and Necker to work up a plan to "green" the Caribbean, island by island. Five prime ministers and 12 governments, as well as international bankers and investors, heard renewable energy experts explain how the region's islands, which currently generate nearly all their electricity from diesel, could save hundreds of millions of dollars a year and reduce emissions by 50% or more.

Necker and Moskito will be 75-80% converted to use renewable energy and become working models for how other islands could cut expensive diesel imports, while all Caribbean governments will be offered a technical and financial blueprint on how to switch, by US energy thinktank the Rocky Mountain Institute and Branson's green business group, Carbon War Room.

So far the governments of Aruba, St Lucia, the British Virgin Islands, St Kitts and Nevis, Grenada, the Turks and Caicos, Dominica and the Colombian islands of Providencia and San Andrés have said that they will aim to increase their use of renewable energy and cut diesel imports. Last week the US government's private-sector lending arm said it would support the efforts by the islands to go green by offering loans of up to $250m for renewable energy and energy-saving projects.

"This is personal and global. Moskito is now our family home. We know that islands will suffer the most from climate change and sea level rise. Reefs will be devastated, and wildlife decimated," Branson told the Observer in an interview. "It's realistic to think that whole islands could be 75-80% clean energy in four to five years. It might not make sense to do the last 25%, but they all ought to be able to go 75-80% using wind and solar energy.

"Governments [here] need help. I think a lot of ministers may be new to the job; they can't be experts at climate or energy. Some need a helping hand to make the transition to renewables. We can really save families 40% of what they have to pay for electricity," he said.

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Could Corn Ethanol Finally Fade Away?

SustainableBusiness.com News

By Cheryl Kaften

Could Corn Ethanol Finally Fade Away?

Last December, Senators Dianne Feinstein (D-CA) and Tom Coburn (R-OK) took a bold step - they introduced legislation to eliminate the mandate that puts 10% corn ethanol into every gallon of gas at the pump - the Corn Ethanol Mandate Elimination Act of 2013.

The previous year, Congress allowed the industry's tax breaks to expire.

Says Senator Feinstein in her blog: "I am pleased to join Senator Coburn and others on a bill to eliminate the federal corn ethanol mandate from the Renewable Fuel Standard (RFS), while maintaining provisions designed to grow the low-carbon biofuel industry.

"Under the corn ethanol mandate in the RFS, roughly 44% of U.S. corn is diverted from food to fuel, pushing up the cost of food and animal feed and damaging the environment. Oil companies are also unable to blend more corn ethanol into gasoline without causing problems for automobiles, boats and other vehicles. I strongly support requiring a shift to low-carbon advanced biofuel, including biodiesel, cellulosic ethanol and other revolutionary fuels. But a corn ethanol mandate is simply bad policy."

The legislation came shortly after the U.S. Environmental Protection Agency - for the first time - proposed lower volumes of ethanol for 2014. EPA proposes that ethanol volumes be reduced by 3 billion gallons, to 15.21 billion gallons this year.

The lower volume is necessary to prevent ethanol levels from growing to more than 10% in gasoline blends because petroleum demand in the US is down. Unless vehicles can handle E15 (15% of ethanol), the additional ethanol can cause problems in gasoline engines. It could also raise prices at the pump. Ford, GM and Honda say all their vehicles are approved for E15, but others aren't.

That set up a firestorm which continues to this day, with the petroleum industry strongly in favor (which wants the Renewable Fuel Standard repealed) and the ethanol industry and corn-producing states strongly against the change.

In fact, the ethanol industry is lobbying for an ethanol blend of 15%. Bob Dinneen, President of the Renewable Fuels Association (the trade association for the ethanol industry) says cutting the mandate after farmers harvested the largest corn crop in US history (14 billion bushels, a 30% increase from 2012), is "monumentally stupid." "This legislation ought to be entitled 'The Oil Monopoly Protection Act of 2013,'" he told The Hill.

Also in favor getting rid of the ethanol mandate are these industries: prepared food industry; dairy, beef and poultry (they want the corn to feed animals); engine manufacturers and boaters; hunger relief organizations and environmental groups (who don't want corn to dominate agricultural acreage over many other crops).

Many studies show that corn ethanol supports have been very costly, because it's produced and transported using fossil fuels (more greenhouse gas emissions), and encourages further clearing of land for food, which is decimating remaining native prairies.

On the other hand, ethanol plants have become much more efficient especially compared to much dirtier Canadian tar sands fuel, which is increasingly being used in the US.

The use of ethanol has supplanted billions of gallons of petroleum, part of the reason for lower oil demand. That's the source of the oil industry's ferver over the issue - it threatens the industry's de facto monopoly on transportation fuels. Reining in or preferably repealing the Renewable Fuel Standard is a top priority for oil companies.

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Cookstove designs are failing the poorest communities

Cookstoves are desperately needed in refugee camps but current designs aren't working. Bottom-up innovation is vital

By Jo Confino and Laura Paddison, *Guardian Professional*

Cookstove designs are not working because the design process has not been bottom up, starting with the needs of those who use them. Photograph: Mohamed Nureldin Abdallah/REUTERS

With all the knowledge and technology we have at our disposal, why is it proving so difficult to design and create simple and efficient cookstoves for the three billion people who use them in the developing world?

This is the question posed by T. Alexander Aleinikoff, the United Nations deputy high commissioner for refugees, who complains that stoves are being designed with little thought for the people who use them.

The Office of the United Nations High Commissioner for Refugees (UNHCR) gets sent a steady stream of newly designed cookstoves from entrepreneurs around the world, but none of them has so far come up to scratch.

Every year around four million people die from smoke inhalation. Inefficient stoves, which rely on solid fuels, also contribute to climate change and deforestation.

"We're in the situation where everybody and his brother has invented a cookstove and none of them have really worked well for us,' says Aleinikoff.

"I've been in refugee camps where large, beautiful solar cookstoves were used as storage places because they didn't cook the food fast enough."

Aleinikoff says designers mistakenly think they can come up with a one-size-fits-all approach, failing to understand the cultural complexity of cooking or the conditions in which the stoves are used.

"The stoves that we get are from people who sat in laboratories and said 'gee this kind of gas is very efficient'. But what does it cook? What is the food refugees want to cook? When do they cook it? How does it fit into their social and cultural patterns?"

He says the UNHCR needs to become more innovative in its approach, as the current organisational culture does not encourage flexibility among field staff to adapt to different circumstances.

Aleinikoff says: "When I was in Dollo Ado [Ethiopia] this last week, I was standing in one part of the camp and there were these mesh structures and I said 'what are these?', and was told 'these are the kitchens we've built outside the homes but no-one's using them; they didn't work'. 'Who designed them?' I asked. 'We designed them back in headquarters' was the response."

Aleinikoff points to some areas around refugee camps that have been virtually stripped of trees, and says this also causes conflicts with the established local community.

Per Heggenes, the CEO of the Ikea Foundation, which has formed a strategic partnership with the UNHCR, believes this is exactly the type of area in which philanthropy can make a practical difference.

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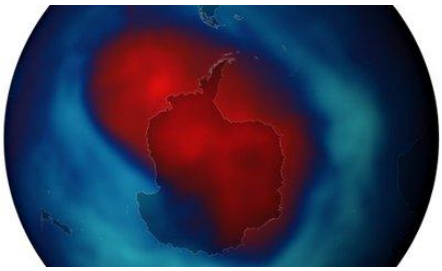
New ozone-destroying chemicals found in atmosphere

By Damian Carrington, *for theguardian.com*



The ozone hole reached its biggest extent for the year on 26 September, 2013. Photograph: NOAA

Dozens of mysterious ozone-destroying chemicals may be undermining the recovery of the giant ozone hole over Antarctica, researchers have revealed.

The chemicals, which are also extremely potent greenhouse gases, may be leaking from industrial plants or being used illegally, contravening the Montreal Protocol which began banning the ozone destroyers in 1987. Scientists said the finding of the chemicals circulating in the atmosphere showed “ozone depletion is not yesterday’s story.”

Until now, a total of 13 CFCs and HCFCs were known to destroy ozone and are controlled by the Montreal Protocol, widely regarded as the world’s most successful environmental law. But scientists have now identified and measured four previously unknown compounds and warned of the existence of many more.

“There are definitely more out there,” said Dr Johannes Laube, at the University of East Anglia. “We have already picked up dozens more. They might well add up to dangerous levels, especially if we keep finding more.” Laube and his colleagues are in the process of fully analysing the dozens of new compounds, but the work completed on the four new chemicals shows them to be very powerful destroyers of ozone.

Laube is particularly concerned that the atmospheric concentrations of two of the new compounds, while low now, are actually accelerating. “They are completely unimpressed by the Montreal Protocol,” Laube told the Guardian. “There are quite a few loopholes in the Protocol and we hope some of these are tightened. But the good news is that we have picked up these [four] early.” The chemicals take decades to break down in the atmosphere, meaning their impact on ozone and climate change is long-lived.

“This research highlights that ozone depletion is not yesterday’s story,” said Prof Piers Forster, at the University of Leeds, who was not involved in the study. “The Montreal Protocol – the most successful international environmental legislation in history – phased out ozone-depleting substances from 1987 and the ozone layer should recover by 2050. Nevertheless this paper reminds us we need to be vigilant and continually monitor the atmosphere for even small amounts of these gases creeping up.”

The new research, published the journal Nature Geoscience, analysed air samples captured since the mid-1970s in several ways. Air bubbles trapped in snowpack in Greenland, samples taken by scientists in Tasmania and others collected by aircraft flying 13 miles above Europe were all analysed. The team found three new CFCs and one HCFC, none of which had been identified before. “I was surprised no-one had picked these up before,” said Laube. At least 74,000 tonnes of the four newly discovered chemicals have been emitted, the scientists estimate, although in the 1980s one million tonnes of other CFCs were pumped into the atmosphere every year.

Despite the production of all CFCs having been banned since 2010, the concentration of one – CFC113a – is rising at an accelerating rate. The source of the chemicals is a mystery but Laube suggests that CFC113a may be being used as a feedstock chemical in the production of agricultural pesticides. “But we can’t rule out illegal sources,” he said.

CFCs and HCFCs were used mainly in refrigeration and aerosol sprays but, in 1985, scientists discovered the Antarctic ozone hole. It grew in size from almost nothing in 1979 to a peak of 26.6m sqkm in 2006. As the Montreal Protocol has taken effect, it has recovered slowly, shrinking to 21.0m sqkm in 2013. Ozone screens out harmful ultraviolet rays from sunlight that can cause cancer in humans, as well as damaging marine life, crops and animals.

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White Roofs Win As 'Coolest' Roof

SustainableBusiness.com News

By Heleigh Bostwick

It's no surprise that white roofs triumph over black ones when it comes to mitigating climate change, but as a recent study points out - on economics at least, white roofs also beat out green roofs.

"Both white and green roofs do a good job at cooling the

building and cooling the air in a city, but white roofs are three times more effective at countering climate change than green roofs," says Arthur Rosenfeld, scientist emeritus at Lawrence Berkeley National Lab, and co-author of their report that compares white, green, and black roofs based on economic benefits.

The study compares the three kinds of roofs on their cost-effectiveness over a 50-year time span by analyzing 22 commercial flat roof projects. It assumes a 20-year life for white and black roofs and 40 years for green roofs.

As the world's populations move to cities, heat islands are an increasing driver of global warming and human health problems. Carbon absorbing trees and soil are replaced by black, heat-absorbing roads and roofs, raising surface temperatures by as much as six degrees Fahrenheit.

While green roofs provide stormwater management and clean the air along with other benefits, they don't cut energy use as much, the study concludes. White roofs reflect about three times more sunlight than green roofs - they can be 50°F cooler during the heat of summer, keeping building interiors several degrees cooler.

This was clearly demonstrated last spring in Chicago's

"Battle of the Bulbs" competition when two buildings - one with a green roof, the other with a white roof - competed on which had lower electric bills. The white roof won, saving more than $40,000 in electric bills over the green roof.

And white roofs are cheap - all it takes is a coat of paint, while it costs $10-$35 per square foot for a green roof.

"When we started the study it wasn't obvious that white roofs would still be more cost-effective over the long run, taking into account the longer service time of a green roof," notes Benjamin Mandel of Berkeley Lab.

Another study by the Environmental Protection Agency offers more refined results. Scientists found that white roofs save more energy in warmer climates. In northern climates, cooling a building could require more use of heating fuels in the winter, they say. Although green roofs don't cool a building as well in the summer, they may keep northern buildings slightly warmer in the winter.

One thing that's certain is that black roofs have got to go - in addition to being a poor choice in terms of energy bills and climate change, they pose significant health risks during the summer in urban areas.

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Chevy Does It Right! Supports Clean Energy at Colleges, Retires Carbon Credits

SustainableBusiness.com News

Chevy is rolling out an innovative program that offers US colleges and universities the opportunity to earn money when they increase their investment in energy efficiency and renewable energy on campus.

The "Chevrolet Campus Clean Energy Campaign" is already buying renewable energy credits (RECs) from top performing schools when they make such upgrades.

Chevy says their objective is simple: to "strengthen the clean energy systems across the country that we want to be powering electric vehicles like our Volt and Spark EV while retiring carbon credits to benefit the climate."

Instead of selling the credits on the open market (where other organizations can buy them to continue polluting), Chevy will retire them to reduce US carbon emissions.

Buying RECs from universities will give them 5-25% of the money they need to cover upfront costs that may stand in the way of more aggressively converting to clean energy or upgrading buildings.

Campus carbon reductions are evaluated based on campus-wide performance or based on individual LEED-certified buildings.

"Historically, campuses purchased other organizations' carbon credits to help achieve carbon neutrality," says Eban Goodstein, director of Bard College's Center for Environmental Policy. "Now they are *earning* revenues for the carbon reductions achieved right on their own sites, where the long-term clean energy benefits lie for their community."

As you likely know, when an organization - be it a corporation or university - sets a goal to reduce carbon emissions, they often do it partially by deploying projects on the ground and the remainder by buying RECs.

To develop the program, Chevy worked with an advisory team led by the Climate Neutral Business Network with support from the Bonneville Environmental Foundation, the U.S. Green Building Council and the Association for the Advancement of Sustainability in Higher Education. The method for measuring carbon reduction from projects is approved by the Verified Carbon Standard.

Indiana's Ball State University is among the first to work with Chevy in converting from coal to the nation's biggest geothermal system:

"Financing made available through Chevrolet can seed the creation of green revolving loan funds at colleges and universities ... which fund additional conservation and energy use reductions. This is a virtuous circle that empowers campuses to pursue deep systems-thinking efficiencies. It's a great way to find new roads to travel together towards a clean energy future," says Robert Koester, professor of architecture and Chair of Ball State University's Council on the Environment.

The initiative is part of Chevy's Carbon Reduction Initiative, which is spending $40 million to reduce 8 million metric tons of carbon - about the carbon absorption power of Yellowstone National Park's mature forest.

<Source>

Kerry announces 'unique co-operative effort' with China on climate change

By Martin Pengelly in New York**,** *for theguardian.com*

John Kerry torques an engine bolt during a tour of the Foton Cummins Engine plant in Beijing. Photograph: Evan Vucci /AFP /Getty Images

Secretary of State John Kerry on Saturday announced a "unique co-operative effort" with China on the issue of combating climate change.

In a press conference at a Beijing car-making factory, the Cummins-Foton Joint-Venture Plant, which he visited as part of an Asia tour, Kerry said he and local representatives had "succeeded in completing our agreement with respect to some steps we are going to take to move the climate change process forward".

Kerry is scheduled to continue his tour, which started with talks in Seoul at which he heralded China's stance on North Korea's nuclear arsenal, with visits to Indonesia and Abu Dhabi.

On Saturday, he continued: "One of the most important challenges that we all face here in China, in America, in Europe and other countries … is how do we improve the quality of the air that we breathe and at the same time reduce the greenhouse gas emissions which contribute to climate change? To be successful, it is going to take the cooperation of China and the United States – not just our governments, but also our industries."

Kerry said China and the US, the world's largest emitters of greenhouse gas, had a "special role" to play in reducing those emissions, and cited progress made on the issue during vice-president Joe Biden's visit to Beijing last year.

Earlier this week, a Chinese report said pollution had made Beijing "barely suitable" for living. The report ranked the capital second worst out of 40 global cities for its environmental conditions – behind Moscow. Also this week, the Chinese government announced that it will spend up to 10bn yuan ($1.65bn) to fight air pollution.

In January, overruling opposition from the UK, the European Union pledged to cut its greenhouse gas emissions by 40% by 2030.

Kerry said: "Last year, when I was here, we joined together with … China's leaders in what we call the Strategic and Economic Dialogue. Within this dialogue, we have launched five initiatives as part of our Climate Change Working Group.

"I'm very pleased to report today that we have completed implementation plans for those five initiatives on heavy-duty vehicles, on smart grid for the delivery of energy, on carbon capture, utilization and storage, on energy efficiency, and finally on collection and management of data.

"I'm very pleased to also announce today that the leaders of China have agreed to join us in a mutual effort – China and the United States will put an extra effort into exchanging information and discussing policies that will help both of us to be able to develop and lead on the standards that need to be announced next year for the global climate change agreement.

"This is a unique cooperative effort between China and the United States, and we have hopes that it will help to set an example for global leadership and global seriousness on the issue of next year's climate change negotiation."

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The Future for LED Lighting: Improving Health & Mood

SustainableBusiness.com News

The *NY Times* posted a fascinating article on LED lamps; that they can - and will - be used for more than illumination.

In the future, they could well be used to improve health, moods and food production by taking advantage of their ability to shift colors.

Besides being the most energy efficient lighting technology to date, LEDs can be programmed to create light in multiple colors that can make you feel more alert, calm or sleepy.

A company called Tabu, already makes a bulb that can be dimmed or programmed to change colors via your smartphone.

And Philips sells a range of "energy-enhancing" lights, such as goLITE BLU which counteracts the "winter blues" through a panel of blue LEDs. It also has a Wake-up Light.

"You have to start thinking of light as a drug," Terry McGowan, director of engineering for the American Lighting Association told the *NY times*

A good drug, not a bad drug. Any artist knows that color affects mood. The blue end of the spectrum stimulates photoreceptors in the eyes that help you stay alert by reducing melatonin production (which puts you to sleep). When the amount of blue is reduced, melatonin production rises and you feel more relaxed and sleepy.

This summer, Lighting Science says it will debut "Rhythm Downlight," which can adjust the amount of blue light using a smartphone app based on your sleep schedule.

While the light won't visibly change in color or brightness, your circadian system will sense it, according to the company.

Lighting manufacturers are also targeting innovations for hospitals and greenhouses.

Philip's experimental HealWell system can change colors based on time of day, encouraging patients to wake up or feel more relaxed and sleep more easily. One study found that cardiology patients slept longer and experienced less depression when the LED was used, says the *NY Times*.

They are a natural fit for greenhouses, where lighting is crucial for growing crops. With LEDs, that process can be fine-tuned by using specific hues of color.

"We find the optimal light recipe for the grower," Udo van Slooten, general manager for horticulture at Philips Lighting, told the *NY Times*.

Soon, LEDs will be outfitted with sensors. That would enable them direct light based on how many people are in a room and their location, and the lighting intensity could be raised or lowered depending on the age of the people in the room (older people may not see as well, needing more intense light). Combined with facial recognition technology they could identify stressed medical patients and tone down the hue to more calming values.

Read the full article:

Website: www.nytimes.com/2014/02/06/technology/personaltech/leds-change-thinking-about-the-light-bulb.html

<Source>

Skin-whitening creams reveal the dark side of the beauty industry

Capitalising on ideas of racial hierarchies and intolerance, companies continue to peddle products that betray their corporate values

By Tansy Hoskins, *Guardian Professional*

A Bangkok shopper next to an advert for light skin. Photograph: Sakchai Lalit/AP

Skin-whitening cosmetics are a multi-billion dollar industry pushing the idea that beauty equates with white skin and that lightening dark skin is both achievable and preferable.

The cosmetics industry has traditionally relied on convincing people that they are incomplete without a particular product. Yet, unlike makeup or fake tan, skin-whitening creams base beauty on a racial hierarchy, fuelling intolerance and causing serious social harm.

In a country such as India, the dominance of fair skin has both a colonial and a caste legacy and the global narrative is that those at the top of society have fair skin. With issues such as employment and relationships often resting on skin tone, people invest in skin-whitening creams in the hope of a better existence. Capitalising on this inequality, hundreds of products are peddled by corporations, among them armpit whitener, genital whitener and fairness baby oil.

In countries such as India and Thailand it is difficult to find beauty products that do not claim to have lightening or whitening properties, and a recently launched celebrity backed product in Nigeria sold out within 24 hours. Many global corporations are involved in this market, such as Unilever, which sells Fair and Lovely, Pond's White Beauty and the Vaseline and Dove whitening ranges.

Challenging this climate of discrimination is Women of Worth, an Indian NGO called that has founded the Dark is Beautiful campaign. The campaign's director, Kavitha Emmanuel, says the project resulted from work with children and young people. "The issue of skin colour kept coming up. We saw how it makes young people – especially young girls – feel as if they're not good enough.

"Skin colour bias affects people psychologically. It affects how a child performs in school because their confidence level goes down: they feel they are not good enough. And when it comes to marriage, we again find skin colour plays such a vital role. We thought, 'Why are we keeping quiet about this? We should talk about this and see how people respond.'"

In January, Emmanuel delivered a petition of 30,000 signatures to cosmetics company Emami, calling on them to withdraw a particularly discriminatory advert for Fair and Handsome. She recalls the words of Emami's managing director: "There is a need in our society for fairness creams, so we are meeting that need." He refused to withdraw the ad. Undeterred, Dark is Beautiful is lobbying the Advertising Council of India to legislate against adverts that discriminate against dark skin.

Skin colour, along with hair and eye colour, is genetically determined by the amount of melanin found in the top layers of skin……..

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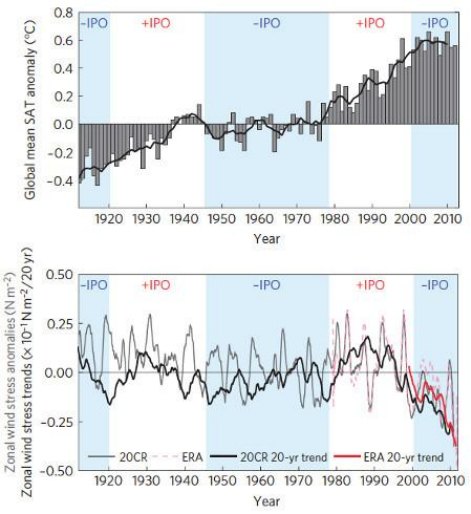
Unprecedented trade wind strength is shifting global warming to the oceans, but for how much longer?

By Dana Nuccitelli, *for theguardian.com*

Strengthening trade winds in the Pacific are causing more global warming to be mixed into the deep ocean layers. Photograph: PA

Research looking at the effects of Pacific Ocean cycles has been gradually piecing together the puzzle explaining why the rise of global surface temperatures has slowed over the past 10 to 15 years. A new study just published in *Nature Climate Change,* led by Matthew England at the University of New South Wales, adds yet another piece to the puzzle by examining the influence of Pacific trade winds.

While the rate of surface temperature warming has slowed in recent years, several studies have shown that the warming of the planet as a whole has not. This suggests that the slowed surface warming is not due as much to external factors like decreased solar activity or more pollutants in the atmosphere blocking sunlight, but more due to internal factors shifting the heat into the oceans. In particular, the rate at which the deep oceans have warmed over the past 10 to 15 years is unprecedented in the past half century.



Top frame: Global surface temperature anomalies. Bottom frame: Pacific wind stress anomalies. From England et al. (2014).

Research led by Masahiro Watanabe of the Japanese Atmosphere and Ocean Research Institute suggests this is mainly due to more efficient transfer of heat to the deep oceans. Consistent with model simulations led by Gerald Meehl, Watanabe finds that we sometimes expect “hiatus decades” to occur, when surface air temperatures don’t warm because more heat is transferred to the deep ocean layers. A paper published last year by Yu Kosaka and Shang-Ping Xie from the Scripps Institution of Oceanography found that accounting for the changes in Pacific Ocean surface temperatures allowed their model to reproduce the slowed global surface warming over the past 10 to 15 years. However, the mechanism causing these Pacific Ocean changes has remained elusive.

The new study published by Matthew England’s team helps explain how and why more heat is being funneled into the deeper ocean layers. The study indicates that a dramatic acceleration in equatorial trade winds, associated with a negative phase of a cycle called the Interdecadal Pacific Oscillation (IPO) has invigorated the circulation of the Pacific Ocean. This has caused more heat from the surface to be mixed down into deeper ocean layers, while bringing cooler waters to the surface. The combination of these two processes cools global surface temperatures.

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Why Latin America is a fertile ground for green tech industries

Rapid urbanisation has made south and central America an attractive testbed for innovation in sustainable living

By Gavin O'Toole, *Guardian Professional*

Latin America is becoming a global arena for green innovation as foreign companies head for the region to partner with a rapidly growing local lean technology sector.

Mexico city: Latin America has become a hub for green tech companies. Photograph: Alamy

Abundant resources, favourable regulations and government, and multilateral initiatives are nurturing international collaboration in the race to commercialise sustainable technology. And as the costs of technologies such as solar PV fall, a favourable investment climate is enabling local market entrants to become competitive and scale up.

"Green tech industries are growing fast in Latin America. The environment has been transformed in the past five years," explains Luis Aguirre-Torres, chief executive of Green Momentum, a consultancy based in Mexico City. "I have seen a significant increase in investment, both in the development of technology and in project development, and large European or North American companies are flocking to Mexico, Brazil, Colombia and other countries to launch projects."

There are no estimates of the size of the sustainable technology market in Latin America but the scale of investment in renewable energy offers a clue: the Climatescope 2013 report says the region captured $16.8bn (£10.2bn), or 6%, of global clean energy investment in 2012.

Renewable energy has been the main focus of innovation, and bodies such as the Inter-American Development Bank (IDB) have an optimistic outlook for the region. According to GTM Research, Latin America is already the global frontier for unsubsidised solar markets.

IDB energy specialist Arnaldo Vieira de Carvalho says: "Latin America already has an energy matrix that is cleanest of all regions: in terms of power generation, we have almost 70% renewables – three times the world average."

Brazil leads the field as a hydro power giant with the world's largest potential wind resources and vast biomass capacity, but renewables in Central America have grown rapidly; Mexico is challenging Brazil in wind, leads the region in solar and has huge geothermal reserves.

The potential scale of Brazil's green economy hints at the overall size of this market, with the Carbon Trust pointing to the country's "$200bn low carbon opportunity". In 2013 the UK's Technology Strategy Board (TSB) led 17 clean tech companies on a successful trip to the country.

Several factors are driving the growth of sustainable technology in Latin America. The region is turning to new green solutions for old development problems typified by the pollution, water shortages, waste disposal and traffic congestion challenges of its cities. Rapid urbanisation has made it a testbed for mass transit systems, and its built environment and young population lend themselves to sustainable housing experiments.

Natural resources are the main source of growth and according to José Miguel Benavente, head of the IDB's IT and innovation division, as technology used in traditional sectors such as mining has barely changed in 50 years. "The obvious problem with natural resources is that they generate negative externalities, and most of this production is in the form of what engineers call 'continuous processes' – it's very difficult to make changes through technological improvements."

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India Moves to Restore Forest Cover

SustainableBusiness.com News

India is about to get greener. Literally. The Green India Mission (GIM) has been given a final nod of approval from the government.

First proposed in 2011, the effort doesn't refer to the greening of business or energy systems, but the restoration of 10 million hectares of forest cover across the country.

India's Cabinet is expected to appropriate $2 billion for the project in the very near future.

The goal is to restore 5 million hectares of degraded forest land and to bring another 5 million hectares of non-forest areas under forest cover. Returning these lands to sustainably managed forests will create and enhance carbon sinks, biodiversity and sustainable forest-based livelihoods for the people who live there.

The need for such a project is underscored by a study conducted at Canada's Concordia University which lists India and Brazil as one of the top seven countries most "responsible" for climate change, largely due to deforestation-related carbon emissions. If GIM's 10-year reforestation targets are met official's estimate India will see annual carbon sequestration of 50-60 million tons by 2020. Forests would then offset 6% of the country's greenhouse gases, up from 4.5% without replanting.

But it's not just about planting as many trees as possible. GIM "proposes a fundamental shift in mindset from our traditional focus of merely increasing the quantity of our forest cover, towards increasing the quality of our forest cover and improving provision of ecosystem services," explains India's Ministry of Environment and Forests.

The Ministry points to similar programs in China, which have been reforesting much of the forest cover destroyed during the Maoist era. China's Three Norths Shelterbelt Development Program - the "Great Green Wall" - has been reforesting since the 1970s in an attempt to prevent expansion of the Gobi Desert. China's Sloping Land Conversion Program plants trees on sloping farm lands to prevent erosion during floods.

After being widely criticized for creating plantations instead of native forests (by planting non-native trees), China revised the program.

The same concerns exist in India. In the past, in the name of reforestation, GIM established tree plantations, allowing the government to gobble up common lands, destroy the rich biodiversity of natural open forests and grasslands, and violate the rights of people already living there.

Proponents of the plan say GIM now has "a clear focus on enhancing biodiversity, restoring ecosystems and habitat diversity" and "a deliberate and major focus on autonomy and decentralization." Forests will be restored at the local level by the people who live there. It's expected to create sustainable forest-based livelihoods for three million households.

Going forward, India's Ministry of Environment and Forests also proposes compensation when forests are converted to other purposes - an equal amount of land must be reforested.

Funding could come from India's recently approved Corporate Responsibility law, which requires all large companies to kick in 2% of annual net profits for socially responsible projects.

The National Mission for a Green India is one of the eight Missions under the National Action Plan on Climate Change. The government says, "GIM recognizes that climate change phenomena will

seriously affect and alter the distribution, type and quality of natural resources of the country and the associated livelihoods of the people. GIM acknowledges the influences that the forestry sector has on environmental amelioration through climate mitigation, food security, water security, biodiversity conservation and livelihood security of forest dependent communities.

<Source>

India Plans to Install 26 Million Solar-powered Water Pumps

By Katherine Tweed

Photo: SunEdison

India's government wants to replace 26 million groundwater pumps for irrigation with more efficient pumps that run on solar power, in an effort to relieve farmers of high costs of diesel fuel. Diesel generators are commonly used when grid power is unavailable, a not uncommon occurrence. And the power used for pumping irrigation water is also one of the largest strains on the Indian power grid.

The initiative is expected to require $US 1.6 billion in investment in the next five years just to switch out the first 200 000 pumps, according to Bloomberg.

Pumping water is critical for Indian agriculture, which otherwise relies on seasonal rain. It's also very contentious—Indian farmers are currently drawing more water than is sustainable, removing about 212 million megaliters from the ground each year to irrigate about 35 million hectares.

One of the risks of switching to solar pumps, however, is that farmers may use even more water than they currently do with expensive diesel generators. To combat that unintended consequence, the farmers who accept the subsidies to purchase the solar water pumps must switch to drip irrigation. The state of Punjab is also offering subsidies for drip irrigation.

The government thinks the upside of solar pumps will outweigh the risks. "The potential is huge," Tarun Kapoor, joint secretary at India's Ministry of New and Renewable Energy, told Bloomberg. "Irrigation pumps may be the single largest application for solar in the country."

Falling prices of solar panels means that the payback for a solar water pump system is about one to four years, Ajay Coel, CEO of Tata Power Solar Systems, told Bloomberg. Some state governments in India are subsidizing most of the cost of the systems because it helps eliminate the billions of dollars in annual farm diesel subsidies that go to farmers.

Agriculture isn't the only sector that the government is trying to wean off of heavily subsidized diesel. Mandates will require 75 percent of rural and 33 percent of urban telecom towers to run on renewables by 2020.

Solar powered "water ATMs" are also bringing clean water to rural India. All of this activity is part of why India is expected to be the fifth largest market for solar PV by 2015. It is not just small, rural projects to supplant diesel, either. India has plans for a 4-gigawatt solar PV plant, which would nearly triple the country's solar capacity and be the largest in the world.

<Source>

3 MW Anaerobic Digestion Biogas Plant Expected at Indian Compost Facility

By Ben Messenger, *Managing Editor, waste-management-world*

German anaerobic digestion technology is likely to be installed at an Indian composting facility for the production of biogas for use in energy generation, according to a recent report by The Times of India.

The report explained that a delegation of 25 people visited the Nashik Municipal Corporation's (NMC) compost plant in Vilholi, including officials from the department of economic affairs (ministry of finance), German Government's nodal agency, Gesellschaft fur Internationale Zusammenarbeit's (GIZ), state government and selected public sector representatives.

The delegates are also reported to have met municipal commissioner Sanjay Khandare and superintending engineer, R. K. Pawar before visiting the plant.

The NMC was said to having decided to manage the compost facility through public private partnership, with GIZ providing funds for the biogas project.

According to The Times of India, Sarah Habersack, consultant for sustainable urban habitat team and the project of national sanitation policy, GIZ, said the waste to energy project would be developed as a pilot plant in close proximity to the composting plant.

"At present, the project is in the tendering process. Common treatment of bio-degradable waste from hotels and septage (black sewage) will be done to have optimum energy production," she is reported to have said.

"Hamburg Water Cycle (Germany) will be the technology adopted for the purpose. First, a feasibility test was conducted and it was found that the best generation of energy would be in the ratio of 1:1.5, including one part of bio-degradable waste and one-and-a-half part of black sewage," The Times of India quoted Habersack as having said.

It is anticipated that the pilot project would produce around 2000 to 2500 cubic metres of biogas per hour and generate some 3 MW of power.

<Source>

Indian researchers develop method to convert plastic waste into liquid fuel

Washington, Jan. 28 (ANI): A team of researchers have developed a relatively low-temperature process to convert certain kinds of plastic waste into liquid fuel as a way to re-use discarded plastic bags and other products.

Chemist Achyut Kumar Pandaof Centurion University of Technology and Management Odisha, India is working with chemical engineer Raghubansh Kumar Singh of the National Institute of Technology, Orissa, India, to develop a commercially viable technology for efficiently rendering LDPE into a liquid fuel.

In their approach, the team heats the plastic waste to between 400 and 500 Celsius over a kaolin catalyst.

This causes the plastic's long chain polymer chains to break apart in a process known as thermo-catalytic degradation. This releases large quantities of much smaller, carbon-rich molecules.

The team used the analytical technique of gas chromatography coupled mass spectrometry to characterize these product molecules and found the components of their liquid fuel to be mainly paraffins and olefins 10 to 16 carbon atoms long. This, they explain, makes the liquid fuel very similar

chemically to conventional petrochemical fuels.

In terms of the catalyst, Kaolin is a clay mineral - containing aluminum and silicon. It acts as a catalyst by providing a large reactive surface on which the polymer molecules can sit and so be exposed to high temperature inside the batch reactor, which breaks them apart.

The team optimized the reaction at 450 Celsius a temperature with the lowest amount of kaolin at which more than 70 per cent of the liquid fuel is produced. In other words, for every kilogram of waste plastic they could produce 700 grams of liquid fuel.

The study has been published in the International Journal of Environment and Waste Management. (ANI)

Achyut Kumar Panda, LDPE, Kaolin

<Source>

Delhi Metro awarded for energy efficiency

Delhi,Business/Economy,

For its energy efficient measures, the Delhi Metro has become the first rail system in the world to be awarded the Gold Standard foundation -- a globally accepted certification standard for carbon mitigation projects, a statement said Sunday.

The Delhi Metro Rail Corporation (DMRC) registered for the certification as the energy efficiency measures undertaken in 51 of its stations in phase II qualified under the criterion verified by the auditors.

"The energy efficiency measures have been undertaken primarily in the heating, venting and air conditioning systems, lighting system and other energy efficient measures of station buildings," said DMRC statement.

"All these steps lead to tremendous amount of energy savings and is more efficient than phase I and thus results in reduction of carbon dioxide emissions by at least 25 percent," it added.

Compared to the United Nations rate for one carbon credit (70 cents), the Gold Standard carbon offset carries a price premium (4-5 Euros).

In 2008, the DMRC was registered by the UN under the clean development mechanism which has enabled it to earn over Rs.9.5 crore as carbon credits through measures like regenerative braking, wherein the kinetic energy released from the application of brakes is used to accelerate the train.

With the Gold Standard registration, the DMRC is hoping to earn around 7,500 credits annually for the next ten years.

"We are also working on other projects to get them registered under Gold Standard," the Delhi Metro said.

<Source>

Potable water quality to be improved in India with innovative treatment system

Regions of India will soon receive cost- and energy-efficient drinking water with an innovative European water treatment technology stemmed from a €2.2 million (US $3.0 million) Europe/India collaborative research project.

Called ECO-India, the three-year project is co-funded by the European Commission's Seventh Framework Programme (FP7) and the Indian Department of Science and Technology (DST). It will run until August 2015 and is focused on developing innovative and sustainable approaches for producing potable water at a community level. The first rural community deployment is set for West Bengal, India.

Coordinated by the Tyndall National Institute in Cork, Ireland, the €1.7 million (US $2.3 million) FP7 consortium represents a world-class interdisciplinary research team from three research institutes -- Tyndall-UCC, Danmarks Tekniske Universitet (DTU), Helmholtz-Zentrum für Umweltforschung GmbH (UFZ) -- and four SMEs (Trustwater, Adelphi, Dryden Aqua, and AGM).

Dr. Aidan Quinn (right), co-ordinator of the ECO-India EU consortium, and Dr. Howard Dryden (left) with the cutting-edge integrated European systems for water disinfection (Trustwater ECO-Trio) and filtration (Dryden Aqua AFM, background) due to be shipped to India for installation at a rural community pilot site in West Bengal

(Photo credit: Hume Brophy)

The FP7 consortium will develop energy-efficient systems for advanced filtration and disinfection of drinking water supplies from surface-water ponds and groundwater tube wells, which suffer from arsenic contamination using Dryden Aqua and Trustwater technology. In addition, UFZ will lead the development of field-deployable arsenic sensors for screening tube-wells, while an online system developed by AGM will enable remote monitoring of water quality.

Tyndall-UCC will focus on the development of novel capacitive modules for the removal of ions from brackish surface water and heavy-metal ions (especially arsenic) from groundwater as well as development of novel sensors for monitoring dissolved oxygen. The overall system will be solar-powered with mains/battery backup. DTU will also lead a feasibility study for assessing energy harvesting via biogas from wastewater.

The EU team partners with the €500,000 (US $685,300) DST-funded ECO-India consortium, co-ordinated by Professor Asis Mazumdar from Jadavpur University. The consortium also includes the Indian Institute of Technology Kharagpur, as well as an SME, Super Technicians. Collaborating with Jadavpur University and Adelphi GmbH (the collaboration managers for the project), the European systems will be installed alongside conventional water filtration systems in order to demonstrate their performance in a harsh rural environment and to assess their potential for sustainable, cost- and energy-efficient treatment of potable water.

<Source>

A green solution for waste management miseries

Source Name: Times of India

Source Url: http://timesofindia.indiatimes.com/city/kochi/A-green-solution-for-waste-management-miseries/articleshow/29629985.cms

KOTTAYAM: For Dr Jogi Abraham, organic waste is precious. The kitchen of his dental laboratory at Vadavathoor where food is cooked for over 60 individuals, thrice a day, runs on the biomethane produced from the biogas plants in his compound.

He has also developed a system to produce Compressed Natural Gas (CNG) from this biogas, which he uses to fuel his SUV. And all this happens at a stone's throw away from the dumping yard at Vadavathoor where the authorities are yet to work out a plan for waste management.

"It all started as a hobby and for a social cause. Staying in the affinity of the yard, the issue of waste management was always in the back of my mind. I spent a lot of time to learn from the internet," said Abraham about the inspiration behind developing the model.

"I also wanted people to see my model and realize that waste can be managed usefully," added Abraham, who is a dental surgeon and had undergone extensive training in dental technology in Germany. His lab here deals with the making of dental crowns and tooth bridges out of ceramics.

Abraham has installed three Deenbandhu biogas units, which are fixed underground digester chambers, constructed with a layer of bricks and an additional layer of cement mortar forming the roof. Waste is fed into the plant through an inlet tank.

The waste ferments by an anaerobic process separating the slurry from the methane gas, which rises and collects at the top of the digester tank, and is released through the gas outlet pipe.

The slurry passes into the outlet tank where it is ejected from the plant and is used as fertilizer for his vegetable garden.

The methane released is collected in the biogas storage bags.

"Each biogas plant has a capacity of 100kg," said Abraham. With the domestic waste not sufficient to make the required quantity, waste from two poultry shops are also fed into the plant.

A portion of the methane collected is pumped into the kitchen to develop some pressure. Bio-CNG is also produced for fuelling vehicles. "By a process of biogas enrichment, carbon dioxide and other impurities are removed from methane to make it natural gas. Then the process of biomethylation is done through a process called water scrubbing," he said.

The resulting gas is dried through filters and is compressed to CNG.

He has imported a special CNG compressor from China for this.

"I have done this to show people and authorities that such units can be installed successfully here," he said.

<Source>

Indian microgrids seek to bring millions out of darkness

By **David Ferris**

This article originally appeared at Yale Environment 360.

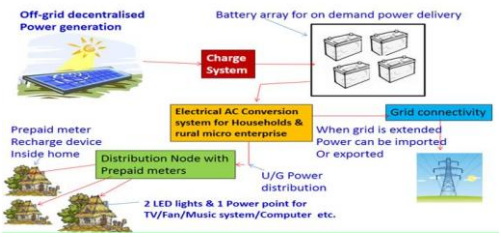
Bharath Kumar was furious that the lights went out an hour early. His candy-making operation in the village of Tamkuha, in northern India, had been plunged into darkness at mid-batch, forcing him to use a weak, battery-powered lantern to manage his boiling pots.

"If I knew that the power would be shut off an hour earlier, I would not have mixed the sugar in the flour," he fumed. "This is not the first time. I will keep a record of when the power is switched off every night and show this when they come for collections."

People everywhere complain about the power company, but Kumar's power company has an unusual challenge. Husk Power provides light bulbs and a small amount of electricity to about 200,000 people in 300 tiny farming villages across the state of Bihar that never have been touched by the electric grid. Each village has a generator powered by burning and gasifying rice husks, a byproduct of farming that otherwise is wasted.

The six-year-old company is one of numerous startups trying to build carbon-free or low-emissions microgrids to light up rural villages across India. The need is enormous. Roughly 300 million Indians living in 80 million households — about a quarter of the country's population of 1.2 billion — do not have access to electricity. According to the World Bank, per capita electricity consumption in India, centered mainly in cities and towns, is 684 kilowatt hours — just 1/20th of the United States' per-capita consumption of 13,246 kilowatt hours.

Nearly all microgrids in India are powered by solar photovoltaic panels, with the exception of 20 to 30 networks that run on hydropower in the states of Karnataka and Uttarakhand and the biomass-powered grids operated by Husk. To date, microgrids provide just a tiny fraction of India's overall power needs. Although no comprehensive statistics exist on the number of microgrids, a conservative count shows that they serve at least 125,000 households in India, divided mostly between large, government-sponsored projects in the North Indian states of Chhattisgarh and West Bengal and private ventures centered on Uttar Pradesh and Bihar. Uttar Pradesh and Bihar are among the most rural and least electrified states in India — a countryside packed with tens of millions of people, united by darkness.



Naturetech Infrastructure solar microgrid model (Credit: Naturetech)

India's Ministry of New and Renewable Energy, through its National Solar Mission, has set the highly ambitious goal of replacing kerosene lamps with 20 million solar lighting systems — powered by microgrids, solar panels on individual homes or solar lanterns — by 2022. The microgrid sector is dominated by smaller enterprises such as four I visited in India: Mera Gao Power, Naturetech Infrastructure,Minda NexGenTech and Husk. Most microgrid entrepreneurs hope their trajectory will follow that of the mobile-phone industry, which starting in the late 1990s transformed life in the countryside by bypassing land lines and enabling villagers to communicate with the outside world. The goal with microgrids is to bypass altogether India's inadequate power system and troubled grid.

"We argue that that villages and remote hamlets that are off the main grid can leapfrog into sustainable power access via solar PV (photovoltaic) mini-grids as a long-term solution rather than as a stop-gap until the time the grid comes," says a report on solar microgrids written by the Observers Research Foundation of Mumbai. "An Energy Revolution akin to the Green Revolution in Agriculture in the '70s needs to be brought about."

Companies leading the charge

Microgrid companies such as Mera Gao Power offer a modest and rapidly installed infrastructure, serving as few as 20 customers from a small set of solar panels that often produce only a few kilowatts. One day in a village in Uttar Pradesh, I saw how easy it is to install a microgrid. A team of four workers from Mera Gao strung lights to about 40 households. They attached the cables along house eaves and through the trees. (In other towns, installers use the abandoned poles of failed government power projects.) With the addition of two solar panels and a bank of lead-acid batteries, the system was good to go.

Mera Gao's customers pay about 100 rupees — $1.60 — and receive enough electricity to power two LED lights and a mobile phone charger for seven hours a night. Husk can supply about 400 households from one of its rice husk gasifiers. Two stories tall and painted green, the gasifiers are usually situated near the center of town, next to a giant pile of rice husks and surrounded by a rickety fence. Also for 100 rupees, a Husk user gets two CFL light bulbs and a cellphone charger, along with a power cable that supplies electricity for five hours a night.

The potential market for microgrids is huge, and the prospect of so many customers has made microgrids primarily a private-sector and profit-motivated enterprise. The leaders include small startups hoping to do social good, a multinational solar power company and veterans of the cellphone industry. A report by the World Resources Institute and the Center for Development Finance estimates that the market for microgrids in India and other clean energy consumer products could reach $2.1 billion annually.

Children in India read with the help of Mera Gao Power lighting (Credit: MGP/Anna da Costa)

These startups' prospects might be extinguished in a moment if regular power lines marched into the villages. But the electrical grid in India already is overtaxed; an estimated 25 percent of India's power generation capacity is underused because of fuel shortages and other problems. The main supplier of power in India — the coal industry — also is hobbled by deep structural problems and the growing reluctance of international funders to build new coal plants.

By illuminating an entire village at once, a microgrid can spread light more quickly than handouts of solar-powered lanterns. It also can scale up far faster than traditional power lines, often promised in India but seldom delivered. By deriving their power from biomass or solar panels, microgrids raise the possibility that large regions could stay off the coal-fired power grid forever, shaving a significant chunk off the world's future carbon budget. Whoever finds the business model for providing cheap, reliable, local power will help pull 300 million Indians from the 19th century into the 21st century, with vastly expanded opportunities for education and commerce.

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Second International Conference on Sustainable Human Development

April 2nd and 3rd , 2014

London, UK

The second annual conference on Sustainable Human Development is being organized in the campus of Brunel University on 2nd and 3rd April, 2014. The conference aims to provide the leading forum for debate on issues of importance to society at large. Through a structured programme of research presentations, seminars, posters, demonstrations and exhibition, it is intended that participants will gain new insights, knowledge and competencies of relevance to the betterment of life in a sustainable way. Scholars and policy makers will have the opportunity to engage in discussion on the pressing problems facing long-term viability and sustainability of societies, including considerations for diversity and well-being of local communities in reaction to the challenges posed by growing globalization and development. Major themes of the conference are Diversity, Knowledge Management and Economy, Sustainability, Well-being and Society and Technology. These include topics related to environment, energy efficiency, energy conservation, climate change, water management, waste management, biodiversity, education and awareness about sustainability, CSR and so several relevant and important topics.

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RSA Global Conference 2014

From Vulnerable Places to Resilient Territories: The Path to Sustainable Development

27th – 30th April, 2014

Fortaleza, Brazil

The Regional Studies Association Global Conference 2014 (RSA 2014) is being organized in Fortaleza, Brazil between 27th and 30th April, 2014. The RSA 2014 Global Conference in Brazil will focus on thinking about paths, policies and ideas to strengthen vulnerable places and to develop cohesive and resilient territories. This conference offers to all those who share an interest in regional and urban issues an opportunity to explore and discuss these key issues. The discussions will be stimulated and enriched by the RSA's well established tradition of embracing and accepting diverse perspective, disciplinary backgrounds and ideas. One of the major themes is Sustainability – Climate Change, Environment, Energy and Food Security. The conference also has a special session on Global Urban Environmental Change, Health and Well-being.

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4th Global Conference: Living Responsibly

6th – 8th May, 2014

Lisbon (Portugal)

The Fourth Global Conference: Living Responsibly is being organized in Hotel Real Palácio, Lisbon, Portugal between 6th and 8th May, 2014. The focus theme of the conference is about the ethical issues in everyday life, it will facilitate dialogue about what it means to behave ethically; what motivates ethical behaviour, and how we can live in ways that are respectful of others and respectful of the planet. The topics of interest include food, and climate change & global warming. Ethical decisions are faced every day, whether people are aware of it or not. The decisions have ethical significance. People have to decide what they will eat and where they should shop for food, clothes and the other essentials of modern life. One has to decide how far he is willing to share with others who have less. The conference is expected to induce make people think more positively and contribute towards sustainability.

<ReadMore>

The Times of India, Delhi, dated January 27, 2014

Jan days getting colder, tied to rise in pollution

Fog Hours Have More Than Doubled

Amit Bhattacharya & Jayashree Nandi | TNN

New Delhi: Days are becoming colder in the month of January in the capital in recent decades and pollution could be playing a role in forcing the trend, warn experts.

In terms of day temperatures, January this year is in line to be the coldest in a decade and third coldest since 1947. It will also be the fifth consecutive year when Delhi's average maximum

▶ Link to fog cover, P 4

temperature in January has remained below the normal of 20.8 degrees Celsius.

That's not all. The average maximum temperature for January has been below 19 degrees C only four times since Independence — and all these instances (including this year) have come after 1997. In fact, the period from 1998 to 2014 has seen the six coldest months of January in the capital since 1947.

Experts say there appears to be a link between higher frequency of 'cold day' conditions and increasing levels of air pollutants. Pollutants hang lower, and accumulate more, in winter months. This leads to haze, smog and fog. Particles in the upper layer of atmosphere absorb sunlight, leading to a 'dimming effect'. All this contributes to less sunlight reaching the surface, and, consequently, low day temperatures.

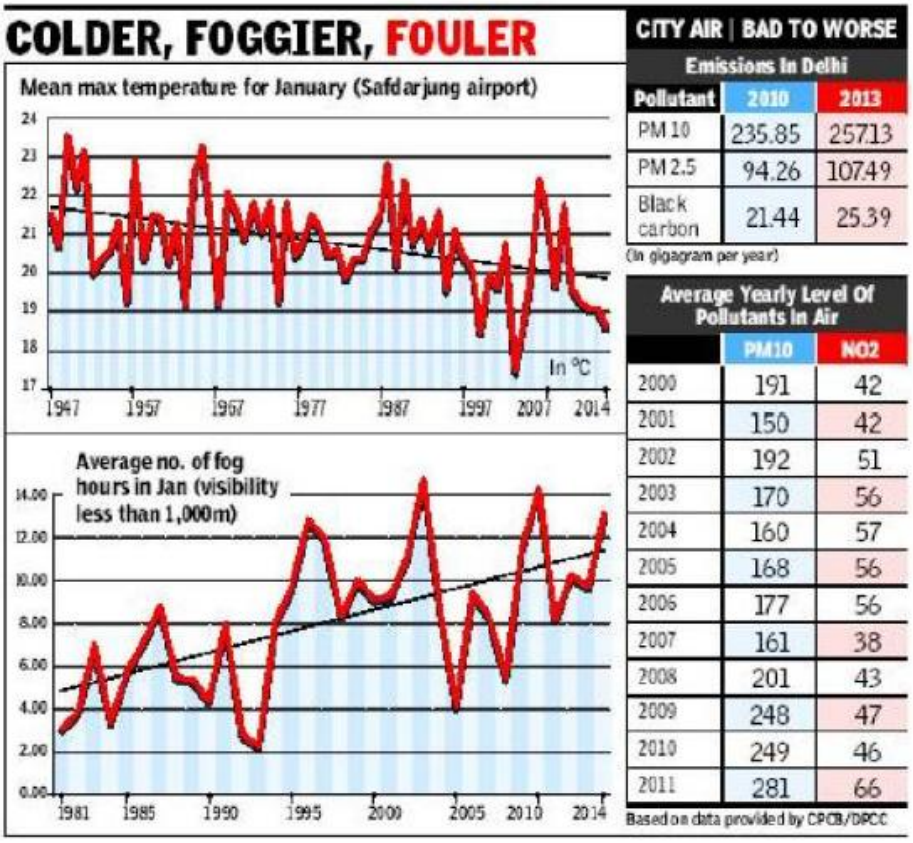
"There is a consensus emerging on the link between rising pollution levels and colder days," said Gufran Beig, chief project scientist at System of Air Quality Weather Forecasting and Research. "In cold temperatures, the (atmospheric) boundary layer is low which leads to accumulation of pollutants. From our study, we know pollution from human sources such as transport has increased which also plays a role in bringing down the boundary layer."

R K Jenamani, director of IGI Airport Met office, wrote a paper in Current Science in 2007 showing a strong link between low maximum temperatures in Delhi's winter, foggy days and high pollution levels.

COLD STATS

- Experts say there could be a link between **rising air pollution, more fog & colder Jan days in Delhi**
- Average max temps in Jan have **dipped by 2 degrees since 1947.** Sharp drop since late 1980s. 6 coldest Jan months have all come in the last 17 years
- Number of avg **fog hours** in city has **more than doubled since 1981, increasing to over 11 hrs per day**
- Delhi's air now **worse than Beijing's,** with key pollutants steadily rising
- **Pollution intensifies fog,** smog & haze, which in turn **causes day temps to drop**

Pollution linked to fog cover in capital



CITY AIR | BAD TO WORSE

Emissions in Delhi

Pollutant	2010	2013
PM 10	235.85	257.13
PM 2.5	94.26	107.49
Black carbon	21.44	25.39

(In gigagram per year)

Average Yearly Level Of Pollutants In Air

	PM10	NO2
2000	191	42
2001	150	42
2002	192	51
2003	170	56
2004	160	57
2005	168	56
2006	177	56
2007	161	38
2008	201	43
2009	248	47
2010	249	46
2011	281	66

Based on data provided by CPCB/DPCC

Amit Bhattacharya & Jayashree Nandi TNN

"Under similar meteorological conditions, we often find Delhi has more fog than cities such as Amritsar, Varanasi and Lucknow. This suggests that increased levels of pollution in the capital could be playing a role," Jenamani said.

Statistics too point to this link. Monthly averages of Delhi's maximum temperatures in January show a drop of almost 2 degrees C since 1947, with the fall being sharper since the late 1980s. At the same time, the average number fog hours in January in the capital (visibility below 1,000m) has more than doubled since 1981, increasing from just below 5 hours per day to more than 11 hours in 2014.

Then there's air pollution, which has been steadily rising in Delhi. Data from January 14 to 16 this year shows PM10 levels at numerous locations were more than 600 micrograms per cubic metre — that's more than six times the safe limits. PM2.5 levels were similarly high, making Delhi's air worse than the much-maligned Beijing.

It continues to get worse. A recently concluded study by post doctoral fellows at Indian Institute of Tropical Meteorology (IITM), Pune, found a steady increase in pollution and black carbon emissions in Delhi from 2010 to 2013.

According to the study, PM2.5 (fine, respirable particles) emissions were 94.26 gigagram per year (Gg/year) in 2010 increased to 107.5 Gg/year. This increasing trend was particularly seen over Rajiv Chowk, Sansad Bhawan, India Gate, IGI airport, Okhla industrial area, Pragati Maidan, IP estate and Janakpuri.

The study found that the contribution of PM2.5 emissions from the transport sector was the highest — and growing — followed by burning of biomass. In the past three years, over 32% of the PM2.5 emissions were from transport. Say Neha Parkhi and Saroj Sahu, the fellows who analysed the data, "Open biomass burning has increased PM2.5 pollution significantly in winter. Construction work and infrastructure projects also have role in increasing PM 10 emissions which have shown an increase of about 5% in the past three years.

Experts say while pollutants could be increasing the chances of fog, the reverse could also be true. Said Jenamani, "Once a fog layer sets in, it contributes to making the air still. This, is turn, leads to more accumulation of pollutants in the air."

The Times of India, Delhi
dated January 30, 2014

India's air quality among five worst

TIMES NEWS NETWORK

New Delhi: India's air quality ranks among the lowest five countries in the world, according to a Yale University study that assessed 178 nations. The only countries below India are Pakistan, China, Nepal and Bangladesh.

However, disputing reports claiming that the report — Environmental Performance Index 2014 — ranked Delhi as the most polluted city, a Yale spokesperson in Delhi said EPI doesn't rank cities but only focuses on country-specific performances. The report also assessed countries on their status of biodiversity, water and sanitation.

FULL COVERAGE: P 6

CLEARING THE AIR

- India **ranks 174 among 178** in an **air pollution study** conducted by Yale
- Countries **ranked below India** on the list are **Pak, China, Nepal** and **Bangladesh**
- On a report that Delhi is the **most polluted city**, a Yale spokesperson said environment performance index **doesn't rank cities**

▶ **Data not in Yale study, P6**

Delhi air quality data not included in Yale study

▶ **Continued from P1**

Overall, India's rank in the Environmental Performance Index was 155th, far below other BRICS countries, China (118), Brazil (77), Russia (73), and South Africa (72).

Before Yale's clarification, there was a lot of anxiety among Delhi Pollution Control Committee scientists after a media report suggested that Delhi was ranked the world's most polluted city in the survey. Scientists who went through the report asked why Yale University authors had not consulted the Central Pollution Control Board or the Delhi Pollution Control Committee for data.

"We have spent the entire day going through the EPI but haven't found air quality data for Delhi. The report does mention that it has sourced satellite-derived PM2.5 data from Aaron van Donkelaar of Dalhousie University. But we don't understand on what basis it has concluded that Delhi has the most polluted air? This has to be explained" said M P George, head of the Air lab at DPCC.

In the report, India ranks 127 in terms of human health from environmental damage and in air quality it ranks 174, barely above countries like Pakistan, China, Nepal and Bangladesh.

"India's air quality is among the worst in the world, tying China in terms of the proportion of the population exposed to average air pollution levels exceeding World Health Organization thresholds" said a statement by Yale University.

While there has been a lot of debate on whether Delhi's air quality is poorer than that of Beijing's, in the country-wise ranking India fares better than China. The worst air quality according to the report is of Bangladesh.

India ranks 127 in terms of human health from environmental damage and in air quality it ranks 174, barely above Pakistan, China, Nepal and Bangladesh

India has fared relatively better on just three counts: forests, fisheries and water resources. "Although India is an 'emerging market' alongside China, Brazil, Russia, and South Africa, its environment severely lags behind these others," said Angel Hsu of the Yale Center for Environmental Law and Policy and lead author of the report.

"Very low GDP per capita coupled with the second highest population in the world means India's environmental challenge is more formidable than that faced by other emerging economies," she added.

Switzerland has topped the rankings, while Luxembourg, Australia, Singapore and Czech Republic made it to top five in the index. The bottom five performers are Somalia, Mali, Haiti, Lesotho and Afghanistan.

While focus has always been on China and India because they are bigger economies, the report raises concerns about air quality in Bangladesh and Nepal too. This category also includes a household air quality indicator assessing the percentage of solid fuel used primarily for cooking and heating.

However, Delhi Pollution Control Committee scientists have said EPI report had changed the goalpost on air pollution, resulting in India falling down the ranks. They said, till few years ago, EPI used to monitor sulphur dioxide (SO_2) levels but now they had started monitoring PM2.5.

The Times of India, Delhi dated January 30, 2014

DPCC counters high pollution claim

Jayashree Nandi | TNN

New Delhi: Delhi Pollution Control Committee (DPCC) has countered claims that PM 2.5 (fine, respirable particles) pollution in Delhi is higher than in Beijing. Data shared by DPCC for January 2012, 2013 and 2014, suggests the average PM 2.5 levels this year didn't exceed 300 micrograms per cubic metre, unlike some media reports claiming it exceeded 500.

However, average PM 2.5 levels in Delhi were at least 3 to 5 times the standard. Such high levels, according to health advisories issued in Beijing, are "very unhealthy." Strangely, despite such levels, Delhi government neither issues daily health advisories nor has it developed a health quality index. Delhi also doesn't use a health advisory developed by System of Air Quality Weather Forecasting and Research (SAFAR).

The US Embassy in China has hourly twitter updates on PM 2.5 levels and its corresponding health warnings. Another private organization, in collaboration with the US embassy in China and the ministry of environmental protection in China, also publishes real-time data.

Delhi government has been dragging its feet on a health advisory for over a year now. "We are not sure when it will start," said Sandeep Mishra, member secretary, DPCC. Dr T K Joshi, director (projects) at Centre for Occupational and Environmental Health, who is one of the authors of Delhi's health advisory says, "The elderly, those suffering from cardio-vascular diseases, diabetes, hypertension and respiratory illnesses, children and pregnant women are most likely to suffer due to such high levels".

Delhi is yet to release its Second Generation Action Plan which will suggest actions to counter the post-CNG air pollution crisis.

Centre for Science and Environment has done a rapid assessment of air pollution levels in Beijing and Delhi. According to them, PM 10 levels (coarse particles) in Delhi are nearly double that in Beijing. In case of PM 2.5 levels, continuous daily average in India from November 2013 to January 2014 shows average levels have been about 240 microgram per cubic metre, which is about four times higher than the Indian standard. During this period, the peak level was as high as 575 microgram per cubic metre in Delhi, but did not cross 400 microgram per cubic metre in Beijing.

CSE's analysis quoted a study by JNU which earlier reported a decline in the level of toxins like polycyclic aromatic hydrocarbons (PAH) following the introduction of CNG, but now states levels have gone up again, due to more vehicles. They claim 39,780 cancer cases might occur due to lifetime inhalation and exposure to PAH concentrations.

DRAGON ACTS FAST, ELEPHANT LUMBERS ON

TOI takes a look at what Beijing and New Delhi have done to cut vehicular pollution

BEIJING	DELHI
To control vehicular pollution, the Chinese government has fixed the number of cars that can be sold in a year at **2,40,000**	All buses, three-wheelers and some taxis **run on CNG**
This year onwards, limit will be lowered to **1,50,000**	Little difference between petrol and diesel prices. **Diesel cars less than 1% as opposed to over half in Delhi**
Public transport scaled up	Local govt liable to pay fine if air pollution levels hit critical limit
Air quality index and health alert system adopted	Stringent action to seal vapour leakage from petrol refuelling stations
Advanced testing facilities for in-use vehicles	Action against polluting industries
Plan to augment public transport not adequate	Plan to introduce **Euro V** norms
In-coming freight traffic partially restricted	In-use pollution tests for vehicles
Introduced **Euro IV** norms	Polluting units relocated, control on power plants, generator sets to meet standards
Vehicles **older than 15 years taken off roads**	

TRENDS IN DAILY PM 2.5 LEVELS:

BEIJING | Daily average PM 2.5 levels for 2013 have largely remained **below 250 microgram per cubic metre**

DELHI | Daily average PM 2.5 levels for November 2013 to January 2014 has been **about 240 microgram per cubic metre**

The Times of India, Delhi dated January 31, 2014

Air quality data for India hard to come by: Yale univ

Jayashree Nandi | TNN

New Delhi: Yale University issued a statement on Thursday clarifying that they don't compare air quality in major cities as part of the annual Environment Performance Index (EPI). The index ranks countries on the basis of environmental parameters. However, the university also suggested that there was no reliable data from India which could help them analyze city-specific trends and that is why they had to rely on satellite data.

"We found the air quality data available for India to be limited, inconsistent and difficult to access. Data for half of the monitoring stations in Delhi was unavailable when we checked CPCB on Wednesday. While we could find evidence of some data for PM2.5, it required specialized knowledge of what to look for and multiple layers of searches. Moreover, we could find little to no information with respect to how the government regularly (if they do at all) communicates air pollution information to the public, such as via an Air Quality Index, which is used by the United States and major cities in China with a mandate for national implementation by 2016," Angel Hsu, lead author of EPI, told TOI.

China started releasing hourly and 24-hour data for PM2.5 in 113 major cities at the end of 2013, with an eventual goal of increasing the number of monitoring sites to 1,500 in all prefecture-level cities by 2015. "There is no substitute for reliable, timely, local-level air quality measurements. It is precisely the absence of global network of such data that forces us to rely on satellite data," added Hsu.

(For full story, log on to www.timesofindia.com)

The Times of India, Delhi dated January 31, 2014

TOI

UNITED FOR HARMONY: Congress VP Rahul Gandhi, MP Naveen Jindal and actor John Abraham pledged to follow Mahatma Gandhi's principles at 'Sadbhavna Sandhya' to mark Bapu's 66th death anniversary

Benzene in evening air health hazard for kids

Jayashree Nandi | TNN

New Delhi: Doctors who have been monitoring air quality data for the last month suggest that the best time to take a stroll for those vulnerable to pollution-related diseases is around 2pm.

This is because PM 10 (coarse) and PM 2.5 (fine, respirable particles) levels stabilize briefly around that time. However, they found that different pollutants dominate at different monitoring stations, for instance benzene levels were much higher than the standard near Mandir Marg while carbon monoxide levels were higher near Anand Vihar.

According to this analysis by Centre for Occupational and Environmental Health (COEH), it may not be a good idea for children and senior citizens to step out late in the evening or very early in the morning, as pollution levels increase due to freight movement during this time. They also suggest that children shouldn't step out after 8pm in areas where benzene levels are found to be high. "This is because benzene levels are higher when it's cool. We monitored Delhi Pollution Control Committee's data and found that benzene peaks after sunset. It is linked to certain kinds of blood cancer and can be extremely dangerous for children, the elderly and pregnant women," said Dr T K Joshi, director (projects) at COEH. "High carbon monoxide levels can affect those with cardiac eschemic disease as the heart is deprived of adequate oxygen. Those with cardiovascular disease can be vulnerable to strokes," said Joshi.

COEH's brief analysis may reflect only a part of the health crisis Delhiites may be facing. DPCC, which maintains annual data, doesn't agree with COEH's analysis that particulate pollution stabilizes briefly in the afternoon. According their annual data for 2013, benzene levels are marginally higher in Punjabi Bagh and Anand Vihar, where the annual average has been about 5.68 and 6 microgram per cubic metre. The annual standard is 5 microgram per cubic metre. However, at IGI airport, annual average benzene levels are as high as 50 microgram per cubic metre. "This is because our monitoring station runs parallel to the runway and fuel emissions cause high benzene levels," says M George of DPCC's air lab.

COEH suggest that children shouldn't step out after 8pm in areas where benzene levels are found to be high

"We have 24-hour data for PM 10 and PM 2.5 for several months. Peak levels last for a longer duration and are very high in the early morning and late evening. The conventional notion of levels peaking during heavy traffic is not the case in anymore. Benzene, even at trace levels can be extremely dangerous," says Anumita Roy Chowdhury, head of air pollution and clean transportation programme, at Centre for Science and Environment.

Beijing doesn't experience such extreme and long peaks, according to CSE data. However, in Delhi, we have no such mechanism. Anumita also said annual averages as presented by DPCC may not reflect real exposure to pollutants as the data gets evened out.

jayashree.nandi@timesgroup.com

The Deccan Chronicle, Hyderabad dated 01, February, 2014

■ Elevated radioactivity reported

High alert at UK nuclear facility

London, Jan. 31: Elevated levels of radioactivity have been detected at the Sellafield nuclear reprocessing plant in Britain and staffing there has been reduced, its operators said on Friday.

The move to reduce staff at the plant in northern England was a "conservative" decision and only essential workers were being asked to report for their shifts, but the plant was otherwise operating "normally".

The levels of radioactivity were not high enough to necessitate any action outside the site in Cumbria, the operators Sellafield Ltd said.

"Levels of radioactivity detected are above naturally occurring radiation but well below that which would call for any actions to be taken by the workforce on or off the site," the operator said.

The move to reduce staff at the plant in northern England was a "conservative" decision. The levels of radioactivity were not high enough to necessitate any action outside the site in Cumbria, operators said.

It said elevated levels of radioactivity had been detected at one of the on-site radiation monitors.

A spokeswoman for Britain's Department of Energy and Climate Change said, "There is no risk to the public or workforce and the site is still open." — *AFP*

Deccan Chronicle, Hyderabad
dated February 02, 2014

No curbs on smoke emitting buses, autos

SUDHEER GOUTHAM | DC
HYDERABAD, FEB. 1

Air pollution in the city has reached alarming levels at 95 microgram of particulate matter per m3 of air, a large chunk of it (45 per cent) contributed by vehicular pollution.

Yet, the authorities concerned are doing absolutely nothing to clean up the air or even enforce rules already in place to check vehicular emissions.

Thousands of autorickshaws emitting black smoke (which is primarily carbon monoxide that lowers the oxygen-carrying capacity of haemoglobin,) ply on city roads despite a ban on their entry into Greater Hyderabad limits since 2003.

According to registered autorickshaw unions, 70,000 autorickshaws ply in the twin cities and 25 per cent of them still run on diesel, a major air pollutant. No attempt is made to check their entry as required by law.

City traffic police and Road Transport Authority, are never short of excuses for failing to enforce restrictions.

S.A.V. Prasad Rao, joint transport commissioner (enforcement), said, "Traffic police is the enforcing agency for pollution control. They should check emissions by motor vehicles by checking the PUC (pollution under control) certificate issued by checking centres."

But Amit Garg, additional commissioner of police (traffic), says enforcing pollution control of motor vehicles is not his "primary duty". The primary duty is to take note of traffic violations "and whenever we intercept a vehicle then we check on necessary documents."

Another senior traffic official said, "We are overburdened with enforcement of other traffic regulations. Taking up special drives to check pollution is almost impossible."

The PUC certificates issued by pollution checking centres are often unreliable.

Hyderabad joint transport commissioner Raghunath, said 150 pollution monitoring mobile agencies have been licenced to operate in the city and the licence is monitored every six months. What happens within those six months is that fake PUC certificates are given, for a consideration of course."

In addition to polluting diesel-run autorickshaw, there are autorickshaws that use adulterated fuel.

The exhaust at the traffic signal tells it all. White smoke from the vehicles reeks of kerosene and many motorists have noticed this.

Only five per cent of the 70,000 autorickshaws in the twin cities run on petrol; the remaining run on diesel, CNG and LPG.

Though the adulteration of petrol with kerosene was banned some years ago, it continues unabated. Motorists say they experience burning sensation in the eyes and the lungs when they inhale emissions from autorickshaws.

Asked why autorickshaws using adulterated fuel are not penalised, Mr Raghunath, said mysteriously, "Autorickshaws using adulterated petrol cannot get through the emission tests." But at the same time he did not rule out the existence of autorickshaws running on adulterated fuel.

A member of a city autorickshaw union claimed that using adulterated petrol and running old autorickshaws that observe no emission standards are due to the poverty of the auto operators.

The Times of India, Delhi
dated February 03, 2014

SUCCESS STORY: Red-crested Pochards can be seen in Yamuna Biodiversity Park now

Revive dying wetlands to purify water: Experts

TIMES NEWS NETWORK

New Delhi: Once a desolate spot, Yamuna Biodiversity Park has now become a favourite haunt of bird-watchers. The park has been welcoming hundreds of migratory birds from Siberia, Europe and the Himalayas every year, but this year, hundreds of Red-crested Pochards have been sighted in the park. Scientists credit the successful restoration of the ecosystem for it. On World Wetland Day on Sunday, environmentalists sought that the government invest in converting wasteland near the river into wetland, and revive dying wetlands in the city.

In the park, scientists have restored close to 20 forest communities, which exist along the Yamuna in other parts of the country. "Our aim was to restore the ecological system. We have restored wetlands near the Yamuna in Wazirabad. This is the only park which gets Red-crested Pochard—a Siberian bird—during winter. Recently, we spotted more than 200 of these birds in the park," said Dr Faiyaz A Khudsar, scientist-in-charge at the park.

Experts say wetlands help improve the quality of water in rivers. Wetlands act like a nursery for rivers. "The objective of creating or restoring wetland is to keep a substantial amount of flood water. These wetlands, which have different types of forests, insects, fish etc, can purify sewer water before it mixes with the river," said Khudsar.

This year's theme for World Wetland Day is 'wetland and agriculture'. The soil here is very productive and should be used for agricultural purpose, said an expert.

There are several wetlands in Bhalaswa and Usmanpur which are in a state of neglect. "If we want to clean the river, then it is important to restore wetlands," said an environmentalist.

NGOs educate students on wetlands

Shafaque Alam | TNN

Noida: On the eve of World Wetlands Day, some NGOs, in association with Okhla Bird Sanctuary and forest department, organized a cultural programme on Sunday on preservation of wetlands and informed about the Ramsar Convention to 300 participating students.

The programme was organized by the Eco Roots Foundation and the Pragati Path Foundation in Okhla Bird Sanctuary, where students took part in painting and quiz competitions.

Hemant Kumar, Conservator of Forest, Meerut, who was the chief guest said that conservation of wetlands was very important to maintain ecological balance. "We need to provide protective and conducive environment and food to birds. We also need to make people aware," he said.

Ecologist T K Roy said that to maintain the ecosystem, we need to maintain a balance in the environment. "We told kids that even if a pond was polluted, some water dependent creatures do survive there," he said. He added that in the last couple of months, there had been a fluctuation in water levels in Okhla barrage due to which some birds did not turn up to sanctuary this year.

Deccan Chronicle, Hyderabad dated February 03, 2014

HAZARD IN AIR

Air pollution hits the heart

50% pollution due to dust, vehicular emissions contribute to 40%

SUDHEER GOUTHAM | DC
HYDERABAD, FEB. 2

Air pollution in the city has reached such alarming levels that those with heart or respiratory diseases should stay indoors as much as possible for the sake of their health.

The amount of particulate matter (PM) in the air in the twin cities has crossed 95 micrograms per cubic metre, against the permissible 60 micrograms/m3, according to the latest report of the Andhra Pradesh Pollution Control Board (APPCB).

The PM level crossed 95 micro grams/m3 at the end of 2013, up from 70 micrograms/m3 in 2010. Environmental scientists of the pollution control board attribute the harmful levels of air pollution to the ever-increasing vehicular emissions and unsettled dust on the roads. Vehicular emissions contributed 40 per cent to the total air pollution, but the increasing dust on the roads has become the biggest concern, adding more than 50 per cent to the total air pollution.

Eighty different pollutants including mercury, carbon dioxide, sulphur dioxide, iron, lead, methane, ethane, naphthalene and some elemental organic carbons were considered for the study.

"The study was conducted over the last three years through 21 pollution monitoring stations in the twin cities. We did two different types of studies. The first one was to find the source of pollution. It is in this study that we found that over 50 per cent of air pollution in Hyderabad is caused by dust," said P. Ramesh Chandra, environmental scientist, APPCB.

"Areas such as Abids, Punjagutta, Sanathnagar, Paradise, Charminar, Nacharam, Langar Houz, have higher air pollution and this is due to increased vehicular traffic over the years, and increased constructional activity, including the metro rail and incomplete road works for underground utilities that has pushed up the levels of vehicular pollution and dust in the air in the last three years," he added.

According to state road transport authority reports, the total number of motor vehicles in the twin cities has crossed 30 lakh.

Additionally, 10 lakh vehicles pass through the city from neighbouring districts.

The reduced green belt in the core city area to create space for Metro Rail construction has added to the increased air pollution with freely moving dust reducing oxygen flow.

There are solutions to the alarming air pollution, but they seem too much in the future.

AIR POLLUTION LEVELS IN HYDERABAD

Figures of PM in city air in last four years

Year	PM in air*
2010	70
2011	79
2012	87
2013 (till November)	95

*micro-grams/M3

POLLUTION LEVELS AND HEALTH CONCERNS

Air quality Index Particulate Matter	Levels of health concern	Cautionary statements
0-50	Good	None
51-90	Moderate	None
90-150	Unhealthy for sensitive group	People with respiratory and heart disease, the elderly, the children should limit prolonged exertions
151-200	Unhealthy	Everyone should avoid prolonged exertion in addition to sensitive group
201-300	Very unhealthy	Everyone should avoid prolonged exertion
301-500	Hazardous	Everyone should avoid prolonged exertion

Trouble in air could lead to health hazards, feel experts

DC CORRESPONDENT
HYDERABAD, FEB. 2

With air pollution reaching alarming levels in the city, medical experts say it could lead to serious health hazards.

The permissible particulate matter (PM) in air is less than 60 micrograms/m3. When the level crosses 90 micrograms, it starts having an impact on the health of people. Experts say that even a slight increase in air pollution can lead to emergencies, hospitalisation or even death.

World Health Organisation claimed that every death in Delhi is someway related to air pollution where PM levels have crossed 100 micrograms/m3.

According to WHO reports, over 12 per cent of Indians suffer from asthma due to PM in the air. WHO has also predicted that by 2,035-40 over 50-60 per cent of Indians will suffer from asthma if the PM levels continue the upward trend.

"Sulphur and nitrogen oxides in the PM could lead to diseases at molecular and cellular levels, mostly upper respiratory tract infections (URTI), and due to carcinogenic material in PM, it could also cause lung cancer," said Dr C. Vijay Kumar, pulmonologist.

He said that dust from petrol and diesel products was less than 2.5 microns and could cause lung inflammation, asthma and bronchitis. Besides, among senior citizens with lesser immunity, these can pass through respiratory tracts and cause cardiac arrest.

Generally, increased PM causes irritation to the airway, watering of the eye and bronchitis. Inflammation can ultimately lead to damage of lungs, which is described as emphysema, also known as Chronic Obstructive Pulmonary Disease (COPD).

According to experts, even a slight increase in air pollution can lead to emergencies, hospitalisation or even death.

The Times of India, Delhi dated February 03, 2014

Don't let rainwater go down the drain

Harvesting It Is The Only Way To Keep Capital's Depleting Groundwater Levels In Check

Neha Lalchandani | TNN

New Delhi: With groundwater levels dipping across Delhi, and really fast in some areas, rainwater harvesting is the one tool the government has to ensure that the city has recourse to some internal source of water. So far, Delhi has been almost entirely dependent on other states for its water supply and there is no likelihood of an increase in this supply in the next few years. The population is rising rapidly and to avoid a water crisis the city must immediately dust its rainwater harvesting projects and ensure proper compliance with existing laws.

Rainwater harvesting is compulsory in Delhi for all new buildings that are more than 100sqm in size or are built on a plot larger than 200sqm, or have a minimum discharge of 10,000 litres per day. The government was supposed to have implemented it on flyovers and roundabouts as well.

However, the city has managed to achieve very little in the past few years. Several group housing societies have implemented rainwater harvesting, as have some individuals, but to make the project a success it has to be implemented across the board and maintained properly after that. Cities like Chennai enforced rainwater harvesting successfully because the government ensured that those not following the law were taken to task. If Chennai can do it, so can Delhi.

There are several reasons for its failure in Delhi, including inadequate financial assistance for projects, long winded procedures and poor maintenance of structures once they are built. Among various financial mechanisms for funding rainwater harvesting structures are the chief minister's My Delhi-I Care fund, Delhi Jal Board's rainwater harvesting scheme that offers assistance of up to Rs 1 lakh for resident welfare associations, MLA and councillor funds, Delhi Parks and Gardens Society Fund and assistance from corporate houses.

Monitoring of rainwater harvesting has been excessively poor with no agency maintaining a record of the buildings within their purview that have installed rainwater harvesting structures. Based on a high court order, PWD, DDA, Delhi Cantt, NDMC etc have only now started compiling this record. Secondly, very few government buildings have implemented the order and many flyovers and roundabouts do not have the mandatory rainwater harvesting features. Where new buildings are supposed to show rainwater harvesting in building plans before they can be sanctioned, there is no monitoring mechanism to ensure that these structures are finally built.

In 2013, DJB appointed two agencies to act as one-stop shops for getting rainwater harvesting carried out in group housing societies or localities. The agencies have been entrusted with the entire work of setting up the systems—right from designing to obtaining all permissions and monitoring on behalf of the RWA. Only execution of the work will be the RWA's responsibility.

Jyoti Sharma, director of the NGO FORCE that works on water related issues, says the government should start by first ensuring that all government buildings, irrespective of how large they are or when they were constructed, should get rainwater harvesting systems. It should similarly be implemented on flyovers. "Several societies have their rainwater harvesting plans ready but the government needs to assist them financially. Under the My Delhi-I Care scheme, each DC has Rs 7 crore at his or her disposal for infrastructural development. This fund can be used for such projects," she said.

Experts say Delhi has more than 600 water bodies and these should be cleaned and connected to the nearest storm water drains to act as natural reservoirs. Check dams could be built along the 22 nullahs of Delhi and old dysfunctional tubewells should also be used as storage points.

"In areas where water is saline, like Dwarka, the government should encourage direct storage of rainwater because it will take an extremely long time to form a layer of fresh water over the saline layer," suggested Sharma.

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SAVING FROM A RAINY DAY

A 2001 court order made rainwater harvesting mandatory for all new buildings with a minimum area of 100sqm, flyovers, group housing societies, hotels, hospitals and farmhouses. In a year, even a 50sqm house can harvest enough water to last a small family one month

Annual average rainfall in Delhi: 611mm

POTENTIAL FOR ROOFTOP RAINWATER HARVESTING

Roof area (sq m)	Rainfall (litres)	Harvestable (litres)
50	30,550	18,330
100	61,100	36,660
500	3,05,500	1,83,300
1,000	6,10,000	3,66,600

Average rainy days 20-30

COSTS

Recharge pit for 100sqm roof	₹2,500-5,000
Recharge trench for 200-300sqm roof	₹5,000-10,000
Gravity head recharge well for area greater than 400sqm	₹50,000-80,000
Recharge shaft for area greater than 1,500 sqm	₹60,000-85,000

Source: DJB

The Times of India, Delhi dated February 03, 2014

Govt to revive rainwater harvesting in schools

New Delhi: To address the issue of water crisis in the capital, Delhi government has decided to revive "non-functional" rainwater harvesting systems in schools to raise the groundwater level.

Around 800 government-run schools have rainwater harvesting pits and over 50% of them are non-functional, mostly due to no monitoring by the previous regime, Delhi government education coordinator, Amit Mishra said.

"The previous government invested over Rs 12 crore on this project, and around Rs 1.5 lakh for the construction of each system. Maintenance for each site costs Rs 4,000. The money seems to have gone to waste," Mishra alleged.

Delhi government officials said a team comprising engineers, scientists and advisors along with two education coordinators has been formed by education minister, Manish Sisodia, for the exercise.

It will be carried out under the supervision of Rakesh Kumar, scientist and head of NEERI's Mumbai centre and a visiting faculty at IIT Bombay, they said. The team will inspect four rainwater harvesting systems in different zones and try to identify faults. They will file a report along with steps suggesting what can be done to make them functional, officials said.

"Rainwater harvesting system capture rainwater and transfers it to an underground pit where it passes through filters like gravel, sand and boulders. The purified water increases groundwater level," Ankit Srivastava, an environment engineer, said.

"The aim is to encourage rainwater conservation and improve groundwater levels," he said. AGENCIES

Deccan Chronicle, Hyderabad dated February 05, 2014

MELTING ICE

Titanic killer gathers speed

Glacier that may have sunk the ship moves 17 km a year, says study

Greenland, Feb. 4: The glacier which may have sunk the Titanic over a century ago has picked up pace in the last 40 years.

Instability could propel the Jakobshavn glacier to 10 times its current speed by the end of the century, Britain's *Independent* newspaper reported quoting a study.

The glacier in the south-west of Greenland, is now the fastest moving glacier in the world. Measurements taken by satellites showed that last summer the glacier moved at 17 kilometre a year, or more than 46 metre per day.

This is the outcome of a rapid increase in the rate at which the massive Greenland ice sheet is melting, scientists said.

The glacier is pushing lots more ice into the ocean, causing an acceleration in the rate at which it is contributing to rising sea levels, according to the study's lead author Ian Joughin, a researcher at the University of Washington in Seattle.

Dr Joughin said the the melting of the glacier alone had increased sea level by about 1 millimetre. More of the same could be expected as the glacier speeds up.

The Jakobshavn Glacier drains about 6.5 per cent of the Greenland ice sheet and produces about 10 per cent of Greenland icebergs. This amounts to 35 billion tons of floating ice that eventually melt in the open ocean.

Giant glaciers running from the high-altitude interior of Greenland are continually pushed to the sea, where giant icebergs break off to form a "calve", which float into the ocean. Many end up in the North Atlantic where they can pose a shipping hazard — one of them struck the Titanic 102 years ago. — *Agencies*

Jakobshavn glacier in south-west of Greenland.

- This is the outcome of a rapid increase in the rate at which the massive Greenland ice sheet is melting, scientists said.
- The glacier is pushing lots more ice into the ocean, causing an acceleration in the rate at which it is contributing to rising sea levels, according to the study.
- It had increased sea level by about 1 mm.

The Times of India, Delhi dated February 05, 2014

Data used for Yale study wasn't authentic: Centre

Jayashree Nandi | TNN

New Delhi: While Yale University researchers have claimed they couldn't find "reliable and accurate" air quality data from India, the Centre has expressed doubts over the veracity of satellite data Yale has used for Environment Performance Index 2014. System of Air Quality Weather Forecasting and Research under the ministry of earth sciences stated in a statement issued on Friday that the ranking should have been based on ground level data which gives an authentic picture of air pollution.

"The report does not consider any Indian ground-based measurements of air quality which is the most accurate method so far. Non-uniform and incomplete sampling by satellites have the potential of creating bias. Satellite samples are from one location at one particular time in a day. Since this technique does not have capability to take measurements during cloudy conditions when air quality is best in India, it cannot consider good data for that period," says a statement by SAFAR. "Sampling error of satellite-derived PM2.5 is larger in regions influenced by biomass burning, mineral dust, or persistent cloud. Hence, concluding something based on such uncertain factors may be seen with precaution," it adds.

Scientists at SAFAR told TOI that Indian agencies could have given the required data to Yale researchers if they had asked. They, however, did not deny that air quality was indeed very poor in India.

Angel Hsu, lead author of EPI, clarified that they have used only satellite data for assessment. "We produce country-level aggregations of average exposure to fine particulate matter (PM2.5) using satellite data processed by research teams at Yale, Columbia, and Dalhousie Universities," Hsu said.

Many agreed with Yale researchers, though, on lack of reliable air quality data in India.

"We have real time monitoring only for major cities but it has to be implemented in Tier II cities. Our manual monitoring stations outnumber automatic ones which is why the data eventually reported is not credible and often conservative. However, Delhi is now in position to replicate robust monitoring like that of China by including an air quality index and a health advisory. They should do it soon," Anumita Roychowdhury, head of air pollution and clean transportation programme at Centre for Science and Environment, said.

CAPITALS ON WATCH

INDIA	CHINA
Real time monitoring only in Delhi, Kolkata, Mumbai, Bangalore, Faridabad, Lucknow, Kanpur, Patna, Ahmedabad, Chennai and Hyderabad	Manual monitoring stations outnumber online monitoring stations. These give conservative readings and are not as reliable
PM10 being monitored in most cities but not PM2.5	China started releasing hourly and 24-hour data for PM2.5 in 113 major cities at end of 2013
CPCB claims it has 342 operating stations in 127 cities and 4 UTs	It has a goal of increasing the number of monitoring sites to 1,500 cities by 2015
CPCB claims to monitor sulphur dioxide, oxides of nitrogen, SPM and RSPM/PM10	China has a $277 billion dollar air pollution control plan

PM = Particulate matter; PM = Suspended particulate matter; RSPM = Respirable suspended particulate matter

Deccan Chronicle, Hyderabad dated February 06, 2014

India can't gauge its pollution levels

DC CORRESPONDENT
NEW DELHI, FEB. 5

The Central Pollution Control Board (CPCB) is monitoring air pollution levels across 350 Indian cities but questions are being asked about the inadequate levels of air pollution data being generated from these cities .

Despite the ministry of environment and forests (MoEF) having made an substantial allocation for the setting up of online monitoring stations across all these cities, Delhi remains the only Indian city which has set up eleven online National Ambient Air Quality Monitors which provide real time pollution data on an hourly basis.

Centre for Science and Environment (CSE) which has been assessing these air pollution out flows for over a decade believe that there is a serious need to move away from the existing hand run portals to install online portals.

Sunita Narain, director general of CSE said, "The entire NCR is an extremely polluted but Noida does not have a monitoring station till date. Gurgaon's pollution levels are extremely high and while they set up a pollution station last week, we have learnt that it is not functioning."

Chennai has eleven monitoring stations but five of these continue to be hand run but the data from these are probably faulty, pointed out Dr Anumita Roychowdhury of CSE.

By contrast, Beijing has 35 monitoring stations providing online data round the clock.

Pollutant levels in Gwalior, Kanpur, Howrah, Asansol and Ghaziabad are higher than Delhi but air quality data generated by these cities remains a matter of concern especially since none of these cities are classified as critically polluted.

No city in India, including the capital, has a system in place to issue health advisories especially when particulate matter levels are higher than the prescribed safe limits.

The CSE review also refutes the findings of the recently released report of IITM-SAFAR on Delhi's pollution levels.

The report submitted by the CSE had stated that though emissions have increased by 10-20 per cent in the capital in the last four years, there is no systematic increase in air pollution levels.

- Chennai has eleven monitoring stations but five of these continue to be hand run but the data from these are probably faulty.
- No city in India, including Delhi, has a system in place to issue health advisories.

The Times of India, Delhi dated February 06, 2014

'People will press for steps in fighting climate change'

When leaders fail to lead, people take charge and leaders have to follow, says Kofi Annan, former UN secretary general and a Nobel laureate. In an interview to **Subhabrata Guha**, he expresses optimism that slowly and steadily, the world is gearing up to the challenges of climate change and global warming.

The Elders, a group of political leaders first convened by Nelson Mandela — including Kofi Annan, Jimmy Carter, Desmond Tutu and Mary Robinson — used the WEF in Davos to call for renewed efforts to conclude a global climate pact by the end of 2015 and work toward a "carbon-neutral" planet by 2050. How far do you think this will be successful given the reluctance of the developed nations to cut down on emission?

Let me tell you about the Elders, convened by Nelson Mandela to use our voices to help protect the poor. We were not part of any government. Most of us were independently employed. But we decided to engage in discussing global issues and offer advices.

On climate change, we often don't fully appreciate that it as a problem. We think it is a problem waiting to happen. We see the floods, we see the droughts. This is a threat to our drinking water, our food, and possibility of having scarce resource. This is where we need to come up with sustainable model of development. We have to ensure that carbon emission should be contained. Governments, societies and people have to take tough decisions. We need to make sure that polluters pay. We need to make sure that those who use fossil-fuel pay the cost. We should remove the subsidy from fossil fuel.

The discussions on global emissions have not been successful yet. So we are going to try next year and the year after. I think we have to accept we are all responsible for the earth, but the richer and developed countries have a greater responsibility. But that doesn't mean others are not responsible. They may have to take bigger steps, but India, my country Ghana, China will have to take steps to mitigate climate change.

Given the outcome of the Warsaw conference and the debate on Loss and Damage mechanism, do you think the road to Paris will be easier?

I don't think Paris will be easier. You also have to understand that we are just coming out of a financial crisis. When economic conditions are difficult, people tend to be less generous, and the question of solidarity doesn't mean much to them at that time.

Developing countries don't have enough resources to completely switch to renewable energy from fossil fuel-based economy. How is a country like India, whose 54% of energy comes from coal, expected to be a change-maker?

It involves cost. If we come up with innovations and train young people to take on new jobs and if we can switch over to clean energy, we have the capacity to make this world not dependent on fossil fuel.

Adaptation efforts need to be scaled up. The world's poorest are the hardest hit, but they have done the least to cause it.

The poor have done the least to cause global warming and yet they pay the highest price. That's why setting up a fund to help the poorer countries is a fantastic idea, but where is the money coming from?

Across the world, people from different communities and grassroots are voicing their plea for actions from governments. Is this a new writing in the wall for a new climate revolution?

I have always believed that on important issues, the leaders must lead. Where the leaders fail to lead and people are concerned about it, the people will take the lead and make the leaders follow. On climate change, it can lead to greater mobilisation where people get involved and push the environmental agenda. On big issues, they are not going to sit at home. They will act and press for action.

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

Arctic winters have shrunk by a month?

Kounteya Sinha | TNN

London: Arctic winters may have got shorter by a month. Arctic lakes have been found to be freezing up later in the year and thawing earlier, creating a winter ice season about 24 days shorter than it was in 1950.

Satellite imagery has also confirmed that climate change has dramatically affected the thickness of lake ice at the coldest point in the season: In 2011, Arctic lake ice was up to 38 centimeters thinner than it was in 1950.

The study of more than 400 lakes of the North Slope of Alaska is the first time researchers have been able to document the magnitude of lake-ice changes in the region over such a long period of time. The research team used satellite radar imagery from the European Space Agency to determine that 62% of the lakes in the region froze to the bottom in 1992. By 2011, only 26% of lakes froze down to the bed, or bottom of the lake.

'City needs policy for air pollution'

CSE Wants Action, Not Sparring On Figures

TIMES NEWS NETWORK

New Delhi: The Centre for Science and Environment has said that instead of sparring over whose data on air pollution is correct and whether or not Delhi's air quality is better than Beijing's, the government needs to recognize that the city's air quality is extremely poor and needs an urgent policy intervention.

CSE director Sunita Narain, who was part of the team instrumental in getting CNG for public transport, said all gains in air quality after conversion to gas in the early 2000s have been negated due to massive motorization. "We have lost, officially," she said.

Anumita Roychowdhury, head of CSE's air pollution control team, said the defence offered by Institute of Tropical Meteorology, Pune, was weak because the air quality index used by them did not give the exact amount of emissions at any point of time.

"In January 2014, IITM claimed PM 2.5 levels hardly touched 350 mg per cubic metre.... most days ranged between 100-300 mg per cubic metre...It concluded, based on data for five days for Delhi and Beijing, that the level remained lower in Delhi at 150-270 mg per cubic metre as compared to Beijing where it reached 500-670 mg per cubic metre. These levels are unacceptably high," said Roychoudhury.

CSE reviewed daily 24-hour average PM 2.5 levels between October 1, 2013 and January 31, 2014 at three monitoring stations in R K Puram, Mandir Marg and Punjabi Bagh. It found that on most days, the levels exceeded the standard by four to seven times and on two occasions exceeded the standard by 10 and eight times respectively.

"If Beijing's health alert system was applied to Delhi's winter pollution, out of the total number of days monitored during last four months, only one day would qualify as excellent, while 45 days as heavily polluted and 51 days as severely polluted," she added.

HOW AIR WORSENED

Analysis of PM 2.5 data from three stations between Oct 1, 2013 and Jan 31, 2014

Air quality (standard 60 mcg/m3)	No. of days	Percentage
Within standard	3	2
50% above standard (60-90)	7	6
100% above standard (90-120)	7	6
300% above standard (120-240)	51	41
500% above standard (240-360)	41	33
Above 360	14	11

The Times of India, Delhi dated February 08, 2014

Kejri joins fight to save NCR greens

Dipak Kumar Dash | TNN

New Delhi: Chief minister Arvind Kejriwal has come to the rescue of nature conservation zones in NCR such as Aravalis, riverbeds and water bodies, which have become the target for commercial exploitation in the name of allowing tourism.

Kejriwal has sought a meeting with urban development minister Kamal Nath before the revised plan for the region is finalized. There is a proposal

CM TO NATURE'S RESCUE

to allow tourism activities and construction beyond 0.5% limit in such environmentally critical areas with permission from competent authorities.

Nath chairs the NCR Planning Board (NCRPB). Sources said Kejriwal wrote to the UD minister last week stating there were some crucial issues, including environmental concerns which needed to be addressed for sustainability.

Kejriwal could not attend the last NCRPB meeting on January 20 because of his dharna. However, LG Najeeb Jung raised his view against relaxing any norm that may have huge environmental implications. It is learnt that Jung emphasized on including his views in the minutes that the limit of construction should be capped at 0.5%. Officials in NCPB and UD ministry are tightlipped whether LG's views will be recorded in the minutes.

"The regional plan has direct bearing on sustainability. We have recorded our concerns on issues like protection of ecologically sensitive Aravalis, land availability for solid waste disposal and setting up of more hospitals in other NCR cities," said a government official.

Environmental activists have been opposing the dilution in norms which may pave way for commercial tourism at large scale in Aravalis and other such areas. Allowing tourism won't just harm the natural habitat but will also destroy the huge natural groundwater recharge zone in Aravalis.

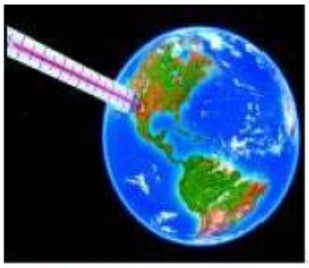
In 2005, the regional plan allowed only "regional recreational activities"--regional parks and wildlife sanctuary, etc-- with a limit of construction not exceeding 0.5% of land and that too with permission of competent authority. There was no provision of exception. However, the new provision reads, "Regional recreational activities (including tourism) with a limit on construction of 0.5% except with the approval of competent authorities." The provision of "except" may provide enough scope for commercial exploitation.

The Times of India, Delhi dated February 09, 2014

'Lima talks to focus on nature of contributions'

Climate Meet Head: Road To Paris Not Easy

Vishwa Mohan | TNN



HEAT IS ON

New Delhi: President of the Warsaw climate conference (COP19) and Poland's secretary of state, Marcin Korolec, has said the 'nature of contributions' from countries to deal with menace of global warming would be the 'main political question' in Peruvian capital Lima where leaders from across the globe assemble for the next meeting in December.

In the first and only interview to Indian media over outcome of the last climate conference (COP19), Korolec said that the road to Paris for universal climate deal in 2015 may not be easy, but the Warsaw round made the global community confident about the process of negotiations which will certainly lead the nations to a final decision.

Korolec, who visited India to participate in the 14th Delhi Sustainable Development Summit (DSDS), also emphasized that the rich nations would not be able to dilute the differentiation between developed and developing countries and they will have to contribute to face the challenges of climate change under principle of 'common but differentiated responsibilities' (CBDR) — which puts the onus of corrective measures on developed countries.

Elaborating on the CBDR, he said, "I think, we have to go back to the Durban meeting where we had decided that we as a community will negotiate a global agreement applicable to all and the negotiations should finish in 2015.

"In the Durban language, there is also a statement that this new agreement applicable to all should be negotiated under the convention. It means that the principles linked to the convention and also with the principle of CBDR and respective capabilities."

Korolec said, "I think that the outcome of the Warsaw meet is very positive in that sense because it says all countries will start preparing contributions. Those contributions will obviously be determined by the countries presenting it. So in that sense, the principles of CBDR is possible to be realized."

On the question as to who will decide those contributions from developing countries, the Polish secretary of state said, "The nature of contribution is another story. We have to discuss this in Lima. It will, in fact, for the individual country to define it."

Deccan Chronicle, Hyderabad dated February 10, 2014

Techies turn 'vigilantes' for lakes

M. ROUSHAN ALI | DC
HYDERABAD, FEB. 9

Software professionals and residents of colonies in and around Hitec City and other areas in Cyberabad are pooling money to not only protect lakes from land sharks but also to save the water bodies from being reduced to open drains and garbage dumps.

They have succeeded at Nerella Cheruvu, and the fight is still on to save Mundi Kunta lake.

And therein lies a tale.

An unlikely alliance of IT employees and residents, led by Mr Pradeep Gadicherla, convener of the environment wing of ITs AP Association, has succeeded in protecting the Nerella Cheruvu located amidst colonies at Kothaguda near Hitec City.

The group also acts as a "whistle blower", alerting the GHMC and revenue officials whenever debris is dumped in the lake — the first step by land sharks to grab the area.

Mr Gadicherla, who stays at Aparna Towers, says, "Employees from IT companies stay in colonies near the lakes. We have formed groups along with other residents. Whenever we notice anyone trying to encroach the lake, we raise an alarm, said Pradeep.

It has worked wonders.

The situation is different at Mundi Kunta lake at Khanamet village, on the road to the Hyderabad International Convention Centre. The techies and the other residents are willing to raise ₹15 lakh to fence the lake, beautify its environs and develop a walkers track around it.

The owners of the 432 apartments at the Meenakshi Sky Lounge have volunteered to pay for the lake's maintenance, says Mr Sanjeev Arcot, who works at Prosoft.

"We have submitted representations to the GHMC officials and alerted revenue officials about the risk of the lake area being encroached," he said. "But there seems to be no coordination between the GHMC and the revenue department, due to which our efforts have not borne fruit," he said.

Techies have taken the lead in canvassing support from residents of colonies, apartment complexes and gated communities near the Mundi Kunta lake, including Aparna Towers, Surya Towers, Aditya Sunshine and Casa Rouge.

The drainage of several colonies flows into the Mundi Kunta lake and the GHMC is not diverting it, said Mr K. Srikant, a Kondapur resident and Cognizant staffer.

"No government agency takes responsibility for the lake. The GHMC says the owner of the water is the irrigation department, and the role of the municipal officials starts outside the full tank level. So we paid to clean the water. The GHMC strengthened the fencing, planted saplings, and installed solar lights. We want this done in Mundi Kunta too," said T. Mahadev and Kali Prasad of Greater Safari Nagar.

The mud and debris dumped in Mundi Kunta lake. —DC

- An alliance of techies and the public has succeeded in protecting the Nerella Cheruvu
- They alert the GHMC about those who attempt to grab the lake
- The techies and the public are now trying to save the Mundi Kunta lake

Pradeep Gadicherla

K. Srikant

Sanjeev Arcot

The Times of India, Delhi dated February 10, 2014

Polar getaway for smog-weary rich Chinese

Saibal Dasgupta | TNN

Beijing: China's wealthy are making a beeline for the Antarctic. The country's rich families are travelling and even buying houses in New Zealand, Australia and Spain because they want to get away from the heavy smog and pollution in the Chinese cities.

Tour operators are charging between $50,000 and $80,000 per person for such trips and took an estimated 3,000 Chinese tourists to the southern polar region in 2013. The number is expected to grow at least 40% this year, tour agencies said.

But these trips are causing anxiety among environmentalists who say that marine ships cause sea pollution while tour groups often frighten the birds. Tourists are known to smoke and leave behind food crumbs.

Chinese tour operators claim their customers follow regulations and respect the wildlife and environment. Many of the travellers are drawn by Chinese icebreaker Xue Long which recently carried out a rescue mission for stranded scientists from other countries.

AFP

GASPING FOR FRESH AIR

"It's a dream for our whole family. The penguins, the snow, and the glaciers – it's all so beautiful. I could feel myself and my spirit," China Central TV quoted one of the travellers, Song Xiao'ai, as saying.

The Spring Festival holidays which just ended, saw a 30% increase in Chinese travellers to the UK, US and Australia as compared to the same period last year. Chinese tourists are known to particularly seek out pollution free locations with clear blue skies because they are tired by the environmental situation at home, tour operators said. "Compared to last year, the number of visitors rose by 30% during Spring Festival," said Kevin Shao of Omega Travel in UK said.

The Times of India, Delhi dated February 11, 2014

New emission norms set for phased rollout

Panel To Suggest Shift To Bharat V By 2021, Will Give Oil Cos Time To Upgrade Refineries

TIMES NEWS NETWORK

TOWARDS CLEANER AIR

- Initially, Bharat Stage IV-Plus (BS-IV+) norms will be implemented in major cities from 2016, followed by a national rollout of BSV in 2022
- This process will slash sulphur levels form 350ppm under BS-III norms to 50ppm initially and then to just 10ppm eventually
- But auto cos want BS-V norms by 2016 itself to encourage retrofitting & replacement of old vehicles, while allowing them to hike prices
- Oil cos, on the other hand, may have to spend over ₹75,000cr on upgrading facilities to produce the required quality of fuel

New Delhi: In the battle between oil and auto companies, an expert panel is all set to recommend a shift to cleaner emission norms and is expected to take the middle path, suggesting a move to Bharat Stage IV+ from 2016, before moving to Bharat Stage V in 2021.

The shift to Bharat V, a long delayed move, will lead to a steep decline in sulphur levels and help in aiding the fight against pollution. Enforcement of cleaner emission norms across the country has taken time.

Sources said in the initial rounds, BS-IV+ will be introduced in the major cities as the oil companies are not fully geared for a nationwide transition that will take place from January 2017. Similarly, a national rollout of BS-V is proposed to take place in 2022. The sources said that even under this route the sulphur level will come down to 50PPM from 350 under BS-III, and then move to 10PPM.

The auto industry and several environmental groups are keen that BS-V should be rolled out nationally by 2016 since car and bike makers will gain from the transition, requiring retrofitting as well as replacement of old vehicles. Besides, the auto industry resorts to a price hike when new emission norms are introduced, helping it improve its margins.

In contrast, oil companies have to make significant investment in upgrading the quality of fuel, with some estimates pegging the shift to BS-V at over Rs 75,000 crore. "There are some refineries that can make the transition quickly but there are several others that need time. In fact, the ones in the North East may find it tough to meet the aromatic requirements even later," said a source familiar with the discussions in the panel.

Besides they pointed out that even the transition to BS-IV has not been smooth with a phased rollout taking place. The government moved to BS-IV in 13 cities from 2010, while other parts of the country remained on a lower level of emission. Experts said the government should move towards a common emission norm throughout the country.

"You cannot have a dual system for emission norms. The government must implement BS-IV across the country and then move to BS-V. The move to have a BS-IV+ is a half-baked exercise and will not solve the real purpose which is clean air," said S P Singh, senior fellow Indian Foundation of Transport Research and Training.

Deccan Chronicle, Hyderabad
dated February 11, 2013

NATURE | CONTROL

Less ice melting due to the winds, says study

Trade winds slow global warming

Sydney, Feb. 10: An unprecedented spike in Pacific trade winds has seen global warming slow significantly in the past 12 years but the effect is only temporary and temperatures will surge, a study found on Monday.

The Australian-led report, published in the latest edition of Nature Climate Change, said a dramatic acceleration in equatorial trade winds blowing from the Americas to the West Pacific had boosted circulation of the ocean.

"If the trade winds blow particularly strong that warm water that's piled up there starts to converge in the ocean interior," said lead author Matthew England.

This pause in surface warming doesn't mean that global warming has stopped at all, we see Arctic sea ice melting to record low levels, said lead author of the study, Mathew England.

"In a way it's locking away energy we've obtained from greenhouse gas into the subsurface ocean and that's what causes the hiatus (in global warming)."

The study examined a pause in global warming since 2001 along with a previous such stall between 1940-75 and identified a close link to negative phases of the Interdecadal Pacific Oscillation (IPO) — a wind pattern associated with a cool tropical Pacific and strengthened winds.

Dr England said the winds finding helped to explain why global warming didn't occur in a continual upward trajectory — a criticism of climate change sceptics — but "a series of abrupt steps in between periods of more or less steady temperatures".

"This pause in surface warming doesn't mean that global warming has stopped at all, we see Arctic sea ice melting to record low levels," he said. — *AFP*

The Times of India, Delhi
dated February 12, 2013

After 2 yrs, no progress on Delhi's pollution action plan

Jyashree Nandi TNN

Departments Sit On Draft While Air Quality Gets As Bad As Beijing's; No Check On Emissions

New Delhi: There is now mounting evidence that Delhi's air quality is comparable to, if not worse than, Beijing's notoriously poor air quality. But, the second-generation action plan for Delhi's pollution—drafted to deal with the deteriorating air quality after CNG introduction—doesn't seem to have been finalized almost two years after it was prepared. All the government departments are still to give their response, and seem to be in no hurry to finalize the plan.

The only non- Government member of the drafting committee, Anumita Roychowdhury of the Centre for Science and Environment (CSE), says the plan was with the chief secretary before the new AAP government took over. "I don't know why the plan has not been finalized. The absence of any plan to deal with severe air pollution in Delhi would obviously give Beijing a lead in countering the problem," she says.

The action plan has a number of policies that can help improve the air quality in Delhi. For instance, the Delhi government will ask the Centre to introduce Euro V and VI emission norms early to reduce particulate and oxides of nitrogen (NOx). Currently, Delhi has Euro IV norms. Other important features are a parking policy, including parking tariff, pedestrian facilities, expansion of CNG and a total upgrade of public transport.

"Apart from a few more buses, Metro lines and cycle tracks around the CWG venues, Delhi has done nothing since 2008. In contrast, Beijing already has Euro 5 norms; it has about 20,000 buses, light rail and metro, a cap on the number of cars, besides pollution emergency measures and vapour recovery systems at petrol pumps. They are clearly more aggressive and sophisticated," added Anumita.

Sandeep Mishra, member secretary of the Delhi Pollution Control Committee (DPCC), confirmed the suspicion. "There is no progress yet. The plan was with various government departments that had to give their comments," he said. DPCC had contested the claim that Delhi's air quality is poorer than that of Beijing by releasing data monitored by them. However, the data also pointed to very high peaks in PM10 (coarse particles) and PM2.5 (fine, respirable particles), about three to five times the standard.

Experts, however, are unsure if a 'silver bullet' like CNG can bring immediate relief. They recommend a number of steps. "Delhi's air quality is bad and something needs to be done. I think there is no point in drawing comparisons with Beijing. We can immediately focus on burning of waste and biomass across the city. Also, we have a quarter of the buses needed. Bus service should be ramped up and made reliable and comfortable. It's undemocratic to ask people to stop using cars completely," said Sarath Guttikunda, director of urbanemissions.info.

Guttikunda's research shows that pollution from industries in Ghaziabad, Faridabad, Janakpuri as well as brick kilns in Sohna, Ghaziabad and other neighbouring towns, wreaks havoc on Delhi's air. "We also need curbs on emissions from diesel generator sets and brick kilns fired by coal," he said.

The Times of India, Delhi
dated February 14, 2014

This machine makes 'bio-bricks' with pee

Washington: A new portable machine uses a mixture of sand, bacteria and urine to create an eco-friendly concrete-like material that can be used to make bricks to build houses. The machine, called 'Dupe', uses a mixture of sand, bacteria and urine to create a material called biostone.

The machine is a proof-of-concept design only and is currently set up to create a small stool, but the method can be adapted to create just about anything, 'Gizmag' reported. Designer Peter Trimble, while studying at the Edinburgh College of Art, decided to look at the sustainability of material production and found that cement production was the most environmentally damaging.

He then developed the biostone which is environmentally-friendly, but can be easily made as bricks for building housing in developing countries or remote places. The procedure for creating biostone involves filling a mold of the final required shape with sand before pumping a bacteria solution of bascillus pasterurii (which has been grown in a nutrient broth) into the mold and leaving the mixture to establish itself overnight.

GREEN BLOCKS

A solution of calcium chloride, urea and nutrient broth is then pumped into the mold. The bacteria uses the urea as energy to absorb the calcium chloride and convert it into calcium carbonate, a cement-like mixture that binds the sand together within the mold. AGENCIES

Plastic bags can produce diesel fuel

Kounteya Sinha | TNN

London: In a major breakthrough Indian-origin scientists based in US have successfully converted plastic shopping bags into diesel, natural gas and other useful petroleum products. The conversion produces significantly more energy than it requires and results in transportation fuels like diesel. Other products such as natural gas, naphtha (a solvent), gasoline, waxes and lubricating oils such as engine oil and hydraulic oil also can be obtained from shopping bags.

Brajendra Kumar Sharma, a senior research scientist at the Illinois Sustainable Technology Center led the research. He said it involved a process called pyrolysis which is essentially heating the bags in an oxygen-free chamber.

"You can get only 50 to 55% fuel from the distillation of petroleum crude oil. But since this plastic is made from petroleum in the first place, we can recover almost 80% fuel from it through distillation," Sharma said.

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

NGT wants rules to stop pollution from straw burning

TIMES NEWS NETWORK

New Delhi: The National Green Tribunal has directed the agriculture ministry to hold a meeting with Punjab, Haryana, UP and Delhi to prepare "composite" guidelines to prevent pollution caused by straw burning.

A bench headed by Justice Swatanter Kumar directed the agriculture ministry to try to also specify the manner and time frame required to implement the guidelines.

The tribunal asked the agriculture ministry to hold a meeting with Punjab, Haryana, UP and Delhi to prepare 'composite' guidelines

"We direct the ministry of agriculture to hold a meeting with all the states, including Punjab and Haryana, central pollution control board (CPCB) and the national academy of agricultural sciences and prepare composite and complete guidelines for preventing and controlling the pollution resulting from burning agricultural remnants in open fields...modality and time frame for its implementation should be placed before the tribunal," the bench said.

The order was passed after all the parties, including the Centre, state governments and CPCB suggested the formation of general guidelines. The tribunal has listed the matter for further hearing on March 21.

NGT was hearing a plea by environmentalist Vikrant Tongad who has alleged that burning of agricultural residue in Punjab, Haryana and Uttar Pradesh is responsible for air pollution locally and smog in the NCR.

In the winter of 2012, a major smog episode was witnessed in the city. The Delhi government had blamed the neighbouring states for it. Environment Pollution Control Authority had directed the states, especially Punjab, to issue notifications to stop the burning of agricultural residues.

Lasers fuel hopes of unlimited, clean N-power

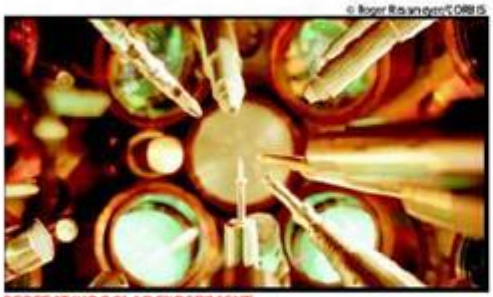
In A First, Scientists Release More Energy From Nuclear Fusion Experiment Than They Put Into It

Steve Connor

A milestone has been reached in the 60-year struggle to harness the nuclear reactions that power the Sun in an experiment that could lead to a way of producing an unlimited source of clean and sustainable energy in the form of nuclear fusion.

Scientists in California said on Wednesday that they have for the first time managed to release more energy from their nuclear fusion experiment than they put into it, which marks a critical threshold in eventually achieving the goal of a self-sustaining nuclear-fusion reaction.

Nuclear fusion uses a fuel source derived from water and produces none of the more dangerous and long-lasting isotopes, such as enriched uranium and plutonium, that result from conventional nuclear power plants which rely on the fission or splitting of atoms rather than their fusion.


© Roger Ressmeyer/CORBIS

RECREATING SOLAR EXPERIMENT

Researchers involved in the Nuclear Ignition Facility (NIF) at the Lawrence Livermore National Laboratory said that they have used 192 laser beams to compress a tiny fuel pellet less than half the diameter of a human hair in such a way that it triggered the net release of energy by nuclear fusion. The fuel, composed of the two hydrogen isotopes tritium and deuterium derived from water, was compressed together under enormous pressures and temperatures for less than a billionth of a second, but this was enough to see more energy coming out of the experiment than went into it.

"We are fusing deuterium and tritium, which are isotopes of water, in a way that gets them to run together at high enough speed to overcome their natural electrical repulsion to each other," said Omar Hurricane of the Livermore laboratory. "We are finally by harnessing these reactions, getting more energy out of these reactions than we are putting into the deuterium-tritium fuel... We took a step back from what we tried before and in the process took a leap forward," said Dr Hurricane, who led the NIF study published in the journal Nature.

There are currently two parallel approaches to nuclear fusion. One uses laser energy to compress fuel pellets — like the NIF experiment — and aims to keep the fuel in place by a process known as inertial confinement.

The other approach is to build a complex magnetic "bottle" to hold the hot, electrically charged plasma of the fuel in place. This magnetic confinement is the strategy of the Joint European Torus experiment in Culham, Oxfordshire, and the international ITER nuclear fusion plant under construction at Cadarache in southern France.

Both approaches aim to gain more energy than is put into the system, and ultimately to a critical stage called "ignition" when the reaction becomes self-sustaining, which would mean that fusion could be exploited practically in power plants as an unlimited source of clean energy. The breakthrough at NIF was made possible by altering the laser pulses focusing on the fuel pellet in such a way that it led to the even compression of the capsule holding the deuterium and tritium, said Debbie Callahan, one of the researchers involved. THE INDEPENDENT

Deccan Chronicle, Hyderabad dated February 16, 2014

Citizens face health hazards due to poisonous smoke

Civic staff burn garbage on road

M. ROUSHAN ALI | DC
HYDERABAD, FEB. 15

After the garbage strike was called off, the citizens are being exposed to poisonous smoke billowing out of garbage piles that are being set on fire on the streets.

Sanitation workers of the Greater Hyderabad Municipal Corporation are burning the garbage on the streets and posing serious health hazards to the residents. It may be mentioned that thousands of tons of garbage had spilled over from the trash bins, on to the streets, due to a five-day strike by garbage cleaning staff of the civic body.

Enquiries revealed that there are about 3,500 garbage bins in the city, each with the capacity to hold a ton of trash. The city generates anywhere between 3,500 metric tons and 4,000 metric tons of garbage every day.

During the five-day strike, all these 3,500 bins got filled up in just two days and thereafter, the trash spilled on to the roads. Nearly 10,000 metric tons of garbage is expected to have spilled on to the streets during the strike.

Garbage from only the bins is being cleared, and not that which has spilled on to the streets. — DC

Though the strike was called off three days ago, garbage from only the bins is being cleared, and not that which has spilled on to the streets. This is because the GHMC dumper placers (garbage transport vehicles) have an in-built technology to lift only the bins filled with trash and replace it with an empty one.

The spilled over trash, on the streets, is not being cleared. Though GHMC employed additional labourers to collect the garbage and pack it into the garbage transport vehicles, officials in nexus with contractors pocketed the money and did not remove the garbage from the streets.

Subsequently, the sanitation workers responsible for sweeping of internal roads have started burning the garbage.

GHMC additional commissioner (health/sanitation) L. Vandan Kumar admitted that garbage is being burnt.

"On Saturday, I inspected the garbage clearing operations and found the trash was not lifted from the streets at several places. Also, it was burnt. We have specifically explained to the sweeping staff, during their training programme, the hazardous impacts of garbage burning. We will not hesitate to cancel their contract with GHMC, if they do not stop burning the trash," he said.

The risk of cancer increases among people who are constantly exposed to the dioxins and furans that come out of the burning garbage. The garbage smoke can also cause cancer of the bladder and lung. It has the potential to even impact the immune, endocrine, nervous and reproductive system

— DR VIJAY K. CHENNAMCHETTY, pulmonologist

The Times of India, Delhi dated February 18, 2014

When eco meets the economy

TEAM TOI

India's first National Agroforestry Policy (NAP), announced in the interim budget, is expected to help natural resource management and improve forest cover to 33% from the present 20%

It aims to include agroforestry in mainstream agricultural policies by promoting it in integrated farming systems. The policy has linkages with several ongoing campaigns, like the 'Green India Mission' under which 100 crore trees will be planted to improve forest cover.

Recommended by National Advisory Council headed by Congress chief Sonia Gandhi, the policy stresses the complementary relationship between trees and crops — tree planting can stem water-logging through bio-drainage. It remains to be seen if farmers will support the idea of agroforesty. "Agroforestry is a long-term concept. Instead, farmers want short-term, hassle-free gains, and are therefore going in for horticulture forestry," said Raju Pugalia, a stakeholder.

The Times of India, Delhi dated February 17, 2014

6 Pak teams join race to capture bird diversity

TIMES NEWS NETWORK

New Delhi: Bird lovers across the country including Delhi spent the entire day trailing birds in different bird-rich locations. As part of the Big Bird Day 2014, 384 birder teams—comprising about 3,000 to 5,000 people—documented the diversity of bird species. In the capital, 27 teams participated. They covered Sultanpur Bird Sanctuary, Okhla Bird Sanctuary, Asola Wildlife Sanctuary, Yamuna Biodiversity Park, Aravalli Biodiversity Park and other sites.

For the first time, six teams from Pakistan joined the bird race. Teams also came from Spain, Dubai and the US. Every state and union territory including Daman and Diu, Pondicherry, Manipur, Mizoram, Nagaland and others participated, organizers said.

"The response has been huge this year. Last year, there were only 160 teams," said birder and co-organizer Bikram Grewal. He plans to make it an international event starting next year.

FIELD DAY: Birders spotted many species, like (L to R) Bluethroat, Bar-headed goose & River lapwing, on Big Bird Day

The Big Bird Day started from the Delhi Bird group—a team of avid bird-watchers a few years ago. In another first this year, the exercise is being computed on a software called E Bird. "Last year it was slightly ad hoc, so we tried to make it much more organized this time by urging everyone to submit their results on EBird which can compute the results accurately," added Grewal. The final results of the number of species that were spotted across the country will be declared on Saturday.

Nikhil Devasar, another birder and co-organizer of Bird Day, said that the results will indicate the health of bird diversity in India. "We are not mapping numbers but numbers of species. It's a huge exercise, so it will take us time to compile the results," he said. There are no binding rules, participants usually make their own teams, set out at sunrise and come back at sunset. Some teams also do it only for a few hours.

At Aravalli Biodiversity Park, for instance, a seven-member team participated from 7.30am to 1.30pm but 79 species were recorded compared to 84 last year. "This may be due to fog and bad light in morning hours. After it became sunny, more species were encountered," said M Shah Hussain, scientist in charge at Aravalli Biodiversity Park. Some important species they spotted include Eurasian eagle owl, Orange headed thrush, Rufous fronted prinia, Booted eagle, Grey breasted prinia, Common wood shrike and Oriental honey buzzard.

Teams at Yamuna Biodiversity Park also had a ball spotting 95 species. "The Thick-billed flowerpecker was seen for the first time. It's a rare bird. We are thrilled with the sighting," Faiyaz A Khudsar, scientist in charge at Yamuna Biodiversity Park, said.

Deccan Chronicle, Hyderabad dated February 18, 2014

Land sharks prey on lakes

Receding water favours land grabbers, but authorities yet to fence lakes

COREENA SUARES | DC
HYDERABAD, FEB. 17

The Greater Hyderabad Municipal Corporation and the Hyderabad Metropolitan Development Authority are not even half way through with the job of lake fencing, making things easier for the land grabbers who are active during summer, which is considered the prime time for encroachment.

With the decreasing water levels, the lake bed is exposed attracting land sharks.

In 2013, at Muskin Cheruvu located in Rajendarnagar mandal, a boundary wall was constructed on the lake bed to stop water from flowing into the lake even during the monsoons. At present, construction of a high-rise building is on there.

It is the same story at Yellamma Cheruvu at Kukatpally, Bundagudda lake at Uppal and Khajagudda lake on the old Bombay highway. All these were encroached upon during summer when the water spread had shrunk.

The Chinnarai Cheruvu, the biggest lake in Alwal area, was illegally occupied in 2011 during summer. The land grabber had easily managed to build a colony and sell the houses. Currently, more than 20 houses exist illegally in the area.

When the water dries up during summers, only agricultural activities are allowed on the exposed land. However, land sharks fill the exposed land with construction debris to raise the level of land, which later does not look like a part of the original lake bed. The GHMC and HMDA, during granting layout or building permission, usually do not refer to the master plan, which has the survey numbers of lakes. The land grabbers also bribe the village panchayat members.

Last summer, at the Kapra lake, a tennis court and an indoor stadium was constructed.

Illegal constructions have come up around the Yellamma Cheruvu at Kukatpally area.

- **Land grabbers bribe village panchayat members.**
- **A tennis court and an indoor stadium were constructed at the Kapra lake last summer.**
- **Land sharks occupied lake beds at Nalla Cheruvu, Parfu Lake and Idl Cheruvu and sold plots for high rates.**

Civic body yet demarcate most water bodies in city

DC CORRESPONDENT
HYDERABAD, FEB. 17

There are 2,857 water bodies in the HMDA area but the civic body has demarcated only 340 of them. The other lakes are open to the risk of being "grabbed."

The HMDA had a modest aim of marking the contours of just 500 water bodies. Even here, environmentalists complain, the HMDA is marking the full tank level (FLT) according to the existing water spread, and not the original size of the lakes.

K. Chakri, a city-based environmentalist, said "The demarcation is being done as per the present water spread. Whatever lake land is encroached upon is the original water spread, and those are neither being identified nor removed."

"The HMDA should first remove all the encroachments in lake beds up to the original water spread," said G.V. Rao, another environmentalist.

An official of HMDA's Buddha Purnima Project said that FTL was based on irrigation department records.

Sewage plant built on lake

KRUTHI GONWAR | DC
HYDERABAD, FEB. 17

It appears that the 300-plus lakes that remain in Hyderabad will also fall prey to concretisation.

The illegal construction of a sewage treatment plant in the already-shrunk Lingamkunta lake in Serilingampally, will further lead to killing of the existing lake resources.

In spite of a contempt case pending at the HC to stop the construction, the Water Board officials and the current district collector of Ranga Reddy, who granted permission for setting up of the STP, are continuing with the construction.

"The Water Board has illegally encroached on Lingamkunta and is constructing the STP on the tank bed and the full tank level of the water body. We have made several requests to remove all the encroachments and restore the water body to its original shape and size," said Kasireddy Bhaskareddy, chairman, Joint Council of Chandanagar Colonies Welfare Association.

The case was tabled at the AP Lokayukta and the investigation officer had confirmed in his report that the construction was being carried out on the tank bed.

Krishna Rao, executive engineer, lakes and parks division, HMDA, however, said that the STP was being constructed to clean the lake's water.

The Times of India, Delhi dated February 18, 2014

Sunny side up for solar power firms

TEAM TOI

The four 500-MW solar power plants announced in the interim budget indicate the government's statement of faith in renewable energy as well as solar power's growing viability due to declining tariffs.

Such large-scale plants, to be constructed through 2014-15, will come as a boon for domestic solar panel manufacturers such as Moser Baer due to the government's recent adoption of the mandatory DCR (domestic content requirement) policy.

"By adopting DCR for these four projects, government will give a boost to local solar manufacturing industry and spur investment. What this means is that solar industry in India is at the cusp of turnaround and ready to grow well beyond 20,000MW by 2022," Moser Baer chairman Deepak Puri said.

Growth of solar power sector, under the leadership of renewable energy minister Farooq Abdullah, is one of the unsung success stories of the UPA-2 government. The four solar plants will further boost the Jawaharlal Nehru National Solar Mission of creating 20,000MW of grid-connected solar power by 2022. India at present has over 10,000MW of solar power capacity.

The Times of India, Delhi dated February 20, 2014

Haryana's killer idea for greens

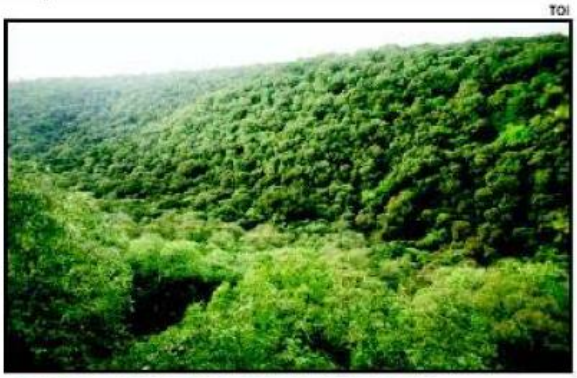
Proposes To Scrap Green Zones & Relocate Them Elsewhere

Dipak Kumar Dash | TNN

New Delhi: Haryana has a bizarre and logic-defying formula to balance urban development and environment protection in NCR. The state government has proposed that some of the nature conservation zones, which are critical for sustainability, could be scrapped in "urbanizable" areas and relocated somewhere else.

This sub-regional plan will be placed before NCR Planning Board (NCRPB) on Thursday. But some members of the planning committee received details of the plan late Wednesday afternoon.

Nature conservation zones include most part of the Aravalis, riverbeds and areas surrounding other major water bodies. The proposal may prove to be a disaster for NCR since only the state government can decide which areas are urbanizable. "This is a ridiculous provision. How can you finish a conservation zone in one area and identify another somewhere else? It's not like compensatory forestation," said Chetan Agrawal, an environmental analyst.



TOI

IF CLEARED, MOVE TO HIT ENVIRONMENT BADLY

Haryana has already prepared the draft plan for Mangar region, proposing a mega tourism complex in the area that has a sacred forest. "Once this proposal is cleared, they can make an eco-sensitive zone an urbanizable area. Hope some members object to this proposal," said Tykee Malhotra, who has also been fighting for saving Aravalis.

Sources told TOI that another provision in the proposed plan suggests giving a free hand to the government for any land use in agriculture zone in "controlled/ development/ regulated areas". It says that "any other use" can be allowed in these areas as "approved by the town and country planning department as per the policy parameter decided by the government".

Haryana government officials said that this is not the final plan and changes could be made if the planning committee suggests amendments. "We will also put our case in the meeting. If they still suggest changes we will incorporate them and put the final draft before the empowered committee, which has the power to approve sub-regional plan," an official told TOI.

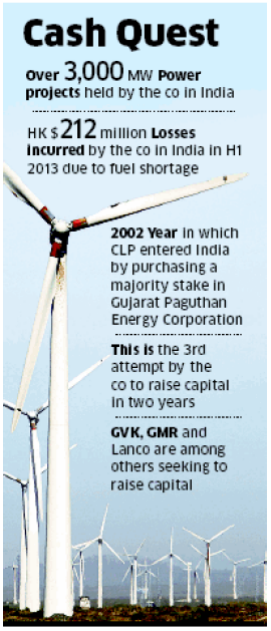
Times View

Allowing conservation zones to be developed by mandating that land for the purpose may be given elsewhere makes no sense. Where these zones ought to be is not something that we can arbitrarily determine, it is determined by natural factors. This is not a zoo that can be shifted from one location to another at man's convenience. It is sad that short-term real estate considerations are allowed to trump long-term ecological sustainability is such a cavalier manner. Better sense should prevail and this move must be prevented from becoming a decision.

The Economic Times, Delhi dated February 21, 2014

CLP Wind Makes Fresh Attempt to Raise up to ₹1,200 Crore from PEs

Hong Kong power co's India arm appoints Standard Chartered Bank to look for private equity investors



SNEHA SHAH
MUMBAI

India's biggest wind utility firm, CLP Wind Farms, plans to sell a minority stake to global private equity investors to raise up to ₹1,200 crore to fund expansion, two people with direct knowledge of the development said. The company, a unit of Hong Kong-listed power generator CLP Holdings, has appointed Standard Chartered Bank to scout for investors, these people said. This is third attempt by the company to raise capital in two years. The earlier attempts were not successful as the company did not agree to the valuation offered by PE funds.

"The company is now seeking to raise between $150 million and $200 million from PE investors and is in talks with global funds," an investment banker with knowledge of the development said. "The stake offered will range from significant minority to a majority." An email to CLP India's managing director Rajiv Ranjan Mishra did not elicit any response.

CLP Wind Farms owns more than 3,000 mw of power projects in the country. It generates 1,000 mw of wind power.

Founded by Hong Kong billionaire Michael Kadoorie, CLP entered India in 2002 by purchasing a majority stake in Gujarat Paguthan Energy Corporation, making it one of the biggest foreign direct investments in the country and the biggest in the wind power sector. In October, CLP said it will raise money by selling bonds in the global market. It received approval from key lenders such as Standard Chartered Bank, IDBI Bank and IDFC to consider its debt ratings on a pooled financing basis for its wind assets.

Pooled financing takes into account the total revenues of the different assets that the company owns rather than on an asset-by-asset basis, which also cuts down the risk of performance variations between individual farm assets of the firm. "The fund raise will be to cash out a part of the equity for the next phase of growth," said Hemant Dharnidharka, research head at Bangalore-based credit research firm SJS Markets. "PE funds will be interested if they see cash flow visibility."

The challenge for wind farm business is to have continuous fiscal support and an assured price from state governments to developers, he added.

CLP owns a 655 mw gas-fired power plant at Baruch in Gujarat, one of the largest independent power projects to have been set up in India following the government's 1992 policy of allowing foreign investment in power generation. It also runs 1,320 mw supercritical coal-fired power project at Jhajjar in Haryana. CLP is now exploring power generation opportunities in hydro, solar, and entering power transmission.

In the past, CLP signed an agreement with Suzlon to jointly build a 100.8 mw power plant for ₹600 crore in Rajasthan. It also has a similar arrangement with global wind power generator Gamesa to jointly build a 130 mw power plant in Maharashtra.

Many local power developers are seeking to raise capital as lenders push them to repay loans and existing PE funds seek to exit their investments. GVK, GMR and Lanco are among others seeking to raise capital from PE funds. Lack of fuel linkages after cancellation of coal blocks by the government has hit the Indian power sector. According to an October 2013 CLP report, the company lost HK $212 million in India in the first half of 2013, around 10 times more than it lost the previous year on the back of shortage in fuel supplies leading to lower production in its coal-fired power plant in Haryana.

"Within the set of investors who are still looking at investing in infrastructure in India, they are chasing power and road assets. In power, projects that have been executed well and have adequate coal linkages for thermal power plants and suitable sites for the wind are in demand. However, not every asset will find a taker," said Mayank Rastogi, partner, private equity and transaction advisory services at Ernst & Young India.

The Economic Times, Delhi dated February 21, 2014

India says it's WTO-Compliant on Solar Mission

US giving preference to old technology for exports to India: MEA

DILASHA SETH &
DIPANJAN ROY CHAUDHURY
NEW DELHI

Nearly 10 days after the US filed a dispute against India at WTO over discriminating against its producers in the second phase of the solar mission, India has readied a strong counter against the US for providing export credits to its solar products like thin film panels and preferential treatment for purchase of power produced from US-made solar products in 13 of that country's states. Firmly maintaining that India's solar mission was fully WTO-complaint, Indian government officials pointed out that there were significant concerns over importing 'thin-film technology' for solar panels 'overwhelmingly' from the US.

The US has alleged that in phase II of the Jawaharlal Nehru National Solar Mission (JNNSM), the domestic content requirement was expanded to cover thin film technology, which was exempt from such requirements under phase I, which will likely cause even greater harm to the US producers than under phase 1 as thin film comprised a majority of the solar product exports to India. "One or two of the major US producers of thin films have got export credits from the US government which is encouraging an inflow of older technology into India. Moreover, the cost of products sourced from the US and China are suspiciously lower than the known production cost," a ministry of external affairs official said.

Moreover, there are over a dozen states in the US that have schemes in place to offer preference to purchase of power produced by US-made solar products. "It is India that has a case to file against the US in the WTO on solar energy products instead of the other way round," the official added.

The commerce department is examining the evidence of 13 US states which follow equally restrictive policies on solar power. Thin film panels made from cadmium telluride are environmentally damaging and hence, banned in a few countries and is not even a preferred choice worldwide.

Thin film panels are known to be less efficient in power generation than crystalline technology. Due to the heavy imports from the US, thin film usage in India is estimated to be over 55% of the total installed photovoltaic capacity, against just 10% globally.

US has alleged that the domestic content requirements discriminated against US solar cells and modules by requiring solar power developers participating in phase II to use Indianmanufactured solar cells and modules instead of US or other imported equipment.

However, India counters that claim based on facts. In phase 1 of the solar mission, of the 140 mw capacity generated under batch 1 and 340 mw generated under batch 2, 25 mw and 140 mw of power was produced from US-made modules and cells. "US firms have actually been a major beneficiary of the solar mission," the official pointed out.

Power procurement from all grid-connected solar power projects is carried out by central government agencies, which is subsequently bought by the state distribution companies to sell to consumers. "There is no level of subsidy offered in selling power to the distribution companies, so basically the procurement is for government use, which is fully WTO compliant," the official added. India has not signed the government procurement agreement of the WTO.

In India, there is no local sourcing requirement for any power purchased by the state government, the official maintained. "Of the 2,180 megawatts of solar plants commissioned in India, about 1519 mw worth of energy comes from the state government schemes."

The department of commerce is currently examining the consultation document and preparing a reply. The countries would get 60 days to resolve the matter and if they fail to do that, the US could request the establishment of a WTO dispute settlement panel.

The Times of India, Delhi dated February 21, 2014

100 tonnes of toxic water leak at Fukushima

Tokyo: A new leak of 100 tonnes of highly radioactive water has been discovered at Fukushima, the plant's operator said on Thursday, after it revealed only one of nine thermometres in a crippled reactor was still working.

The toxic water is no longer escaping from a storage tank on the site, said a spokesman for Tokyo Electric Power, adding it was likely contained, but the news is a further blow to the company's already-battered reputation for safety.

It is unlikely that the radioactive water has made its way into the sea, the operator of the tsunami-hit Fukushima nuclear plant said

"As there is no drainage way near the leak, which is in any case far from the ocean, it is unlikely that the water has made its way into the sea," he said.

The tank, one of hundreds at the site that are used to store water contaminated during the process of cooling broken reactors, sits around 700 metres from the shore.

The water it contains is highly radioactive, with a beta radiation reading "at 230 million becquerel per litre," he said.

That contamination level compares with the government limits of 100 becquerels per kg in food and 10 becquerels per litre in drinking water (A becquerel is a unit of radioactivity). AFP

The Times of India, Delhi dated February 22, 2014

Beijing's pollution alert at 2nd highest

Beijing: China's capital Beijing, under fire to take effective measures against air pollution, raised its four-tiered alert system to "orange" for the first time on Friday, as heavy smog was forecast to roll into the city over the next three days.

The orange level, the second highest, advises schools and kindergartens to cancel outside sports classes, but falls short of ordering school to close and keeping government vehicles off the road, provisions which come into force with the "red" level.

The alert was raised after the Beijing government faced criticism from state media and on the Internet for failing to act against high pollution levels last weekend. State news agency Xinhua said that the city had dispatched inspectors to factories around the capital, warning that those found breaching emission rules would be fined. Beijing was already shrouded in white smog by Friday.

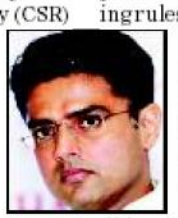
Some residents welcomed the announcement. Others asked why more was not being done. AFP

CSR rules soon, will include 10 major areas

Surojit Gupta | TNN

New Delhi: The government has identified 10 major areas including education, gender equality, environment, national heritage and the Prime minister Relief fund where India Inc can spend to claim credit for the mandatory 2% Corporate Social Responsibility (CSR) expenditure.

Under the new Companies Act, mid and large companies have to spend 2% of their three-year annual average net profit on CSR activities. The government expects a significant step up in spending on CSR projects by companies.



Corporate affairs minister Sachin Pilot had said that the law's essence was self-reporting

The activities which can be included by companies in their CSR policies include: eradicating hunger, poverty, malnutrition and promoting preventive healthcare, promoting sanitation and availability of safe drinking water, promoting education, promoting gender equality, ensuring environmental sustainability, protection of national heritage.

Those spending for the benefit of armed forces veterans, war widows and their dependents would be eligible to cover the expenses under CSR spending rules.

Under gender equality activities related to empowering women, setting up homes and hostels for women and orphans, setting up old age homes, day-care centres and similar facilities for senior citizens and projects on reducing inequalities faced by socially and economically backward groups have been included.

Spending on training to promote rural and nationally recognized para-olympic and Olympic sports would also qualify for credit under the CSR rules. Rural development projects and contributions or funds to technology incubators located within academic institutions and approved by the government would also be approved under this category.

Officials said they expect the rules to be notified soon, maybe within a few days, after the law ministry approves the list. The rules were finalized after the corporate affairs ministry examined over one lakh suggestions from various stakeholders.

But a clause which allowed company boards to identify any activity for CSR spending has been questioned by the law ministry which has delayed the notification of the much awaited rules. "They (the law ministry) have some reservations. It is a purely legal issue. They don't have any questions about the substance of the clause," said an official. The law stipulates the Centre to define CSR activities and does not allow further delegation of these powers to a company board.

Heat islands pose serious threat to Delhiites' health

Jayashree Nandi | TNN

New Delhi: Heat islands in the capital — pockets which are significantly warmer than their surroundings — have been linked to localized air pollution, posing a health threat to a significant population.

A study of these localized 'hot spots' — compiled after a controversy over a Delhi-versus-Beijing pollution scare — revealed that vehicular congestion and highly built-up areas causing this phenomenon are also creating worrying levels of pollution here.

▶ 'Pollution varied', P6

Results of the study, prepared by the system of air quality forecasting and research (SAFAR), show that at some locations in the city, the temperature is 3 to 4 degrees higher than the immediate surroundings. These zones are prone to higher incidence of fine particulate matter, or PM 2.5, that tends to get lodged in lungs and causes respiratory problems.

According to Gufran Beig, director of SAFAR, "UHI doesn't just cause a rise in temperature but also explains high pollution levels in certain parts of Delhi."

He explained, "If the ground-level temperature is high then fine particulate matter can remain suspended and does not escape. Increased emissions of volatile organic compounds from vehicle exhaust increase ground-level ozone. Emissions of oxides of nitrogen (NOx) are also higher in these places."

HOT SPOTS

Urban heat island (UHI) refers to a metropolitan area significantly warmer than its surroundings. Temp rise in these pockets ranges from 3-4 degrees Celsius

Locations	Popn*
Yamuna Sports Complex	2.7
Indira Gandhi Sports Complex	2.3
DU	2.4
Thyagaraj stadium	1.6
CWG Village	1.4
Talkatora stadium	0.8

*in lakh/2km radius

The Times of India, Delhi dated February 23, 2014

The Times of India, Delhi dated February 23, 2014

'Air pollution varied within short distances'

▶Continued from P1

Though official statistics had refuted the adverse comparison with Beijing, the ministry of earth sciences had sought a report on local spikes in pollution levels.

The Safar project, conducted by a team from the Indian Institute of Tropical Meteorology (IITM) led by Dr Dilip Chate, studied a noticeable variability in level of air pollution within short distances in Delhi that seems linked to large-scale changes in land use. They have been collating temperature data for the UHI study since end of 2011.

With vehicle numbers, associated with large amount of "anthropogenic heat", giving rise to urban heat islands (UHIs), the project examined data from Safar's automatic weather network and different landscape types in Delhi.

The Safar project studied a noticeable variability in level of air pollution within short distances in Delhi that seems linked to large-scale changes in land use

Winds speeds and population data were collated and integrated with temperature gradients to arrive at UHIs. Safar selected 11 automatic weather stations in Delhi along with populations that fall within the impact radius of 2 km of these areas of high heat zones and found a fairly clear link between heavily built up areas, high population density and vehicular congestion.

UHIs are linked to traffic congestions and large main roads as can be seen by hot spots like the Thyagaraj Sports Complex, CWG Village, Talkatora sports complexes. Delhi University (DU) is located about 500 m away from a main road.

Author of the study, Dr Chate said the study was mainly taken up to document meteorological changes in UHI but it may be a good indicator for pollution levels too.

"Our preliminary findings show a correlation with air pollution. We have noticed that stations like Indira Gandhi Sports Complex and Delhi University regularly record high air pollution levels. But for this study we are analyzing on UHIs in Delhi," he said.

These islands may have formed both due to heavy vehicular movement near these places and because most of the area is concretized near these locations. The study is in the process of being published in a scientific journal.

The Times of India, Delhi dated February 24, 2014

Construction cap in NCR green zones to be eased

Kamal Nath Okays Revised Regional Plan

Dipak Kumar Dash | TNN

THE STORY SO FAR

- Haryana pushes for **unlimited construction** in green zones. Limit of 0.5% deleted in revised draft plan
- NCR committee **partially turns down Haryana demand,** allows tourism & construction beyond 0.5% **with permission of MOEF**
- At board meeting, **Delhi LG** seeks to ensure that tourism activities don't lead to constructions beyond 0.5%
- **Kamal Nath approves decision** after LG's point is put on record

New Delhi: Days before the Lok Sabha poll dates are to be announced, the government is likely to notify the revised regional plan for NCR (2021) which allows tourism activities in ecologically sensitive zones and permits constructions in these areas beyond the current 0.5% cap — moves that environmentalists claim will be disastrous for green belts such as the Aravalis.

Top sources said urban development minister Kamal Nath, who chairs the NCR Planning Board, has approved the minutes of the last board meeting in which it was decided to allow tourism activities in nature conservation zones and construction beyond the current limit, albeit with the permission of the Union environment ministry. Multiple sources confirmed the development. The board is likely to hold its next meeting in March and the plan is expected to be notified without delay.

▶Activists worried, P 3

The Times of India, Delhi dated February 24, 2014

Green activists worry rule may be exploited

▸Continued from P1

Before giving his assent to a plan that permits increased construction in NCR's fragile activity nature conservation zones (NCZ), urban development minister Kamal Nath had sent back the minutes of the meeting to NCR Planning Board secretariat, asking for all views expressed by members, sources said.

Delhi LG Najeeb Jung had raised questions over increasing the limit on constructions in such zones, saying the move was diluting the principle of protection of these sensitive ecological zones. He had also asked his views to be recorded. "His views have now been recorded. The board's decision will be out by March 7. We feel getting permission for construction beyond 0.5% will be difficult as authorities can't clear such proposals easily" said a government official.

The changes made in the plan are crucial, say green activists. The plan prepared in 2005 said only regional recreational activities — parks, wildlife sanctuaries etc — were allowed in NCZs with a limit of construction not exceeding 0.5% of land and that too with the permission of competent authorities.

The new provision proposes that regional recreational activities be allowed with a limit on construction of 0.5%, except with the approval of the competent authorities under forest and environment laws. With the word 'except' being introduced, green activists feel influential players can get the required permissions, particularly when a state government pushes for it.

In Haryana, each inch of forest, hill and even waterbodies can be bought or sold by individuals as these areas have historically been common land. Haryana had initially pushed for doing away with the construction limit in NCZs. After objections from activists and from NCRPB members, the proposal was killed.

Queen breathing in most polluted air in Britain

Kounteya Sinha | TNN

Reuters

ROYAL MESS: Buckingham Palace is exposed to the highest levels of nitrogen dioxide

London: Britain's monarch is exposed to the worst air pollution in Britain. Days after the European Commission dragged UK to the court over high pollution levels it has been found that the traffic-ridden road that runs alongside the Queen's London home, Buckingham Palace, has the country's highest levels of nitrogen dioxide (NO_2), a toxic gas from traffic fumes.

Eighty-seven-year-old Queen Elizabeth II is living in a place where NO_2 levels were almost four times the European legal limit.

Air pollution causes 29,000 early deaths a year in the UK–more than twice as many per year as were caused by passive smoking before the ban. The World Health Organization has confirmed that air pollution causes cancer. Poor air quality also causes heart attacks and children living near busy roads in the UK have been shown to have underdeveloped lungs. EU said that nitrogen dioxide levels are excessive in many British cities. The UK Supreme Court already declared that air pollution limits are exceeded in 16 zones across the UK.

The areas affected are Greater London, the West Midlands, Greater Manchester, West Yorkshire, Teesside, the Potteries, Hull, Southampton, Glasgow, the East, the South East, the East Midlands, Merseyside, Yorkshire & Humberside, the West Midlands, and the North East. The court also noted that air quality improvement plans estimate that for London compliance with EU standards will only be achieved by 2025, 15 years after the original deadline, and in 2020 for the other 15 zones.

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

The Times of India, Delhi
dated February 24, 2014

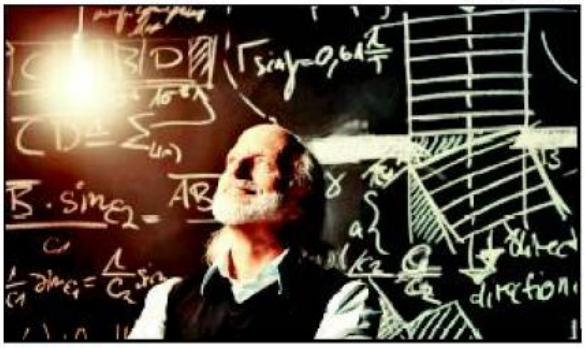
Now, a formula to halve power bills

It Detects Unreliable Systems, Faulty Equipment That Affect Energy Usage

Washington: Scientists have devised a new mathematical formula that can reduce the annual electricity consumption of a building by up to 50%. The formula detects unreliable systems and faulty equipment that affects energy consumption, researchers said.

Li Song from University of Oklahoma and her research colleagues, Gang Wang from University of Miami and Mike Brambley from Pacific Northwest National Laboratory, have invented a method that can significantly reduce building operating costs as well as energy consumption.

Ben Hupfer/Corbis



DO THE MATH

Her applied research has potential to reduce energy consumption in a single structure by as much as 20%. Depending on the building conditions, Song estimates peak savings could be as much as 30 to 50%.

Song's research team devised a mathematical formula using existing output data, such as pump speed and power, to monitor energy use in heating, ventilation and air conditioning units.

Song's formula creates virtual sensors to identify energy waste at the air-handling unit as well as at a whole-building level.

"Waiting until exorbitant utility bills appear may be a sign that the equipment hasn't worked optimally for years," said Song.

"This method allows earlier detection of minor equipment faults, possibly preventing an overhaul of the entire system," Song said. Besides saving companies money on utility bills, Song's formula is a low-cost option to commercial monitors, making it easier for more companies to track energy efficiency.

Song estimates one ultrasonic flow meter, which monitors water pump performance, could cost as much as $5,000, and an organization would need to purchase several monitors to get an accurate picture. AGENCIES

The Times of India, Delhi
dated February 25, 2014

'Close all waste plants in residential areas'

Hazardous Emissions From Mixed Solid Waste Prompts Panel To Seek Countrywide Ban

Jayashree Nandi | TNN

New Delhi: The parliamentary standing committee on urban development has recommended waste incinerator plants be shut in residential areas across the country. In its 27th report, the committee severely criticized the location and use of "mixed solid waste" for such plants. This may come as a morale-booster for several residents in Sukhdev Vihar, New Friends Colony, Maharani Bagh and other areas loacted near the Okhla waste-to-energy plant who have been complaining of pollution.

The committee observed that mixed municipal solid waste has the characteristics of "hazardous waste". "The corporations, Delhi government and central government have shown sheer callousness towards hazardous emissions from municipal incinerators that cause serious health problems to people living not only near them but even those living thousands of kilometres away," says the report.

In its reply, the government has said that Supreme Court had permitted the ministry of new and renewable energy to go ahead with setting up five waste-to-energy projects and that MNRE has already approved these projects, including the one in Delhi, but is yet to assess its viability.

Mohammed Ilyas

The order is a breather, especially for those living in Sukhdev Vihar

The manual on municipal solid waste management and the report on technology advisory group on municipal solid waste indicate that flue gas from waste-to-energy plants will contain a number of pollutants like "carbon monoxide (CO), sulphur dioxide (SO_2) and particulate matter (PM) containing heavy metal compounds and dioxins".

The panel is clearly not pleased with the reply. "The committee feels anguished and dissatisfied with the ministry's reply that the soot in the atmosphere is reported within norms as it is monitored by Delhi Pollution Control Committee", it said in the report.

The committee, however, is not against waste-to-energy incinerators. It has recommended that cities need many more such plants to handle the large volume of organic waste. "Incinerators reduce the volume of original waste by 95-96% depending on the composition and degree of recovery of materials such as metals from the ash of recycling," it has said. The committee has been critical of the fact that not many waste-to-energy and compost plants have been commissioned in India. It noted that these plants need higher capital investment and they are financially viable in developed countries because of the tipping or gate fee charged by the plant for waste disposal.

The report also recommends looking at options for recovering landfill gas. It has given the example of Ghazipur dump site in Delhi where a gas recovery pilot project is being set up.

The Times of India, Delhi
dated February 25, 2014

Multiplexes, parks OK in green zones

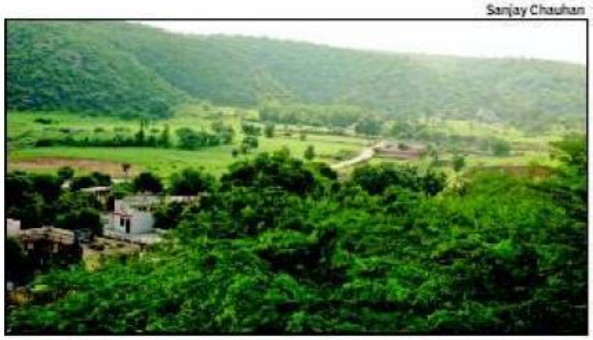
State Govts Can Use Such Areas Commercially After Framing Tourism Policy

Dipak Kumar Dash | TNN

New Delhi: The NCR Planning Board's green light to more construction activities in ecologically fragile zones like the Aravalis not only allows more commercial activities in the name of tourism but also gives state governments virtually a free hand in deciding how they to want to use these areas.

All a state government has to do is frame a tourism policy to use these regions commercially. This emerged from minutes of the meeting circulated among NCRPB members. The minutes mention that the clause "as per state policy" is to be inserted after the words "including tourism" in the list of permitted activities in these regions.

Sanjay Chauhan



GREEN SIGNAL FOR MORE CONSTRUCTION ACTIVITIES

No such activity was permitted earlier. The revised plan was cleared by the board despite serious reservations from some of its members, including Delhi Lt Governor Najeeb Jung.

A circular issued on February 21 says the modifications, including the provision to allow construction beyond 0.5% with prior permission of environment and forest authorities, have been "approved" by the board and the revised regional plan will be notified.

Haryana's tourism policy, which incentivizes mega tourism projects, says 70% of the area will be used for games and rides, 15% for other commercial activities and the remaining 15% for parking and green space. Commercial activities includes building multiplexes, restaurants and accommodation. The policy also allows mega tourism projects to be set up on land ranging from 2.5 to 10 acres.

TOI had earlier reported how both Haryana and the real estate lobby had pushed for tourism activities to be allowed according to a state government's policy in their suggestions to the draft revised plan.

The minutes circulated by the NCRPB secretariat record that Lt Governor Najeeb Jung said the new rules should "strengthen rather than dilute the earlier provision". He had stressed this was essential considering its impact on developments in adjoining areas of Delhi.

But Haryana chief minister Bhupinder Singh Hooda said that the planning committee's recommendation to allow tourism activities and construction beyond 0.5% with conditions "does not dilute the existing provision" and is an "environment safeguard" since specific permissions have to be obtained.

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