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Business Sustainability News

International

CO₂ emissions must be zero by 2070 to prevent climate disaster, UN says

'Negative emissions' are needed globally by second half of century to stave off dangerous climate change, say UN scientists

By Arthur Neslen



Global emissions of CO₂ must fall to zero by 2070 to prevent a 2c rise in temperatures above pre-industrial levels, says Unep report Photograph: Luke Sharrett/Getty Images

what Intergovernmental Panel on Climate Change scientists have described as "severe, widespread and irreversible" effects from climate change.

The Unep report published on Wednesday is based on the idea that the planet has a finite 'carbon budget'. Since emissions surged in the late 19th century, some 1,900 Gigatonnes (Gt) of CO₂ and 1,000 Gt of other greenhouse gases have already been emitted, leaving less than 1,000 Gt of CO₂ left to emit before locking the planet in to dangerous temperature rises of more than 2C above pre-industrial levels.

Jacqueline McGlade, Unep's chief scientist, told the Guardian that scientific uncertainties about the remaining carbon budget had diminished and the real uncertainty now was whether politicians had the will to act.

"The big uncertainty is whether you can put enough policies in place from 2020-2030 - in the critical window - to allow the least-cost pathways [to lower emissions and temperatures] to still stand a chance of being followed," she said. "The uncertainties have shifted from the science to the politics."

All scenarios in the Unep report now require some degree of 'negative CO₂ emissions' in the second half of the century, through technologies such as carbon capture and storage or, possibly, controversial, planetary wide engineering of the climate known as geoengineering. Unep is "extremely interested" in the subject and is planning a report in the months ahead.

"Once you get behind the scaremongering headlines about the schemes that are planetary scale but over which you have no sense of control, there are other geoengineering ideas, going back to the basics of how to manipulate local water bodies and alter, for example, geothermal productivity," McGlade said. "We haven't even started to skim the surface of what we can do and we shouldn't rule out the possibility that some of these geoengineering ideas could be extremely good innovations."

Consideration should also be given to compensatory schemes for investors in fossil fuels companies to address the 'stranded assets' issue, McGlade added.

She acknowledged "donor fatigue" ahead of a pledging conference for the Green Climate Fund tomorrow - which has so far racked up close to \$10bn (£6.4bn) - and called for up to 20% of the final money pot to come from citizen bonds for local environment projects, with the remaining 80% split between public and private sources.

Maroš Šefčovič, the European commission's vice-president for energy union told a Brussels press conference that the report would be of use in preparing bloc positions for next month's Lima climate summit.

"I have never seen such a political momentum to get things done," he said. "We are now at the political critical mass point where political leaders want to succeed with climate change policies, and have a growing resolve to do so." The EU has not, however, supported Unep's call for zero greenhouse gas emissions by 2100.

Christiana Figueres, the United Nations Framework Convention on Climate Change (UNFCCC)'s executive secretary, said: "This important report underscores the reality that at some point in the second half of the century, we need to have achieved climate neutrality - or as some term it zero net or net zero - in terms of overall global emissions."

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Thinking outside the box: unwrapping a massive packaging problem

By Rachel Nuwer and Jennifer Kho, for theguardian.com

As the holiday shopping season kicks off, online purchases - and shipping - are expected to continue to grow. Photograph: Justin Sullivan/Getty Images

As the holiday season approaches, more and more purchases are happening online. Online purchases are projected to grow 20.1% to hit \$1.5tn this year, according to eMarketer. As a result, mail packing is a burgeoning sustainability concern.

Aside from the plastic and cardboard wrapping the products come in, there are the boxes, the labeling and the paper wrapping or foam packing meant to protect what is nestled inside. It's not unusual to end up with far more packaging than stuff, and the sheer amount of waste that results is staggering.

According to the Environmental Protection Agency (pdf), containers and packaging accounted for 30% - or 75.2m tons - of total solid waste generated in the US in 2012. To put that into perspective, we discard our own weight in packaging every 30-40 days, on average, according to Stanford University.

This figure will likely only increase as e-commerce does the same, and the magnitude in dollars reflects the demand: protective packaging represents a \$22bn industry, with plastic foam alone - mostly expanded polystyrene, aka Styrofoam - valued at \$6bn.

A growing number of companies and entrepreneurs are working on new ways to tackle this problem. And they are making progress: more than half of this packaging waste - 51.5% or 38.75m tons - was recovered for recycling or composting in 2012. That's a higher percentage than the 34.5% of total municipal solid waste that ended up recycled or composted, which in itself represented a big increase from the 15.9% recovered in 1990 - and the 6.35% in 1960.

But that still leaves plenty of packaging waste - more than 36m tons - in landfills. One company working to reduce that amount is Waste Management, North America's largest waste and recycling company, which specializes in sustainability services.

Show me the recycling

Waste Management began working with LBP Manufacturing, which supplies single-use food-service packaging, in 2011 to design a new product: a more sustainable single-serve coffee filter.

Single-cup coffee filters, such as Keurig's K-cups, come with some tricky waste challenges: they are small, which makes them harder to recycle; they include coffee grounds, which aren't recyclable; and they're often made of multiple materials, such as plastic or cardboard combined with a foil lid that can be punctured by a coffee machine. Most customers are unlikely to separate each of the pods into their parts, recycling the plastic and foil separately and composting the coffee.

[\[VIDEO\]](#)

From its years of recycling experience, Waste Management certainly had ideas about what designs and materials tend to be more recyclable. But instead of basing its advice on which materials are theoretically recyclable, the company used its own recycling infrastructure to run real-life testing - from consumers to the recycling center - to find out which designs were most likely to end up in the right sortation pile at the end.

In some cases, that meant embedding an RFID tag in a product to see what happened to it and whether the materials ended up in the right place. If they did, Waste Management took the materials to potential buyers to get a more definitive sense of which materials they would buy, and which materials would retain enough value to be worth washing and using again and again.

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IPCC Issues Final Warning on Climate Change

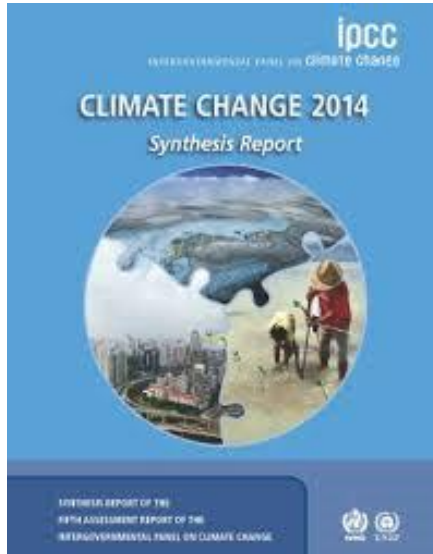
SustainableBusiness.com News

While we mentioned the IPCC's final climate report earlier this week, we'd be remiss if we didn't provide you with more details about it.

The Climate Change 2014 Synthesis Report summarizes the three reports the Intergovernmental Panel on Climate Change (IPCC) issued over the past two years and contains even sterner warnings - if that's possible.

Keep in mind that, as in every report the IPCC has issued, scientists err on the conservative side. Many of the extreme weather events we're seeing today were first predicted to begin in the second half of this century. 800 scientists from across the world contributed to this most comprehensive assessment of climate change ever.

The upshot is, the extreme weather events we've been seeing are nothing - they will get unimaginably worse unless the world responds much more aggressively NOW.



from 30% now (including to hydro) to 80% by 2050.

If greenhouse gas emissions simply continue as they are now, we are "increasing the likelihood of widespread and profound impacts affecting all levels of society and the natural world."

"We have the opportunity, and the choice is in our hands. The solutions are many and allow for continued economic and human development. All we need is the will to change."

At this point, halting emissions isn't enough, we must also take strong adaptation measures to deal with what's already baked into the climate system, they say. The longer this takes, the more it will cost.

But We Can Still Turn This Into An Opportunity

Yes, this is frightening, there's no doubt about it, and while getting to zero emissions may seem impossible, we need to see it as the opportunity that it is.

"Phasing out fossil fuels is about different investment opportunities: the IPCC estimates that annual investment in low-carbon electricity will increase by \$147 billion and investment for energy efficiency in transport, industry and buildings by \$336 billion compared to a business-as-usual scenario from 2010-2029. Zero emissions do not imply zero growth," says Sean Kidney, President of Climate Bonds.

And these technologies are now much more affordable now, with solar and wind able to compete on price with fossil fuels.

"What we need to fund is essentially a shift to green (climate-smart) infrastructure. The good news is that infrastructure investment is nothing new, and while the massive scale and speed of change required is unprecedented, the tools and instruments are well-known and well-proven; from regulation to floor pricing and partial guarantees. All policy makers need to do is pull them out of the bottom drawer and put them to work for the climate," says Kidney.

Unfortunately, that step is the hardest, because every action is a drag-out fight with Republicans, who are now taking over Congress.

"In the starkest terms ever used, the scientific community is looking world leaders directly in the eye and demanding they wake up. To fight global poverty, sustain stable governments and societies, and maintain a livable planet, all findings indicate that we should kick fossil fuels to the curb. The silver lining to the report is that it recognizes clean energy climate solutions are affordable and ready to deploy," says Michael Brune, Executive Director of Sierra Club.

"We do not need any more reports - we need action. We don't have any more time to coddle fossil fuel billionaires or politicians who will eschew responsibility at every corner. That's what the 400,000 people who marched in September demanded and that is what the scientific community is again confirming. The stakes for negotiations in Lima and Paris are now obvious, and the table is set for world leaders to take significant, immediate action to avert catastrophe."

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Closing the loop on steel: what we can learn from a manufacturer in Ecuador

Despite a strong business case for recycling scrap steel, uptake has been low. One company in Ecuador is blazing a trail for steel and the circular economy in Latin America

By Wayne Visser

In the next few decades, as resource scarcity starts to bite, and resource prices steadily climb, mining and metals companies will be forced to shape-shift from primary extractors to secondary recyclers. Necessity, rather than an unexpected attack of conscience, will be the driving force behind this transition to a circular economy. So let's look at some lessons from the sector most ripe for revolution, namely the steel industry.

In 2013, world crude steel production totalled 1.6bn tonnes and employed 50 million people, either directly or indirectly. The industry is vocal in its support for sustainable development, claiming that - despite massive growth in demand - the amount of energy required to produce a tonne of steel has been reduced by 50% in the past 30 years.

A far stronger virtue in its pursuit of sustainability is that steel is 100% recyclable and backed by an impressive business case: more than 1,400kg of iron ore, 740kg of coal, and 120kg of limestone are saved for every tonne of steel scrap made into new steel (because these products are required if steel is produced as raw material). It is puzzling, therefore, that usage of scrap steel in 2013 was still only around 580m tonnes. Why is closing the loop on steel so difficult?

Lessons can be learned from Adelca, an Ecuadorian steel manufacturer that is trying to blaze a trail for the circular economy in Latin America. Ecuador is still a relatively small player, making up about 1% of the Latin American crude steel market, which is dominated by Brazil at 53% and Mexico at 27% (ranked nine and 13 respectively in the world market).

Adelca supplies Ecuador, Venezuela, Colombia, Peru and Chile with a variety of rolled and stretched steel products. Before 2008, Adelca was importing billets (a narrow, generally square, bar of steel) from China and elsewhere, but after analysing the economic and environmental benefits, the company decided to invest in an electric arc furnace (EAF) and start recycling metal scrap in order to make products for the construction sector.

The first part of Adelca's sustainable technology solution was to install the EAF, thus allowing it to make its own steel billets from recycled scrap steel. According to Isabel Meza, head of integrated management at Adelca, by importing fewer billets, they are saving \$12m (£7.6m) on the 20,000 tonnes of steel they produce every month. Apart from using fewer mineral resources, each tonne of recycled steel uses 40% less water, 75% less energy and generates 1.28 tonnes less solid waste than steel from raw materials. There is also an 86% reduction in air emissions and a 76% reduction in water pollution.

The second part of Adelca's sustainable technology solution was to help to stimulate and organise the metals recycling sector in Ecuador, since it does not have enough supply of scrap metal to meet its own steel production demand. Today, Adelca's Recyclers Network generates about 4,000 jobs (direct and indirect), with income exceeding \$1m (£637,000) a month. Also, the steelworks, scrap iron preparation process, transportation system and complementary services generate more than 1,500 direct jobs for 50 small companies. Although Adelca still imports \$80m (£51m) a year in raw materials, it estimates it contributes \$120m (£76.5m) a year to the national economy just from the avoided imports.

The third part of Adelca's sustainable technology solution was to install a bio-digester that turns the company's organic waste into methane gas for community use, as well as to generate fertiliser for local crops. Although the financial savings are not big at about \$35 (£22) a day in energy savings for the community and \$100 (£63) in waste disposal costs for the company, there is a significant payoff in terms of "social license to operate", ie improved community relations.

Lessons learned

1. Financial returns

The EAF technology was bought from the US and funded by taking a substantial mortgage from the bank. Commercially, the scale of the investment represented a significant risk, but the expected financial returns from the technology allowed the company to take this risk. Environmental benefits alone would not have sufficed.

2. Community education

Adelca lost eight months in delayed production due to community resistance to the EAF. The community feared that the heat, power and radiation from the furnace would endanger the health of the community, and that its heavy electricity demands would negatively affect the community's own supply. Despite being unfounded, these fears required a substantial and expensive education effort to gain a social license to operate.

3. Supplier relations

Since Adelca's demand for scrap metals is greater than the supply - and recycled scrap costs less than imported billets - the company has invested in building up its network of recyclers, including donating metal cutting equipment, offering loans, providing and paying for training and promising the best price for the scrap metals provided.

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Climate change is disrupting flower pollination, research shows

New research reveals that rising temperatures are causing bees to fly before flowers have bloomed, making pollination less likely

By Damian Carrington

Sexual deceit, pressed flowers and Victorian bee collectors are combined in new scientific research which demonstrates for the first time that climate change threatens flower pollination, which underpins much of the world's food production.

The work used museum records stretching back to 1848 to show that the early spider orchid and the miner bee on which it depends for reproduction have become increasingly out of sync as spring temperatures rise due to global warming.



The early spider orchid and miner bee, that depend on each other for reproduction, have become increasingly out of sync as spring temperatures rise, research has shown. Photograph: Friedhelm Adam/Getty Images

example, supported by long-term data, of the potential for climate change to disrupt critical [pollination] relationships between species."

Three-quarters of all food crops rely on pollination, and bees and other pollinators have already suffered heavily in recent decades from disease, pesticide use and the widespread loss of the flowery habitats on which they feed. In the UK alone, the free fertilisation provided by pollinators is estimated to be worth £430m a year to farmers.

Professor Anthony Davy, also at UEA and part of the research team, said: "There will be progressive disruption of pollination systems with climatic warming, which could lead to the breakdown of co-evolved interactions between species."

Scientists have already identified a few timing mismatches caused by global warming between species and their prey. Oak tree buds are eaten by winter moths, whose caterpillars are in turn fed by great tits to their chicks, but the synchronicity of all these events has been disrupted.

Suspected mismatches have occurred between sea birds and fish, such as puffins and herring and guillemots and sand eels. The red admiral butterfly and the stinging nettle, one of its host plants, are also getting out of sync.

The new study focused on the early spider orchid *Ophrys sphegodes*, found in southern England, and the solitary miner bee species *Andrena nigroaenea* because they have a very close relationship. Other plants can be pollinated by many insects and other insects can pollinate many plants, making it very hard to determine the effect of changing temperatures.

Another challenge is that the temperature effects can be subtle, meaning data has to be collected over a long period. Robbirt and her colleagues realised that the natural history museums in London and Oxford and Kew Gardens had dated specimens of both the orchid and the bee stretching back to 1848.

Analysing all the data, and checking it against recent surveys, revealed that the orchid flowers six days earlier for every 1C increase in spring temperatures. But the effect on the male miner bee was greater, as it emerged nine days earlier.

The female miner bees, which usually emerge later than the male, emerged 15 days earlier. The latter effect meant the male bees were less likely to visit the orchid flowers for pseudocopulation. "The orchids are likely to be outcompeted by the real thing," said Robbirt.

The UK government published its national pollinator strategy on Tuesday. It was welcomed by the pesticide trade body, the Crop Protection Association and the National Farmers Union. But Joan Walley MP, chair of parliament's Environmental Audit Committee, said: "I am disappointed the government seems stubbornly determined to keep open the possibility of challenging the EU ban on neonicotinoid pesticides, which have been linked to pollinator declines."



The solitary miner bee is affected more by rising temperatures than the early spider orchid that it pollinates. Photograph: Oxford University

The orchid resembles a female miner bee and exudes the same sex pheromone to seduce the male bee into "pseudocopulation" with the flower, an act which also achieves pollination. The orchids have evolved to flower at the same time as the bee emerges.

But while rising temperatures cause both the orchid and the bee to flower or fly earlier in the spring, the bees are affected much more, which leads to a mismatch.

"We have shown that plants and their pollinators show different responses to climate change and that warming will widen the timeline between bees and flowers emerging," said Dr Karen Robbirt, at the Royal Botanic Gardens, Kew and the University of East Anglia (UEA). "If replicated in less specific systems, this could have severe implications for crop productivity."

She said the research, published in *Current Biology* on Thursday, is "the first clear

Tips:

Our lifestyle has changed considerably in last few decades, for ensuring purity, hygiene, convenience we buy packaged food articles and this packaging forms trash. The trash is increasing at a very great pace and now the condition is such that the Prime Minister of India had to give call for Clean India campaign. As soon as we get out of our home we find disposable cups, wrappers, cigarette butts, empty cartons, used napkins and many more such articles thrown hither and thither. This goes to landfill or burnt by municipal staff, in both the cases damaging the environment and our health. So we must do something concrete and stop this. Less trash more cleanliness, so to reduce trash here are some useful suggestions that can help us.

1. Purchase articles without packaging wherever possible and reduce trash.
2. If packaging can be reused try to remove packaging material safely so that it can be used.
3. Christmas and New Year is approaching and obviously we greet our friends and relatives, from now onwards greet them online or on phone instead sending cards. If you wish to send card make them yourself from using waste materials, this will have much better impact.
4. On special occasions we decorate our homes with lights like Diwali, Christmas, and Guru Nanak Birthday. For this purpose consider purchasing more energy efficient LEDs. They have longer life so trash will be reduced and energy consumption will be reduced up to 70%.
5. Use tap water for drinking where safe water is available and have a reusable water bottle.
6. Reuse single-side used paper for printing or making notepads held by a metal clip, reuse junk mail response envelopes.
7. While going for picnic or outings take reusable plastic plates, tumblers, cups and spoons instead of disposables.
8. Plan your meals and prepare accordingly. Thus reduce wastage of food by not letting it stale.
9. Also make sure to promptly refrigerate leftovers you bring home so they don't end up as waste.
10. Instead using small sachets of shampoo, hair oil, paste etc buy larger packs. Thus you will save in cost as well as the quantity of item is also saved which otherwise would have gone waste.
11. Don't discard clothing that can be used or household items. Either sell it or donate the articles to charitable organizations. Worn clothing and other textiles can also be used as rags and dusters.
12. Give old magazines and books to nursing homes, charities, schools, hospitals, etc.
13. Equipments those are not used regularly can be borrowed or taken on rent.
14. Buy razors that are reusable by replacing blades it's beyond imagination how much waste these disposable or use and throw razors form.
15. Now days most of the newspapers are available online, so instead buying hard copy of newspapers one can subscribe for online editions.
16. We can increase the life of our shoes and clothing by taking proper care and repair them.
17. Share video games, movies among your group or rent them from video library rather than going for outright purchasing.
18. While buying items don't consider the price only also look for the durability of the product.
19. Ask to email your utility bills instead of hard copy.
20. If possible make online payment of utility bills.

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How to get people into the EV driver's seat

By Amon Rappaport



The sleek Tesla Roadster

National Drive Electric Week in September.

Like you, perhaps, my curiosity comes from both the personal and professional parts of my life: Living in the suburbs of San Diego, I drive to work, missing the days I commuted on the Bay Area's B.A.R.T., and want to swap my fossil-fueled car for one that can save money and the environment. I also do this stuff for a living. I started my career using social marketing techniques to change individual behavior on health and environmental issues. As head of brand purpose at i.d.e.a., I now help our clients, including an auto industry responsibility group, move people, products and culture in a way that's good for business and good for the world.

With that perspective in mind, here's what I think it will take to move the needle on mass adoption of electric vehicles:

1. Deliver an authentic value proposition to 'innovator' consumers

If you look at electric vehicle advertising and promotion today, it's all over the map when it comes to consumer messaging. Some car companies emphasize environmentalism, with one ad for the Mitsubishi i-MiEV going as far as challenging the reader: "We hear a lot about protecting the environment these days. But what are you doing about it?"

Others take what I'll call the "hybrid bandwagon effect," leveraging that segment's familiarity to make electric vehicle adoption seem like a step, not a leap. "Think of it as two cars in one: hybrid and electric," said Bill Payne, electric vehicles sales manager of Kearny Pearson Ford, as we got into the Ford Fusion Energi plug-in hybrid for a test drive. Or, your family can have both: "Hybrid for me ... plug in for you," suggests an ad for the Ford C-MAX, which comes in both options, showing two of the cars parked in front of a hip, urban loft.

Another approach takes head-on the often diagnosed "range anxiety" that prevents potential buyers from going electric. By emphasizing technology advances and charging availability, these messages make electric vehicles seem like a breeze, or at least not an inconvenience. "Plugs into your life," shouts the headline of one Honda ad featuring the Accord plug-in.

Finally, there's the "innovator" angle. "Be a pioneer," urges a Blink charging station ad, with the body copy wisely recognizing, "Being first has its challenges and its rewards." This kind of messaging speaks to folks like Luke Day, a soldier and father of 2-year-old girl, who explained why he and his wife bought — and love — the futuristic looking BMWi: "It's kind of dorky! It pumps up my geek cred."



John Zayne and Luke Day discuss the virtues of the futuristic BMWi.

The real win-win comes when the consumer's truth and the brand's truth are aligned. We advise our brand partners to get crystal clear on their authentic value proposition, which is much more than the traditional unique selling proposition found in lots of marketing-speak. It's not enough to emphasize what's different — you need to find and articulate your true purpose. And these days, people expect a brand's purpose to be about making a difference, not just making money.

While your brand purpose should remain constant, electric vehicle marketers will need to change their message for different audiences, and as we move along different stages of the technology adoption curve, from the innovators, to the early adopters, to the early majority and beyond. Less than 1 percent of cars in the U.S. are electric vehicles, which means that it's "innovators" who are buying electric vehicles. For now, the best marketing messages should be geared for these cutting-edge consumers.

2. It's more important for salespeople to be smart than cool

One of the biggest obstacles to electric vehicle adoption is salespeople. As one study from UC Davis notes, salespeople are not well informed about electric vehicles, creating a huge chasm between consumer expectations and the reality of buying an electric vehicle. Or in other words, the result is lots of people who are unhappy with the electric vehicle buying experience — even more than your average car shopper.

As Payne, the Ford salesman, described the likely interaction: "You have a consumer coming in, they've been online, they've researched it. Now they walk into a dealership and they have a salesperson in front of them that's like a deer in the headlights." (Payne, it seems, is the exception: He's stayed up on the latest electric vehicle info for all four years he's been selling them.)

And if you're smart, you don't have to be

cool — as some of the salespeople at Electric Vehicle Day were trying to be. In fact, like good brand ambassadors, many of them looked like the cars they were selling, with messaging to match. The BMWi sales team was dressed with German efficiency in matching polo shirts, though the "BMW Genius" stitched on the backs read "We're trying to be cool like Apple" to me.

"It's a mindset," said John Zayne of BMW of San Diego, describing the motivations of the eco-conscious customers who are drawn to the BMWi.

The guy talking up the bright blue Fiat 500e, Brent Oani of Bob Baker Fiat, had a swarthy complexion and thoughtful outfit to match the car's Italian styling: skinny black jeans, white shirt and shiny brown leather shoes, with a hat and aviator glasses that Brad Pitt might wear. "It's a lifestyle. It's hip to be green," said Oani, who could equally have been talking about his customers and himself.

The Tesla team also conveyed the cool factor and exclusivity of the Model S with their no test-drives policy — the only car there that day with a "You can look but you can't drive" message.

And Payne, the Ford salesman? Well, let's just say he fit with a Midwestern car company: straightforward and no frills.

3. Happy customers are the best salespeople

Word-of-mouth marketing is important for anyone trying to move a product or service. But it's especially important with the still-novel electric vehicles, because the innovators driving them around can be the best salespeople. I saw this happening at EV day: Luke Day was eagerly talking up the BMWi to folks checking it out. But when he later moved to the Fiat booth so his wife could try the 500e, Day continued to be a BMW brand ambassador, telling would-be Fiat customers why he loved his BMWi.

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Ford to install wind and solar energy at dealerships

By James Murray



Courtesy of Ford Motor Company

Auto giant Ford announced innovative new plans this week that could see its dealers across the country become renewable energy hubs.

The company has entered into partnership with Wind Energy Corporation, which will see the renewable energy developer deploy solar panels and vertical axis wind "sails" at four Ford dealerships as part of a pilot program.

Around \$750,000 is scheduled to be invested in the project, which will see Wind Energy Corporation install its so-called "Windy System," combining wind sail technology with a 7 kW solar array at each site.

The company said each installation is expected to provide around 20,000 kWh of clean electricity a year, equivalent to that needed to power two average-sized U.S. homes or recharge Ford's new Focus Electric 870 times. According to Wind Energy Corporation's calculations, the system will offset 14 tons of greenhouse gases a year.

Ford said the clean energy generated onsite would be used to power the buildings, electric vehicle charging stations and lighting systems at the four dealers in New York, Michigan and California.

It also confirmed the vertical axis wind sails will feature the Ford logo, highlighting the company's commitment to renewable energy.

"We are pleased to be working with Wind Energy Corporation to offer a pioneering, clean energy option to Ford dealers," said John Felice, vice president for U.S. marketing, sales and service at the auto giant, in a statement. "This is yet another innovative tool to help Ford and its dealers address a global sustainability challenge."

Work on the installations is scheduled to start early next year, with Wind Energy Corporation predicting the project will be completed by spring.

[<Source>](#)

Lightning strikes will increase due to climate change

By Suzanne Goldenberg, for theguardian.com



A lightning storm in Denver, Colorado. New research has found global warming could result in 50% more lightning strikes by the end of the century. Photograph: Roger Hill/Barcroft USA

Lightning will strike far more frequently in a world under climate change – but researchers can still not predict exactly where or when those strikes will occur.

New research from the University of California, Berkeley, published on Thursday in the journal *Science*, found warming conditions would result in 50% more lightning strikes by the end of the century.

“For every two lightning strikes you had at the

beginning of the century, we will have three at the end of the century,” said David Roms, a researcher at the University of California, Berkeley.

Researchers have known for some time that climate change was producing more lightning strikes, and fatalities in developing countries have been rising in recent years. But the latest findings put a number on that rate of increase, using data from federal government scientific agencies.

The scientists found lightning strikes would increase by about 12% for every 1C of warming, resulting in about 50% more strikes by 2100.

At this point, however, the scientists are unable to predict where or when those strikes will occur. In the continental US, lightning strikes are especially common in the mid-west and the Tampa Bay area of Florida, so-called lightning alley.

“What we don’t know is where those increases will occur in the future,” Roms said. “It could be regions that get a lot of lightning strikes today will get even more in the future, or it could be that parts of the country that get very little lightning could get much in the future. We just don’t know at this point.”

The findings provide further evidence that climate change is having far greater effects on weather patterns than initially anticipated.

A few dozen people are killed in the US each year because of lightning strikes, with 25 so far this year, according to the National Weather Service.

Lightning strikes are also a leading cause of wildfires – and have been responsible in the past for some of the most devastating blazes in the south-west. The deadliest wildfire in 20 years, which killed 19 hotshot firefighters near Yarnell, Arizona, was caused by a lightning strike last year.

The researchers used data from federal government agencies to establish the connection between warming temperatures, more energetic storms, and increased lightning strikes, and combined the findings with 11 climate models.

[Video: Watch a year’s worth of lightning strikes in the US](#)

[<Source>](#)

Mercedes’ Crazy New SUV Has A Paint Job That Generates Electricity From Wind And Sun

Source Name: Wonderful Engineering

Say hello to the new Mercedes-Benz concept car which runs on hydrogen. You all must be wondering what is so special about a car that thrives on hydrogen. The answer lies in the fact that the paint job of this awesome car also harvests energy. The Vision G-Code SUV has a ‘multi-voltaic silver’ paint that is capable of harvesting wind and solar energy. Mercedes Vision G-Code SUV – Most Energy Efficient Car3

Mercedes says that the multi-voltaic paint works similar to ‘a giant solar cell with excellent efficiency’ that recovers solar energy and then relays it into the car’s internal system. Apart from this awesome approach, it can also charge itself electrostatically by using the relativity of the wind during times when the car is driven or when wind blows onto the stationary car. The G-Code also has a ‘Power on the Move’ suspension that is capable of recovering energy from the suspension’s motion in order to generate electricity. Mercedes Vision G-Code SUV – Most Energy Efficient Car2

The G-Code comes with 3 driving modes termed as maximum efficiency, maximum driving comfort and sports performance. Based on the mode selected, the car can be driven by rear wheels in a variable all-wheel setup. This is made possible by the digital prop shaft (Mercedes’ own), located between the front and rear axles.

It has LED headlights and an LED strip at the rear and is composed of indicators, brake lights and taillights. The grille, based on the car’s mode, is illuminated with colored lights. As for the interior, the steering wheel is foldable and the pedals are retractable. The steering wheel is activated via a smartphone app and the HUD displays information. The car has a number of monitoring systems; 3D cameras, radar, infrared scanner and GPS. Mercedes Vision G-Code SUV – Most Energy Efficient Car5

The seats of the car are capable of monitoring its users’ health. They are also equipped with a massage function along with built-in cooling and heating systems. Passengers enjoy an air conditioning system that cleans the air upon entry. In the luggage compartment, two electric scooters are placed for commuting, once the car has been parked. The G-Code was shown off at the Mercedes Product Engineering Center opening in Beijing.

[<Source>](#)

Geoengineering could prevent climate effects caused by giant volcanic eruptions

By Damian Carrington, for theguardian.com



Ash clouds around Mount Pinatubo in the Philippines. If a giant volcanic eruption occurred the amount of sulphur particles could dim the sun for several years, as happened with Mount Tambora in Indonesia in 1815. Photograph: Alberto Garcia/Corbis

The perpetual winters that follow giant volcanic eruptions could be avoided by shooting greenhouse gases into the atmosphere, according to new scientific research.

Deliberately interfering with the climate on a planetary scale, known as geoengineering, has until now been focused on counteracting global warming. One key geoengineering concept is to inject sulphur particles into the stratosphere to block sunlight and cool temperatures. But the likelihood of unexpected worldwide side effects have made geoengineering a very controversial idea.

Major volcanic eruptions naturally pump huge clouds of sulphur particles into the atmosphere and the giant eruption of Mount Tambora in Indonesia in 1815 dimmed the sun for several years around the world, leading to crop failures. Now, for the first time, scientists have analysed the idea of geoengineering to combat eruptions.

The work, published in *Geophysical Research Letters*, uses computer modelling and concludes it could be possible to counteract the climate effects of a Tambora-scale volcanic eruption by deliberately emitting greenhouse gases.

The researchers suggest a specific HFC gas could be used, as it only remains in the atmosphere for a few years, the same timescale as the volcanic sulphur. Also, HFC-152a does not destroy ozone, unlike its chemical cousins.

However, Professor Keith Shine, at the University of Reading and one of the research team, said: “We estimate that large quantities would be needed. This would be very expensive, and would require a vastly expanded industrial production capacity. Society would have to decide whether the risks associated with such a large volcanic eruption could ever justify this expense.”

The scientists calculate 1.25bn tonnes of HFC-152a would be needed in the first year. Today, just 150,000 tonnes of the most common related gas, HFC-1234a, are released each year.

“Considering such drastic action may appear far-fetched,” said Dr Jan Fuglestad, at the Center for International Climate and Environmental Research in Norway, and another member of the research team. “But it would be unwise for the scientific community and policymakers not to think the issue through. Future, large volcanic eruptions are inevitable.”

The study acknowledges “numerous practical, financial, scientific, philosophical and ethical issues.”

Other climatologists cautiously welcomed the research. “The possibility of deliberate intervention to ‘engineer’ our climate is undoubtedly scary, but climate change causes problems for both people and ecosystems, especially if it is large and rapid and whether it is warming or cooling,” said Prof John Shepherd, at the University of Southampton. “We need to be prepared, so far as possible, and explorations like this are desirable, even if some people find them distasteful.”

Prof Piers Forster, at the University of Leeds, said: “This is a great paper as it changes the perspective on geoengineering and as such reminds us what a ridiculous idea trying some technological fix to counter carbon dioxide could be.”

The enormous HFC injection into the atmosphere would keep temperatures from plummeting by trapping heat via the greenhouse effect. “Unfortunately this wouldn’t help with the major impact of large volcanoes on ecosystems which is changes in sunlight,” said Prof Peter Cox at the University of Exeter.

[<Source>](#)

Companies take note: Consumers trust climate change warnings

By Tove Malmqvist



Shutterstock

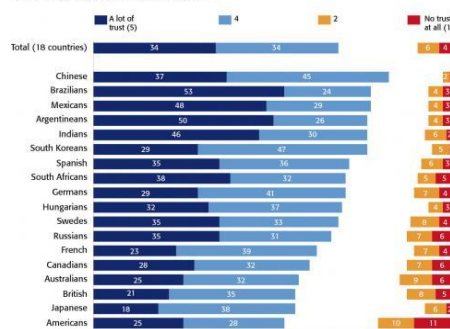
unequivocal and increasingly likely to result in permanent damage.

Specifically, the IPCC warned, "[C]ontinued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems."

Scientists may have expected this for years, but consumers are also getting the message. As many as 68 percent of consumers in 18 countries on five continents surveyed for National Geographic and GlobeScan's Greendex study of sustainable consumer behavior and attitudes say that they trust scientists' claims that the world's climate is changing because of human activities.

Very few respondents — only one in 10 — distrust scientists' claims about human-induced climate change. People in the Anglo-Saxon countries (primarily the United States), as well as Japan and India, tend to be more skeptical and help pull down the global average.

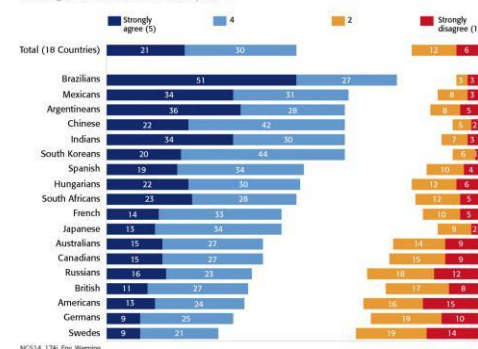
Trust in Science: World's Climate Is Changing Because of Human Activities
Percentage of Consumers in Each Country, 2014



The white space in this chart represents "3" and "DK/NA."

Americans and Northern Europeans — perhaps spared more often from the direct effects of climate change, as well as other pollution — are less likely to worry about the effect that global warming may have on their own lives. How long that might be the case, however, is less clear. The study also showed that concern about climate change has increased between 2012 and 2014 in the U.S., as well as in countries such as Britain, Germany and Sweden.

Global Warming Will Worsen My Way of Life within My Own Lifetime
Percentage of Consumers in Each Country, 2014



NSG14.196,5m_Warming
The white space in this chart represents "3" (on a scale of 1 to 5 where 1 means "Strongly disagree" and 5 means "Strongly agree") and "DK/NA."

As GlobeScan's Radar public opinion research in 24 countries clearly shows, scientists are far more trusted to act in the best interest of society than business, governments or NGOs. Companies that want to get serious about climate change should perhaps start taking a more science-based approach on the issue by endorsing the IPCC's findings.

There also could be an element of timeliness for such action in the run-up to the U.N.'s 21st Conference of the Parties on Climate Change (COP-21) set for 2015 in Paris. Companies could benefit from presenting themselves as more evidence-driven and open to collaboration with scientific institutions to help address the climate challenge.

<Source>

Consumers offered cash for old gadgets in new recycling scheme

By Rebecca Smithers, for theguardian.com

Consumers will be urged to trade in their unwanted electrical gadgets at retailers in return for cash — with the products to be refurbished and resold — as part of a national initiative unveiled on Tuesday, November 18.

The government-backed plan to improve the disposal of electric waste is supported by 51 companies and organisations including Samsung, Dell, Sky, B&Q, and the owner of Argos and Homebase.

UK householders are estimated to be hoarding at least £1bn worth of electrical and electronic equipment in their homes which are no longer used but which still hold significant value, with the UK market value for trading pre-owned equipment potentially worth up to £3bn.

Encouraging the trade-in of used TVs alone could grow UK GDP by over £750m per year by 2020, said government waste advisory body, Wrap. The plan's signatories represent 66% of the UK's TV sales.

Wrap research has revealed that two-thirds of consumers would be happy to trade back their unwanted electrical items, while more than half (55%) said they would buy the used quality goods from a reputable brand or retailer.

Dr Liz Goodwin, chief executive officer of Wrap, said: "We are working with organisations to establish how to make best use of products and services to deliver economic and customer benefits. By sharing insights and best practice expertise through [the Electrical and Electronic Equipment Sustainability Action Plan] esap and other platforms, Wrap believes business models such as trade-in services will be a reality in the next three to five years."

The actions of the 51 signatories to esap include: implementing new business models such as take-back and resale; extending product durability; and gaining greater value from reuse and recycling.

<Source>



UK householders are estimated to be hoarding at least £1bn worth of electrical and electronic equipment in their homes which are no longer used but which still hold significant value. Photograph: Bernhard Classen/Alamy

Obama Leans In On Climate Change Again, Pledging \$3 Billion for Green Climate Fund

SustainableBusiness.com News

This week, President Obama took aim at the two biggest barriers to an international climate change treaty next year in Paris.

First, the US-China agreement on climate change - which shows the two biggest polluters are at the table - and now, a substantial US commitment to the all-important **Green Climate Fund** - the main issue for developing countries.

Obama plans to unveil a \$3 billion pledge to the Green Climate Fund at the G20 summit this weekend, to be paid over the next four years. The US contribution is conditional however - it's capped at 30% of the fund, and the full amount will only be paid if other nations step up to the plate - meeting the fund's initial \$10 billion target.

Good luck getting approval for the money from Republicans in Congress, even though President GW Bush pledged \$2 billion during his administration.

The Fund is intended to help developing countries ramp clean energy technologies, stop deforestation, and adapt to changes in the climate that they are not responsible for. The goal is to provide \$100 billion a year to developing countries by 2020.

Contributions have been anemic so far, the biggest are \$1 billion each from France and Germany. Japan is expected to pledge \$1.5 billion at the G20 summit. Canada and Australia - which have turned into climate outliers - say they won't contribute, with the latter's prime minister calling it "socialism masquerading as environmentalism."

On November 20, there will be a "pledging conference" in Berlin, when the UK says it will make an announcement. The United Nations wants to raise \$10 billion by the end of the year.

Berlin "is a good litmus test for Lima, because finance is really half of the equation to getting a climate deal," Karen Orenstein, a senior analyst at Friends of the Earth, told *InsideClimate News*. "It's like dominoes. This is the first domino, and in order to get everything to fall in the right place, you have to start here."

She is referring to the next Climate Summit in Peru, which takes place in December, as a run-up to the finale in Paris next year.

"It is in our national interest to help vulnerable countries to build resilience to climate change," says a White House official. "More resilient communities are less likely to descend into instability or conflict in the aftermath of extreme climate events, needing more costly interventions to restore stability and rebuild. Building resilience also helps safeguard our investments in many areas, including food security, health, education and economic growth."

Earlier this year, [30 countries pledged a total of \\$4 billion to help developing countries](#) tackle a broad range of environmental problems: climate change, deforestation, land degradation, extinction of species, toxic chemicals and waste, and threats to oceans and freshwater resources.

<Source>

Peru's forests store more CO₂ than US emits in a year, research shows

Carbon mapping by the Carnegie Institute for Science reveals nearly seven billion tonnes of carbon stored in Peru's rainforests, in a technique that could help preserve such stores to reduce carbon emissions

By Dan Collins, [theguardian.com](#)



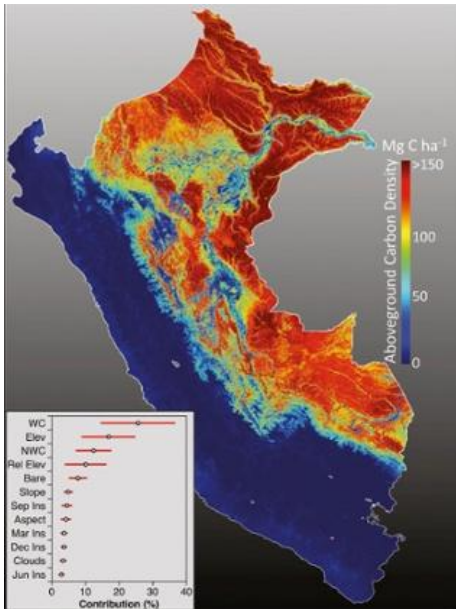
Peru's rainforests have been accurately carbon mapped by the Carnegie Institute for Science. Photograph: Enrique Castro-Mendivil/Reuters

Peru, the host for December's UN climate change summit, stores nearly seven billion metric tons of carbon stocks, mostly in its Amazon rainforest. That's more than US annual carbon emissions for 2013 which were calculated at 5.38 billion tons, the new research by the Carnegie Institute for Science (CIS) shows.

Home to the second-largest area of Amazon rainforest after Brazil, Peru is to date the most accurately carbon-mapped country in history thanks to high-resolution mapping which provides a hectare-by-hectare look at its carbon reserves, it was reported in the Proceedings of the National Academy of Sciences (PNAS).

The research by CIS's Greg Asner means Peru now knows precisely how much carbon it is storing in its rainforest and where that carbon is being kept out of the atmosphere, allowing the country to negotiate a fair price for its reserves on the global carbon market.

"We found that nearly a billion metric tons of above-ground carbon stocks in Peru are at imminent risk of emission into the atmosphere due to land uses such as fossil fuel oil exploration, cattle ranching, oil palm plantations and gold mining," Asner told the Guardian.



Amazon forest in Peru Photograph: DR

on a bigger scale," said Manuel Pulgar-Vidal, Peru's environment minister, whose ministry supported the Carnegie Institution in creating the map.

"Our government is also studying carbon stocks in the soil, and is doing a forest inventory, and we have a forest investment program. These initiatives will better prepare us to face changes in land use."

Measuring 69 million hectares, Peru's Amazon covers more than 60% of the country. But deforestation, agriculture and land-use change account for 61% of Peru's carbon emissions.

Tropical forests convert more carbon from the atmosphere into biomass than any other terrestrial ecosystem on Earth. Currently tropical deforestation and forest degradation account for about 10% of the world's carbon emissions annually.

This new mapping approach is scalable to any tropical country, said researchers.

[<Source>](#)

Regreening program to restore one-sixth of Ethiopia's land

Tree and shrub-planting program has transformed degraded and deforested land across Africa, with Ethiopia planning to restore a further 15m hectares by 2030

By John Vidal



Bale Mountains, Ethiopia: Trees and shrubs can be seen growing on the steeper slopes along a ravine that was once plagued by erosion. Photograph: Aaron Minnick/WRI

Fifteen years ago the villages around Abrha Weatsbha in northern Ethiopia were on the point of being abandoned. The hillsides were barren, the communities, plagued by floods and droughts, needed constant food aid, and the soil was being washed away.

Today, Abrha Weatsbha in the Tigray region is unrecognisable and an environmental catastrophe has been averted following the planting of many millions of tree and bush seedlings. Wells that were dry have been recharged, the soil is in better shape, fruit trees grow in the valleys and the hillsides are green again.

The "regreening" of the area, achieved in just a few years for little cost by farming communities working together to close off large areas to animals, save water and replant trees, is now to be replicated across one sixth of Ethiopia – an area the size of England and Wales. The most ambitious attempt yet to reduce soil erosion, increase food security and adapt to climate change is expected to vastly increase the amount of food grown in one of the most drought- and famine-prone areas of the world.

"Large areas of Ethiopia and the Sahel were devastated by successive droughts and overgrazing by animals in the 1960s and 1970s," says Chris Reij, a researcher with the World Resources Institute in Washington.

"There was a significant drop in rainfall, people had to extend the land they cultivated and this led to massive destruction and an environmental crisis across the Sahel. But the experience of Tigray, where over 224,000 hectares of land has now been restored shows that recovery of vegetation in dryland areas can be very fast. Tigray is now much more food secure than it was 10 years ago. You really see the changes there," he says.

Rather than just plant trees, which is notoriously unreliable and expensive in dry land areas, the farmers have turned to "agro-ecology", a way to combine crops and trees on the same pieces of land.

[A trailer for a new documentary by film-maker Mark Dodd on the land restoration project in Tigray.](#)

In Tigray it has involved communities building miles of terraces and low walls, or bunds, to hold back rainwater from slopes, the closure of large areas of bare land to allow natural regeneration of trees and vegetation, and the widespread planting of seedlings.

"The scale of restoration of degraded land in Tigray is possibly unmatched anywhere else in the world. The people ... may have moved more earth and stone [in recent years] to reshape the surface of their land than the Egyptians during thousands of years to build the pyramids," says Reij.

"In the early 1990s every able-bodied villager in Tigray had to contribute three months of labour to dig pits to save water, or to construct terraces and bunds to stop water rushing off the hills. This was reduced later to 40 days a year and currently it is 20 days a year.

"Several hundred thousand hectares are now under 'enclosures' - degraded areas in which no cutting and grazing is permitted. This allows the natural regeneration of vegetation. Tens of thousands of kilometres of rock bunds and terraces have been constructed, often on steep slopes," he added.

Ethiopia's pledge to restore a further 15m hectares of degraded land was the largest of many made at the end of UN secretary general Ban Ki-moon's New York climate summit last month, where governments, companies and civil society groups together agreed to try to restore 350m hectares of deforested landscapes - an area the size of India - by 2030.

[<ReadMore>](#)

The low-hanging fruit for climate protection is rotting

By John Mandyck



Shutterstock/ Girts Pavlins/

So much of the food produced globally is wasted, and the environmental impact of that waste and spoilage is so great, that we could have a material impact on climate change by committing to reduce it. As hard as it is to imagine, this is one aspect of global warming that is actually beyond the controversy that has kept this debate from moving forward.

What does food spoilage and waste have to do with climate change?

The United Nations estimates that one-third of all food produced never reaches our tables. Other studies suggest that food loss could be closer to 40 or 50 percent.

But even at the U.N.'s estimate, food loss represents 3.3 billion metric tons of CO2 each year. That's the energy needed to produce the food: the gasoline for farm tractors, electricity to run irrigation pumps, power to process and package harvests, etc. Under current practices around the world, this food ends up in garbage dumps rather than being eaten, while all of the CO2 that went into producing it ends up in our atmosphere.

In other words, the low-hanging fruit (and meat, fish, poultry, vegetables and more) is being allowed to rot rather than making its way to our plates.

Extraordinary opportunities

It's hard to imagine a more inefficient system, especially when it comes to the critical role of feeding our planet. If all that inefficiency was measured in terms of what nations do, food loss would be the third largest emitter of greenhouse gasses, just behind China and the United States.

This situation presents an extraordinary opportunity. Food loss is a significant contributor to global warming but much can be done to reduce it without having to invent new technologies.

Avoiding food loss also has the obvious immediate benefit of feeding more people. One in eight people today is malnourished. Reducing food loss not only will feed more people, it can be an essential strategy to nourish the more than 2 billion people we'll add to the Earth by 2050.

It's also practical and logical. We won't be able to simply grow more food and then throw 30 to 40 percent away. We already use 38 percent of our ice-free land (compared to just 2 percent for cities) and 70 percent of all fresh water to grow our food. We can't afford to expand that environmental footprint to feed more people, and instead should implement the readily available strategies to avoid food loss and feed our growing population.

[<ReadMore>](#)

New battery can triple driving range of electric cars

Source Name: On Cars

A new inexpensive battery that can triple the driving range of electric cars while significantly lowering their cost could reach the market in just over a year, scientists say. New battery can triple driving range of electric cars

The lithium battery, hailed by experts as a game-changing "killer app" for the global car market, can also double the running life of a Smartphone or a laptop, said Dr Qichao Hu, who developed the device.

Mr. Hu worked on the device with Professor Donald Sadoway, a battery expert at the Massachusetts Institute of Technology (MIT). Prof. Sadoway said its impact on the cost and performance of an electric car could prove transformational, 'Financial Times' reported.

Batteries in existing electric cars can account for as much as 30 per cent of the cost. They also need temperature control systems to stop them from overheating or catching fire. The new battery operates safely at a wide range of temperatures, which should save costs, said Hu.

The battery itself will be about 20 per cent cheaper than existing ones. Independent experts in the US recently confirmed prototype cells in the battery can store more than twice as much energy as conventional cells, the report said.

The main difference between the new battery and existing ones is that it has an ultra-thin metal anode with higher energy density than the graphite and silicon anodes in current batteries, and uses safer electrolyte material.

Mr. Hu hopes the battery will be in production for consumer electronics in the first half of 2016 and in electric cars by the second half of that year.

With so many new innovations in the hybrid automotive sector & major players like Tesla, the future of hybrid automobiles sure seems to be purple.

[<Source>](#)

Two thirds of world's largest companies exposed to serious water risks

By Cate Lamb, for theguardian.com



São Paulo. Brazil has experienced the worst drought in 80 years. Photograph: DircinhaSW/Getty Images/Flickr RF

São Paulo is the wealthiest state in Brazil. It is the pulsating heartbeat of the Brazilian economy. The state's capital of the same name is a major driver of commercial activity. A megacity and home to 20 million people, it was at one point the largest industrial city in the southern hemisphere. How then, can such an important metropolis find itself on the verge of running out of water?

Brazil has experienced its driest period since records began, the worst drought in 80 years. São Paulo city's population has also set records: for the 20 years from 1950, it was among the fastest growing. Today it's still increasing. The resultant demand for water and the dependency and pressure on the Cantareira reservoir – the system that serves the city – has contributed to an official crisis. The huge basin is nearly dry, having dropped to below 10% of its capacity and São Paulo finds itself locked in difficult negotiations with neighbouring states that also rely on the Cantareira.

More established economies too are becoming acutely aware of the wide-ranging impacts that worsening water security can bring. Travel up from Latin America to California and you witness a severe drought now in its third year. It has cost billions of dollars, wrought havoc with the agriculture industry and caused discomfort for residents.

There are health implications too, some of which go further than the basic need of water for sanitation. California has spent decades working to create cleaner air but its progress is hindered by the heat and extreme drought, which have worsened smog levels.

Like many, the residents of towns across California and São Paulo held the misguided belief that a natural supply of water is limitless. The reality is that water can no longer be treated as a free raw material of never-ending supply. While we're able to find alternative sources of fuel to reduce our reliance on depleting reserves of oil, there is no alternative when it comes to water. Astute businesses understand this already and are moving to manage the related business implications.

For example, use of household goods can account for over 90% of domestic water use, such as by washing dishes, mopping the floor, cleaning hair, skin and clothes. Unilever has disclosed to its investors through CDP's water program that the sales growth of its products is at risk because consumers experiencing water scarcity in developing countries are making trade-offs about which household tasks will get their scarce ration of water.

In fact, as detailed in CDP's new global water report, two thirds of the world's largest companies tell us that they are exposed to water risks, some of which have potential to limit growth. The news comes amid mounting shareholder concern around water scarcity, accessibility, poor water quality and the potential implications for their portfolio investments.

Given almost half of the 853 risks reported by 174 companies to CDP – such as closure of operations and decrease in shareholder value – are expected to impact now or in the next three years, companies could quickly find themselves at a competitive disadvantage.

Although corporate risk assessments of water are falling short, there is evidence of progress on key indicators of water risk monitoring and management. What's more, smart companies are benefitting from innovating in response to water scarcity, poor or declining water quality and competition for and ease of access to water resources. IT and telecommunications company Cisco is using less water having made a change to a soldering practice. As a result it is saving \$1m a year. Fellow IT business Infosys will save \$3.1m over eight years having cut its water consumption by a third in comparison to 2010.

[<ReadMore>](#)

U.S.-China deal will avert 640 billion tons of CO₂ pollution

By Ellie Johnston



Shutterstock Mario Tarello

This article first appeared at Climate Interactive.

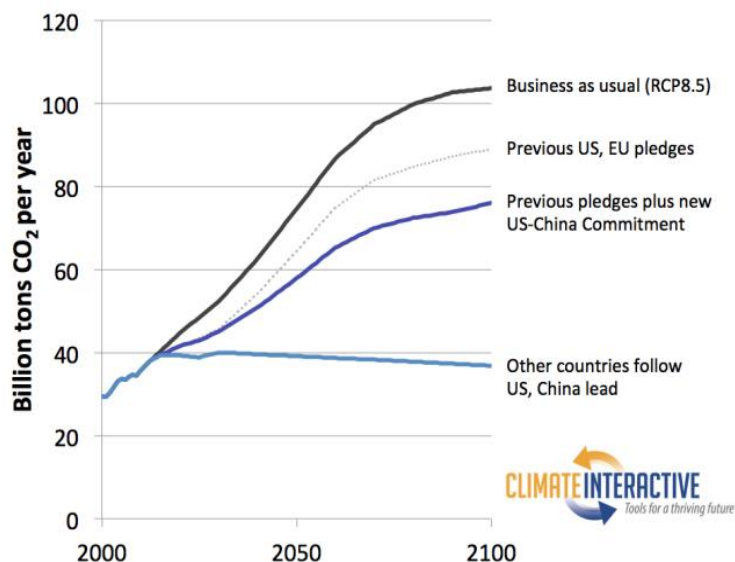
Today the world's attention is turning to the announcement of new climate commitments by the U.S. and China. Using our global climate simulation C-ROADS, we have calculated the impact of the new commitments on the climate.

We estimate that the new commitments by the U.S. and China would, if fully implemented, keep 640 gigatons of CO₂ from being emitted into the atmosphere.

The total of 640 gigatons is greater than all global fossil fuel emissions from 1990-2013.

And, as a thought experiment, if all developing countries were to cap emissions in 2030 consistent with China's proposal and all developed countries were to take the same reduction action as the U.S., then 2,500 gigatons of CO₂ would not be emitted into the atmosphere.

Global CO₂ Emissions



Climate Interactive • C-ROADS simulation • November 12, 2014

Here are the specific scenarios we compared, shown in the graph:

- Business as Usual (RCP 8.5):** A high-growth "business as usual" scenario created for the latest IPCC report.
- Previous U.S., EU Pledges. U.S. and EU Copenhagen Commitment plus recent EU commitment:** A scenario in which the U.S. and EU meets their Copenhagen commitments and the EU meets its recent additional commitment (40 percent below 1990 by 2030) and the rest of the world follows the RCP 8.5 scenario.
- Previous pledges plus new U.S.-China Commitment. U.S. and EU Copenhagen Commitment plus recent EU plus new U.S. and China commitment:** A scenario that includes all the assumptions of No. 2, plus the U.S. and China meet the commitments announced Nov. 11, 2014 (China peaking CO₂ emissions in 2030 and U.S. reaching 27 percent below 2005 levels by 2025).

4. Other countries follow U.S., China lead: A scenario in which all developed countries (as defined in C-ROADS simulation documentation, and not including the EU, which follows its new pledge) reduce emissions 27 percent below 2005 levels by 2025 and all developing countries (similarly defined) peak emissions by 2030.

	2100 Values			
	Relative to RCP8.5		Relative to Copenhagen commitment by US and EU, plus recent deal by EU	
	Gtans CO ₂ Avoided	Temp °C Decrease	Gtans CO ₂ Avoided	Temp °C Decrease
Copenhagen commitment by US and EU	842	0.25		
Copenhagen commitment by US and EU, plus recent deal by EU	908	0.27		
Copenhagen commitment by US and EU, plus recent deal by EU plus new deal of US and China	1547	0.46	639	0.19
All Follow	3402	1.08	2493	0.81

Anticipated temperature decreases would be 0.19 degrees Celsius from the new U.S. and China commitments and 0.81 degrees Celsius if the other countries followed. Reasons for the relatively modest contributions include:

- No additional commitments nor reductions post 2030
- No inclusion in our calculations of LULUCF CO₂ emissions nor other gases such as methane, nitrous oxide and the F-gases

In addition to their impact on tons of emissions this century, the new commitments have other important impacts.

These new commitments could enable more ambitious commitments by other parties

Analysis from the world's top energy and climate experts has shown again and again that transitioning to clean energy and making large reductions in future greenhouse gas emissions is technically feasible. (See for example: the IPCC [PDF](#), the International Energy Agency and UNEP [PDF](#)). Hundreds of people around the world have discovered this fact for themselves using Climate Interactive's World Energy Exercise. To date, capturing this potential has been limited by the political will of the world's nations to take decisive action. While the new commitments do not, on their own, secure a livable climate for future generations, they could encourage more ambition in other countries. If this happens, the impacts of these new commitments could reach far beyond 640 gigatons of direct emissions reductions.

These new commitments will drive prices of renewables and efficiency downward for everyone

To achieve their pledges, the economies of China and the U.S. will have to make large investments in energy efficiency and renewable energy. Such investments pay a double dividend — not only do they reduce emissions, but they also make it more feasible for others to reduce emissions in the future. For example, as more units of photovoltaic energy or more wind turbines are manufactured and installed, the process becomes cheaper, putting wind and solar within reach for more households and businesses. And, in today's interconnected global economy, progress in these large economies will diffuse throughout the world.

Immediate and local benefits

Beyond the long-term and global benefits to the climate, the citizens of China and the U.S. will experience some immediate local benefits from the actions that will be taken to meet the new climate commitments. Fewer people will die or be injured in the process of extracting, refining and transporting fossil fuels, and less ancillary pollution of water and ecosystems will occur. The air of cities and around power plants will be cleaner, and respiratory ailments and associated health care and productivity costs will decline. Recent studies (for example, a global study by the World Bank and ClimateWorks and a U.S. study by the Harvard School of Public Health) have documented the fact that serious action on climate change could save billions of dollars and millions of lives around the world.

Important caveats:

In this analysis, in order to quickly offer some sense of perspective about the importance of the new climate commitments, our team had to simplify the complicated global political economic and energy system to create some useful scenarios.

Here are a few simplifications we made:

- Future emissions are held constant. For each commitment we assumed there would be no further policy change after the target year. For example, we held China's emissions constant at 2030 levels. Were China to reduce emissions after 2030, this would result in even more avoided emissions.
- We don't account for some interconnections in the climate energy system. For example, reductions in emissions likely will mean reductions in aerosols that are also products of burning fossil fuels, and some of these emissions have a cooling effect on the climate.
- We didn't include any changes in non-CO₂ greenhouse gases or land-use emissions, yet those changes most likely would come along with serious commitments to act on climate.
- In the "all follow" scenario we didn't include the Copenhagen pledges of parties other than the U.S. and EU. Because of this simplification the "all follow" scenario counts some amount of reductions that already have been pledged, making this estimate a slight over-counting.

[<Source>](#)

Living Breakwaters Wins 2014 Buckminster Fuller Challenge Award

SustainableBusiness.com News

This year's Buckminster Fuller Challenge award goes to a group whose work on climate change resilience reflects one of Bucky's mottos: "Don't fight forces, use them."

Considered the highest award for socially responsible design, the \$100,000 in cash recognizes the Living Breakwaters project submitted by NY-based SCAPE/ LANDSCAPE ARCHITECTURE PLLC.

The project is moving forward with a \$60 million grant from the NY State Sandy Recovery aid package approved by Congress. It is one of three selected by the Department of Housing and Urban Development (HUD) Rebuild by Design contest - a competition held after Superstorm Sandy.

"This is a unique, first-of-its kind project that promises to reduce wave action by several feet," says Councilman Vincent Ignizio. "Had we had it before Sandy, it would have significantly lessened the damage that we sustained."

"We're planting oyster beds off Staten Island. Just think of it: Oyster beds," says Governor Cuomo. "We spent decades devastating the oyster beds. Now we're going back and rebuilding oyster beds because they were Mother Nature's intelligence of a natural barrier."

While many concepts being developed to protect coastal communities from rising seas and storm surges revolve around restoring wetlands and natural barriers, SCAPE goes a step further by also incorporating the social dimension - creating stewardship communities that value nature, and bringing back traditional livelihoods that support the human economy/nature connection, such as fishing.

"We are also taking advantage of the opportunity to inform and educate our residents, especially our young people, about the importance of our natural areas and assets," says David Sorkin, co-chair of the Staten Island NY Rising Community Reconstruction Committee.

Rather than moving people away from the sea - separating them from nature by levees or walls - it creates new social spaces and cultural opportunities on the waterfront.



"This year's Challenge winners deeply know that doing a physical intervention off the coastline would not be enough to create systemic change. Living Breakwaters is a project based in connections - the leadership team brings their deep expertise in technology and ecological science into the social dimension onshore in partnership with the community itself," says SarahSkenazy, Program Manager of the annual Buckminster Fuller Challenge.

The project focuses on the south shore of Staten Island - one of the most damaged communities by Superstorm Sandy - but applies to coastal areas generally. It's being piloted in Tottenville, Staten Island to document ecological benefits, wave reduction impacts, and economic and recreational potential, as well as to restore the devastated Tottenville community now.

"Fuller was optimistic about the future of humanity and deeply believed in cooperation as the way forward. As climate change impacts threaten shoreline populations, Living Breakwaters hopefully represents a paradigm shift in how we collectively address climate risks, by focusing on regenerating waterfront communities and social systems, and enhancing threatened ecosystems," says Kate Orff of SCAPE.

It combines these concepts:

a necklace of layered ecologically-engineered breakwaters a quarter-mile offshore are made from concrete to greatly attenuate wave action, create habitat for fish nurseries and calm water for recreation;

"reef streets" are pockets of complex habitats within the breakwaters that strengthen biodiversity by hosting finfish, shellfish, and lobsters; oysters filter water and strengthen the breakwaters;

nurturing and resuscitation of fisheries and historic livelihoods;

deep community engagement that educates generations of shoreline stewards;

Water hubs connect people to the water and encourage water-based activities: bathrooms, water fountains, kayaks, gathering spaces and labs, restaurants, and nature observation decks;

working with state and federal agencies to incorporate these multi-layered, systemic approaches into infrastructure planning.

Ecosystems in Staten Island's Raritan Bay have been hanging on by a thread because of expanding urbanization patterns and increasing population density, overwhelming estuaries with treated wastewater and fertilizers. Restoring them is a win for all concerned.

In 2012, the federal government spent more on disaster cleanup related to extreme weather events - about \$100 billion - than it did on transportation or education. Creative resiliency plans can go a long way toward reducing taxpayer burden while creating new economic models for cities and communities that are vulnerable to rising waters due to the effects of climate change.

Similar efforts are taking off in the Midwest to prevent flooding.

Read our articles, Mayor Bloomberg's Prescient Climate Plan for NYC Released and Creative Resiliency Plan Transforms New Orleans Into City of Canals, Like Amsterdam.

Previous Buckminster Fuller Challenge awards have gone to the Living Building Challenge and Operation Hope.

[<Source>](#)

Reinventing the wheel: new tech turns regular bikes into hybrids – and a traffic tool

The Copenhagen Wheel turns bicycles into electric hybrids, able to multiply pedal power, track your heart rate and monitor potholes. But at \$800, it costs more than a bike

By Elisabeth Braw



Reinventing the wheel: smart bikes, if widely adopted, could change the way we think about urban transportation.
Photograph: John Giles/PA

In the past decade or so, bicycles have taken western cities by storm. London has introduced both bike-sharing and bike lanes, and Paris even has a bike-sharing programme for children. In Copenhagen, ever the bicycle champion, 41% of rides to work and education now take place on bicycle seats. But what if you're not super fit, don't want to arrive at work sweaty, or

if you simply live far from your job? A new hybrid "e-bike" promises to fix that dilemma.

To be precise, the Copenhagen Wheel is not truly an e-bike at all. It's a wheel that can be attached to a regular bike. That wheel, equipped with a motor, batteries, sensors and wireless connectivity, transforms the bike into a smart bike that multiplies pedal power and even measures the rider's heart rate and monitors potholes. "The experience is very natural," claims Assaf Biderman, associate director of MIT's SENSEable City Lab, which developed the Copenhagen Wheel, and CEO of Superpedestrian, the startup that makes the wheel. "You can essentially ride as far as you like."

The MIT team came up with the idea behind the Copenhagen Wheel not because they were looking to improve bikes but because they were trying to solve an urgent problem: traffic in the world's fast-growing cities. "The car is not going to go away," explains Biderman. "We realised that the bike is the best solution if we allow it to become more like a car." Indeed, the MIT team worked with a range of cities in developing solutions for urban infrastructure, but decided that this concept – developed in conjunction with Copenhagen city planners – had the most obvious consumer-market potential.

The Copenhagen Wheel, which can be pre-ordered online and will go on the market later this year, adds a smart twist to the traditional e-bike: power assist; brakes that store energy; and algorithms that help the bike understand when the rider pedals harder, allowing the wheel to push with more power.

New York-based company FlyKly makes a similar wheel, the Smart Wheel, available for pre-order since October. "The smart thing is the most interesting aspect about these bikes," says Esben Alsund-Lanthén, a research analyst at Danish sustainability think tank Sustainia. "Copenhagen isn't hilly, but it's windy. The smart aspect makes biking much more convenient. And cyclists in hilly cities like San Francisco can really benefit from it."

Granted, when the traditional e-bike was developed, such bells and whistles were simply not possible. Digital technology, Biderman says, has come to the aid of urban transportation: "Thanks to digital devices, there's a feedback loop between us and the environment around us. We asked ourselves: 'how can we use that feedback loop to help improve the urban environment?'"

SENSEable City Lab's answer is to use the same sensors that measure the rider's activity to also survey the environment around them. If used on a large scale, and assuming riders give their consent, such data showing both urban traffic activity and road passages in need of repair can be collected and evaluated by city planners. The humble bike, in other words, stands to become an important piece of urban infrastructure.

That, Biderman says, makes the Copenhagen Wheel especially useful for cities such as Lagos, Nigeria, or Nairobi, Kenya, that until now haven't closely monitored their traffic patterns. He predicts the Copenhagen Wheel could become the transportation equivalent of the mobile phone in developing countries: "They leapfrogged the west in going straight to mobile phones, skipping landlines altogether. The same thing could happen in urban mobility, with people opting for the Copenhagen Wheel rather than taking the traditional first step of buying a car."

Smart bikes may, if widely adopted, also change the way we think about urban transportation, turning it from a utilitarian process that's often a waste of time into an activity with wellness potential – without the sweaty office arrival. In Copenhagen, Alsund-Lanthén notes, city agencies already use e-bikes as a way of getting staff around the city faster while helping them get healthier.

There's only one thing: where to park the wheel? The Copenhagen Wheel and FlyKly's Smart Wheel aren't cheap, at \$799 and \$800 (£505), respectively. Although they can be locked electronically, Alsund-Lanthén also advises "locking it to something really solid".

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Inside Paul Hawken's audacious plan to 'drawdown' climate change

By Joel Makower



Today, at the Greenbuild conference in New Orleans, entrepreneur and author Paul Hawken will publicly unveil a project, more than a year in the works, aimed at reducing greenhouse gas concentration in the atmosphere.

You read that right: to reduce, not just stabilize, atmospheric CO₂ and other gases, in order to reverse rising global temperatures.

Project Drawdown, as it is named, will produce a book in 2016, detailing the costs and benefits of scores of climate solutions, from light bulb technology to livestock techniques to literacy for teenage girls. For each, Hawken and his team will "do the numbers," providing detailed, science-based data and econometric models showing how each plays out, based on current technology and how it will likely evolve over the project's 30-year horizon.

"The book is not a plan," Hawken explained to me recently. "It is not a proposal. It is a reflection back to the world what we are doing and know how to do right this second."

A meaningful dent

The project grew out of Hawken's frustration with actionable, scalable solutions that would make a meaningful dent in the atmosphere's growing accumulation of greenhouse gases. The solutions that had been proffered over the years were all seemingly out of reach — ungodly amounts of solar and wind energy that would be required, for example, or the mass adoption of futuristic, unproven technologies.

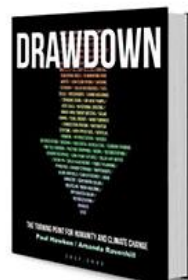
"It made me feel like this is intractable, that it requires such Promethean work by such mammoth institutions, with policy changes that are more than structural," he recalled. "It made me feel like it wasn't possible to address climate change, rather than giving me hope."

When the activist Bill McKibben wrote the seminal article, "Global Warming's Terrifying New Math," in Rolling Stone in 2012, Hawken asked, "Why aren't we doing the math on the solutions? Somebody should come up with a list and see what it requires so you get to drawdown."

The idea of "drawdown" — actually reducing greenhouse gas concentrations so that global temperatures drop — hasn't been part of the conversation, at least among the United Nations crowd, climate activists or cleantech companies. Most focus on the seemingly pragmatic goal of stabilizing greenhouse gases at some level, expressed in parts per million, or ppm, that would be tolerable — or at least not catastrophic, from economic, environmental and social perspectives.

"The book is not a plan. It is not a proposal. It is a reflection back to the world what we are doing and know how to do right this second."

— Paul Hawken



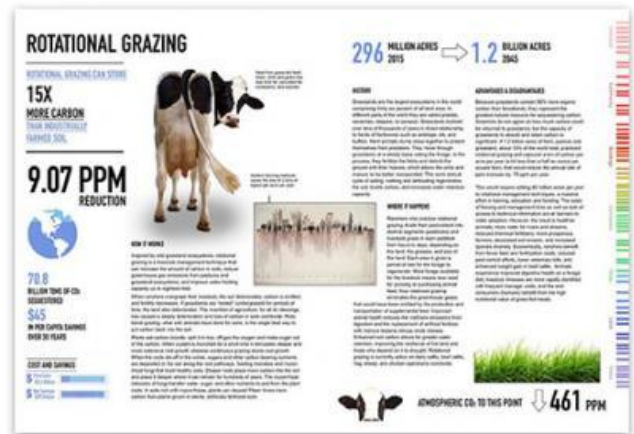
Hawken thought differently. "There's no such thing as stabilization at 450 or 550 ppm," he said. "That's not stabilized. That's volatile. I felt that the goal should be drawdown, which is a year-to-year reduction of carbon from the upper atmosphere, period."

Last year, Hawken began teaching at the Presidio Graduate School, alongside climate activist and entrepreneur Amanda Joy Ravenhill. "One day we were just riffing, and we started talking about drawdown and said, 'Let's do it. No one else is doing it,'" Hawken recounted. Today, Ravenhill is Project Drawdown's executive director and, with Hawken, the book's co-editor. The two have recruited more than 80 advisors, partners, scientists, government agencies and participating universities, along with more than 200 graduate students.

Doing the numbers

Hawken and Ravenhill will need that army to pull off their audacious vision. The challenge, as Hawken describes it, isn't in describing the solutions but in doing the numbers — the carbon savings and financial accounting, of course, but also how each solution plays out by country or region, based on available energy resources, climate, economy and other factors — and how each is likely to morph over the next 30 years.

And not just the positives. "We had to be very, very careful that we had the subtraction sign," factoring in ways greenhouse gas emissions can increase in the atmosphere along the way, offsetting any reductions. For example, he said, "We can talk about reforestation as being one of the hundred solutions, which it certainly is, but we have to make sure we subtract out the rate of fires in the world to reflect what's burning down."



Moreover, he says, technologies can't be measured in isolation; they need to be viewed as parts of the systems in which they operate. "We can talk about LED bulbs, but we also have to talk about solutions like dynamic skins or smart glass, which actually reduce light load by 40 or 50 percent. Each of these solutions has a history and measurements and metrics and numbers, so we are not pulling rabbits out of a hat."

And then there's the problem of double-counting, where individual benefits — energy reductions or financial savings, for example — are counted twice, or even three or four times in a single calculation, inflating a technology's benefits or understating its costs. That's been a frequent problem with some clean technology advocates' rosy scenarios.

The goal, says Hawken, is to make the numbers indisputable. "The numbers wanted to be beyond impecable in terms of methodology and inputs and even their bias. We wanted to have a very conservative bias on the numbers, so that nobody could say we're egging the pudding or exaggerating."

"Doing the numbers" has proved to be as daunting a challenge as Hawken expected, or perhaps more so. The concern over getting it right has led Project Drawdown to push back the book's publication date, to spring 2016 from the original goal of fall 2015.

Beyond books

True to Hawken's nature — he's not likely to be satisfied with simply creating a book, however ambitious and meticulously detailed — Project Drawdown's plans extend in several directions. The solutions and calculations will be contained in a publicly available database, along with the means for individuals and groups to create customized applications (using APIs, in computer parlance). "Anybody can repurpose it, download it, regionalize it, so they can use the Drawdown solutions to measure progress in any geographically bounded area," he explained. Users could model solutions differently — for example, factoring in different scenarios of how the cost and efficiency of solar energy might play out over the years. Hawken says there are also plans for accompanying educational curricula developed by National Science Foundation. And possibly some media projects based on the work.

The research could even be used as a policy tool, Hawken says. "What we see again and again is negative cost. We don't see the opprobrium that is always cast on climate mitigation, which is, 'It costs too much, costs too much, costs too much.' We don't see that at all. We see 'Return, return, return.' So governments — whether cities or local or communities or counties or states — can understand that these are no-regrets projects that have a very strong positive return, in which case you would want to do them, regardless of what you think about the rate of change in climate or whether you believe in it at all."

Despite the long road ahead, Hawken is already looking past the publication of what he dubs "Drawdown 1," and on to its sequel. That, he promises, will look at the next generation of technologies, with all of their unrealized potential to solve climate change. "We don't know the ending of this book, make that very clear, but with Drawdown 2, we're saying, 'Look what is coming. It is stunning.'"

It's easy, in today's divisive and toxic political environment, to view Project Drawdown as too good to be true, a quixotic quest for an unattainable goal.

But there's something simple and sane about Project Drawdown's collective ingredients: unabashed optimism tempered by sharp-pencil calculations, a bold goal undergirded by scientific pragmatism, immediacy coupled with a 30-year horizon, all leveraging the wisdom of a very smart crowd.

Not all of it will pan out — there are simply too many variables and uncertainties — but much of it will. And it just could move the needle.

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Timberland retreads old tires as new shoes

By Mike Hower



Timberland announced a partnership with tire manufacturer and distributor Omni United on Monday to create the first line of tires ever purposely designed to be recycled into footwear outsoles at the end of their lifecycle.

The new Timberland Tires will be made in the U.S. and feature a rubber formulation appropriate for the recycling of the tires at the end of their useful life

into shoes, rather than being used for tire-derived fuel or ending up in landfills. By designing the tires for a second life from the outset, Timberland and Omni United are taking recycling up a notch—to upcycling.

The companies say they first conceived this collaboration three years ago, when sustainability leaders from both brands came together to address a longstanding shared concern; the tire and footwear industries are two of the largest users of virgin rubber. The majority of tires on the market today have a limited life span; ecologically-sound disposal at the end of that life span presents yet another challenge.

To make the tire-to-shoe continuum a reality, Timberland and Omni United have established an industry-first tire-return and chain-of-custody process to ensure the tires go directly to dedicated North American recycling facilities to begin their path toward a second life.

Tire retailers will set aside used Timberland Tires for recycling after consumers purchase new tires to replace their worn out ones. Omni United is partnering with Liberty Tire Recycling and its network of tire collection and recycling firms to sort and segregate the Timberland Tires at the companies' facilities.

Used tires will be shipped to a North American tire recycling facility where they will be recycled into crumb rubber. The crumb rubber will be processed further into sheet rubber for shipment to outsole manufacturers. The rubber will be mixed into a Timberland-approved compound for outsoles that will ultimately be incorporated into boots and shoes.

The Timberland Tires product line provides market coverage in three categories. The Timberland CROSS tire (for small SUVs and crossover vehicles) will be available in April 2015 in 21 sizes, expanding to 35 sizes by September 2015. The Timberland A/T tire (for trucks and large SUVs) will be available in July 2015 in 30 sizes, and the Timberland TOUR tire (for cars) will be launched in 2016 in at least 25 sizes. This will round out the Timberland Tires portfolio, giving it three distinct lines with more than 90 sizes covering about 75 percent of the North American passenger vehicle market.

With warranties targeting 50,000 to 80,000 miles depending on tire model, Timberland and Omni United anticipate the first lot of returned Timberland Tires will be ready for recycling in late 2017.

Until a critical mass of supply comes in, Timberland and Omni United are seeking alternative recycled rubber compounds for a special collection of Timberland boots with outsoles inspired by the treads on Timberland Tires.

This announcement is the latest evolution in Timberland's efforts to put used tires back on the streets, which began in earnest in 2009 with the release of boots and shoes made with Green Rubber, a kind of recycled tire rubber. Later that year, Timberland launched the Earthkeepers 2.0, the company's first product designed to be disassembled and recycled. The boots were 80 percent recyclable, its soles made with Green Rubber.

Many rubber products such as car tires, bumpers and shoe soles are made of vulcanized rubber, which is made by adding sulfur and heat to virgin rubber in order to make a tougher, more durable material — but notoriously difficult to recycle.

Still, over 75 percent of scrap tires are already recycled or are beneficially used for fuel or other applications, according to the Rubber Manufacturers Association. Scrap tires are used in several productive and environmentally safe applications. The three largest scrap tire markets are: tire-derived fuel, civil engineering applications and ground rubber applications/rubberized asphalt.

Many uses have been found for recycled tires including whole tires, tires chips, shredded tires, and ground rubber. Retreading also saves millions of scrap tires from being disposed of as scrap each year.

This year, several companies around the world have been showing renewed interest in recycling, investing between \$5 million and \$10 million each into the Closed Loop Fund, a



\$100 million effort to invest in recycling infrastructure and put more recycled materials into manufacturing supply chains.

The fund also aims to increase recycling in the United States at a time when rates are leveling off but the demand for recycled feedstocks is mounting.

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World bank to focus future investment on clean energy

By John Vidal, for theguardian.com



Solar panels being cleaned at the Ain Beni Mathar Integrated Combined Cycle Thermo-Solar Power Plant in Morocco. The World Bank provided technical assistance and managed the overall project. Photograph: Dana Smillie/World Bank

The World Bank will invest heavily in clean energy and only fund coal projects in "circumstances of extreme need" because climate change will undermine efforts to eliminate extreme poverty, says its president Jim Yong Kim.

Talking ahead of a UN climate summit in Peru next month, Kim said he was alarmed by World Bank-commissioned research from the Potsdam Institute for Climate Impact Research in Germany, which said that as a result of past greenhouse gas emissions, the world is condemned to unprecedented weather events.

"The findings are alarming. As the planet warms further, heatwaves and other weather extremes, which today we call once-in-a-century events, would become the new climate normal, a frightening world of increased risk and instability. The consequences for development would be severe, as crop yields decline, water resources shift, communicable diseases move into new geographical ranges, and sea levels rise," he said.

"We know that the dramatic weather extremes are already affecting millions of people, such as the five to six feet of snow that just fell on Buffalo, and can throw our lives into disarray or worse. Even with ambitious mitigation, warming close to 1.5C above pre-industrial levels is locked in. And this means that climate change impact such as extreme heat events may now be simply unavoidable."

But the bank, which has traditionally been one of the world's largest funders of fossil fuel projects and has been accused of adding to the problem of climate change, said it could not ignore the poorest countries' need for power.

"We are going to have to focus all of our energy to move toward renewable and cleaner forms of energy. But on the other hand we believe very strongly that the poorest countries have a right to energy and that we not ask these energy poor countries to wait until there are ways of ensuring that solar and wind power can provide the kind of base load that all countries need in order to industrialise," said Kim.

"The stakes have never been higher. We cannot continue down the current path of unchecked growing emissions. The case for taking action now on climate change is overwhelming, and the cost of inaction will only rise," he said.

Kim was backed by Rachel Kyte, World Bank group vice president and special envoy for climate change. "It will only be in circumstances of extreme need that we would contemplate doing coal again. We would only contemplate doing [it] in the poorest of countries where their energy transition as part of their low-carbon development plan means that there are no other base load power sources available at a reasonable price," she said.

"The focus is on being able to ramp up our lending and the leveraging of our lending into all forms of renewable energy. That's the strategy. It includes everything from all sizes of hydro through to wind, to solar, to concentrated solar, to geothermal. I think we're invested in every dimension of renewable energy. That is what we're concentrating on."

The bank's report showed that with a 2C warming, soya and wheat crop yields in Brazil could decrease 50-70%. "In the Middle east and north Africa, a large increase in heatwaves combined with warmer average temperatures will put intense pressure on already scarce water resources with major consequences for food security. Crop yields could decrease by up to 30% at 1.5-2C and by almost 60% at 3-4C. Pressure on resources might increase the risk of conflict," it said.

Climate change posed a substantial risk to development and cutting poverty, the report said, adding that action on emissions need not come at the expense of economic growth.

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World Toilet Day: business steps in to tackle open defecation with affordable toilets

One billion people live with no alternative to open defecation, the newly launched Toilet Board Coalition says the solution must be market-driven

By Tim Smedley



Happy World Toilet Day! Most people living in high income countries, probably won't have thought twice about the convenience of it when sitting on the throne this morning. But for the 2.5 billion in the world without access to proper sanitation, it is a serious health issue.

One billion people have

no alternative to open defecation and sanitation has proved the most intractable of the

Poor access to services like sanitation, hits women in slums and informal settlements especially hard. Photograph: Tony Karumba/AFP/Getty Images

stepping in. Launched today, the Toilet Board Coalition brings together a range of businesses, NGOs and water, sanitation and hygiene (WASH) experts united by the same belief: that sustainable solutions must be market-driven.

Chaired by Unilever, its members include US sanitation giant Kimberly Clark, Japanese toilet maker LIXIL, German chemicals and odour company Firmenich, and NGOs such as WaterAid, World Toilet Organisation and Water and Sanitation for the Urban Poor (WSUP).

"It is a big issue, but there is a bigger opportunity for business to sort it out", says its chair, Jean-Laurent Ingles, global SVP household care for Unilever. "This means approaches that are businesses, with reduced or no aid gap. We know how to create demand, we know how to do the marketing, and we have huge R&D capabilities... designing the types of product that people want."



Geeta, who lives in Katra, Uttar Pradesh, walks almost six kilometres every day, in the early morning and late evening, to go to the toilet in local fields. Photograph: Atol Loke/WSUP

taken up in 700 homes, employing 35 largely local people as sales and operational staff.

Helping Clean Team reach a scale that is self-financing (it is currently funded by the Stone Family Foundation and DfID), and adapting similar models for other geographies, is the goal for the next two years. A potential roll-out in Manila, Philippines, is being evaluated, as are rural solutions for areas in India, Bangladesh and Cambodia.

Neil Jeffery, CEO of WSUP, believes that business acumen has long been the missing link in the WASH agenda. He criticises a "lack of recognition that low income people are actually consumers" and "seeing people as poor and therefore the recipients of aid." Clean Team's marketing isn't about "flashy adverts", he says, but rather "folks that come from those areas with a good understanding of the customer need, going door-to-door and talking to people about how this product could change their life."

A report by HYSTRA, the environmental consultants, commissioned by the Toilet Board Coalition, goes a step further by recommending services such as Clean Team are piggy-backed by, "a dedicated team of cash collectors... using their customer visits to generate additional revenue, in particular by selling a range of hygiene products (eg soap, detergent, etc)."

For the sceptics of big business, this rings alarm bells. This is making money from the world's poor, and doing so brazenly. Wouldn't the coalition's collective riches be better used by giving away toilets for free?

"First of all there is just not enough money in the world to give 2.5 billion people a toilet", argues John Stone, whose Stone Family Foundation concentrates on market-based WASH solutions. "There are also examples of people who have been given a brick-built toilet and decide it's the safest place to store their rice. Whereas if they have paid money for a toilet it means they want a toilet, and they will use it."

"What we are also trying to do is set up the supply side... to help entrepreneurs get into the business [of] producing, manufacturing and selling latrines. That creates employment, and

potentially a supply-side structure which when working well doesn't require further funding because it's a really good business."

Ultimately success will be measured when such businesses become self-sufficient, driven by local demand. Unilever, Kimberly-Clark and others would happily say that, if it's their products they are selling, then all the better.

"We want to assist low income consumers to have access to buy as many services as possible that are suitable for them in terms of enhancing their sanitation and water needs", explains Jeffery. "If you bring the low income consumer into the core activity of a regular business rather than as an add-on, philanthropic programme, it means that ultimately those [consumers] will be taken seriously and their needs responded to."

[<ReadMore>](#)

Global warming has doubled risk of harsh winters in Eurasia, research finds

By Damian Carrington, for The Guardian



New research shows that the increased risk of icy winters will persist for the next few decades. Photograph: Jeff J Mitchell/Getty Images

The risk of severe winters in Europe and northern Asia has been doubled by global warming, according to new research. The counter-intuitive finding is the result of climate change melting the Arctic ice cap and causing new wind patterns that push freezing air and snow southwards.

Severe winters over the last decade have been associated with

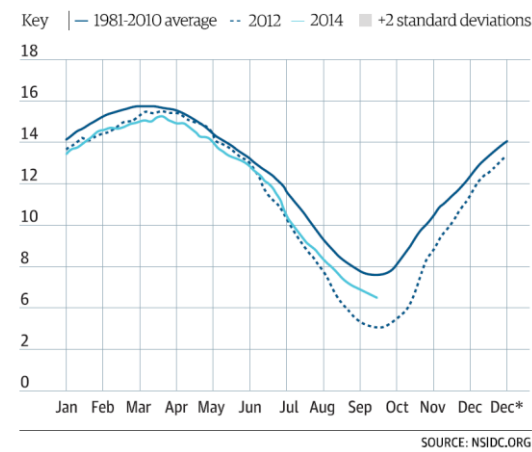
those years in which the melting of Arctic sea ice was greatest. But the new work is the most comprehensive computer modelling study to date and indicates the frozen winters are being caused by climate change, not simply by natural variations in weather.

"The origin of frequent Eurasian severe winters is global warming," said Prof Masato Mori, at the University of Tokyo, who led the new research. Climate change is heating the Arctic much faster than lower latitudes and the discovery that the chances of severe winters has already doubled shows that the impacts of global warming are not only a future threat. Melting Arctic ice has also been implicated in recent wet summers in the UK.

The new research, published in Nature Geoscience, shows that the increased risk of icy winters will persist for the next few decades. But beyond that continued global warming overwhelms the colder winter weather. The Arctic is expected to be ice-free in late summer by the 2030s, halting the changes to wind patterns, while climate change will continue to increase average temperatures.

Arctic Sea ice extent

Extent, millions of square km



SOURCE: NSIDC.ORG

people think that global warming has stopped. It has not. Although average surface warming has been slower since 2000, the Arctic has gone on warming rapidly throughout this time."

The melting of sea ice influences Eurasian winters because the open ocean is darker than ice and absorbs more heat. This in turn warms the air above and weakens the high-level winds called the polar vortex. This causes meanders in the jet stream to become stuck in place. This "blocking" pattern pulls freezing air southwards out of the Arctic and, because it is stuck, the resulting severe weather can last for long periods.

Climate scientists have warned for many years that global warming is not simply leading to a slow, gradual rise in temperature. Instead, it is putting more energy into the climate system which drives more frequent extreme events.

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10 sustainable innovations: from solar-powered suitcases to floating classrooms

Tackling global challenges including Bangladeshi floods, water scarcity, fashion waste and death in childbirth, the runners up for the Sustainia awards showcase business innovation

By Laura Storm



Students exit their floating classroom, designed to allow students to continue their education during .
Photograph: Shidhulai Swanirvar Sangstha

Panel on Climate Change's (IPCC) anticipated report on climate change, due to be finalised 31 October.

1. Food finalist: Netafim (Israel) - gravity-powered irrigation



Netafim offers low-tech irrigation. Photograph: Netafim

of the food consumed in the developing world. Irrigation systems are vital to sustain agriculture as it addresses water scarcity and soil erosion. The solution is commercially viable with a payback-time of about a year, making it fit for microfinance projects.

2. Transportation finalist: 8D technologies (Canada) - bike sharing app



Spotcycle bike-sharing app. Photograph: 8D Technologies



Advantix's saltwater air conditioning system.
Photograph: Advantix

4. Fashion finalist: I:CO (Switzerland) - textile recycling



An I:CO clothing drop-off receptacle.
Photograph: I:CO

The 2014 Sustainia Awards, chaired by Arnold Schwarzenegger, attracted more than 900 submissions for projects and technologies representing 10 different sectors from food, fashion and, city development to transportation and healthcare. Collectively, these projects are deployed in more than 84 countries.

The runners up for the award are showcased here and the winner will be announced in Copenhagen on Thursday 30 October. The ceremony will celebrate these innovations ahead of the release of the Intergovernmental

Netafim is behind a low-tech irrigation system for smallholder farmers in developing countries which increases and secures yields while saving water and cutting costs. It drips precise quantities of water and nutrients right at the root zone of crops while an elevated tank distributes the water using gravity.

This minimises the need for electricity and investments in infrastructure. The UN estimates that 500 million smallholder farmers provide over 80%

As a mode of transport, the bicycle is one of the lowest emitter of greenhouse gases - even with the CO2 emissions of the food you need to power a bike. This helps explain why bike-sharing systems are being adopted increasingly by cities. The Spotcycle app from 8D technologies aims to make bike-sharing more convenient and smartphone-friendly. The app locates nearby bike stations and communicates availability, maps out bike paths and helps with navigation. The app is already in sync with cities in North America, Australia and Europe.

3. Buildings finalist: Advantix (USA) - air-conditioners which use saltwater

Air conditioners use about 5% of all electricity produced in the US. As a result, 100m tons of carbon dioxide are released each year. Advantix's air conditioning system uses saltwater which means it needs 40% less energy than normal systems. Whereas air-conditioning systems normally chill the air to remove humidity and then reheat it in a highly energy-intensive process, Advantix's air-conditioners funnel the air through non-toxic fluid saltwater instead. The process dehumidifies the air without the need for re-heating.

Clothes are often discarded after the first or second life cycle, and apparel accounts for up to 10% of a western consumer's environmental impacts. Through an advanced take-back system, I:CO works to keep apparel, footwear and other textiles in a continuous closed-loop cycle. Used shoes and clothing are collected in stores and retail outlets, where customers are financially rewarded for depositing their used items. Once collected, the textiles are sorted according to more than 350 criteria for designation. Used clothes can

be labeled suitable for: second-hand sale, recycling into fibres and paddings for new products, or upcycling.

5. IT Finalist: Fairphone (Netherlands) - A smart-phone with social values

Through development, design and production, social enterprise Fairphone works to create positive social impact in the consumer electronics supply chain - from responsible mining, decent wages and working conditions to reuse and recycling.

Fairphone began by redesigning the processes behind the production, making phones that use conflict-free minerals and are assembled in a factory with a worker-controlled welfare fund. To date, Fairphone has sold nearly 50,000 phones from its first two production runs.



Fairphone conflict-free phones. Photograph: Fairphone

6. Health finalist: We Care Solar (USA) - solar suitcases giving life

Preventable causes related to pregnancy and childbirth claim 800 lives daily and 99% of cases happen in developing countries. We Care Solar has created a sustainable solution. The Solar Suitcase provides solar electricity for medical lighting, mobile communication and essential medical devices for rural areas and humanitarian settings. This enables safe and timely obstetric care, which ultimately improves maternal and neonatal outcomes. Additionally, the innovation allows emergency surgeries to be conducted around-the-clock in rural hospitals. The Solar Suitcase has been introduced to more than 600 healthcare facilities in 20 countries.



The Solar Suitcase provides lighting for medical professionals. Photograph: Solar suitcase

7. City Finalists: Wecyclers (Nigeria) - Pedal-powered recycling

In Lagos, Nigeria, Wecyclers is fuelling social and environmental change by enabling people in low-income communities to make money from unmanaged waste piling up in their streets.

It is a response to the local waste crisis; the municipal government collects only 40% of city garbage. The Wecyclers initiative has deployed a fleet of cargo bicycles to pick-up, collect and recycle garbage in low-income neighbourhoods. Families are encouraged to recycle their bottles, cans and plastics through an SMS-based programme. For every kilogram of material recycled, the family receives Wecyclers points on their cell phone. Families can then redeem points for goods such as cell phone minutes, basic food items or household goods. The initiative adds to the local economy by hiring personnel locally.



Wecyclers collectors. Photograph: Wecyclers

8. Resource finalist: Newlight Tech (USA) - carbon-negative plastic

With its novel technology that converts greenhouse gases into plastic material, AirCarbon has disrupted the market by replacing oil-based plastics with a sustainable product that is competitive in both price and performance. It is made from a process where carbon in the air is captured and used in manufacturing. AirCarbon uses pollutants as resources to make products otherwise made from oil. Products made from AirCarbon are carbon-negative even after calculating the emissions from the energy used in production. AirCarbon is currently used to make chairs, bags and cell phone cases.



Carbon-negative plastic. Photograph: Newlight

9. Education finalists: Shidhulai Swanirvar Sangstha (Bangladesh) - school boats combatting climate change

More than one million Bangladeshis could be displaced by rising sea levels by 2050. One consequence is that children cannot attend school for long periods of time, making it harder for them to escape poverty. By building a fleet of solar-powered school boats, the Bangladeshi initiative Shidhulai Swanirvar Sangstha has secured year-round education in flood-prone regions of Bangladesh. Each floating school boat collects students from different riverside villages, ultimately docking at the last destination where on-board classes begin. Solar lighting makes the schedule flexible, which provides for additional educational programs in the evening. Shidhulai's floating schools model has been replicated in Nigeria, Cambodia, Philippines, Vietnam and Zambia.



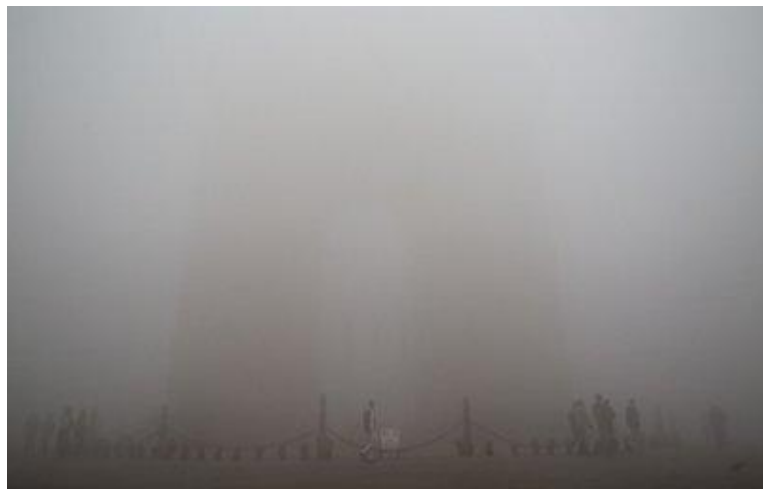
Floating school rooms. Photograph: Shidhulai Swanirvar Sangstha

10. Energy Finalists: Opower (USA) - personal energy-efficient expert

[<ReadMore>](#)

India air pollution 'cutting crop yields by almost half'

By Azeen Ghorayshi, for theguardian.com



The iconic India Gate in Delhi, shrouded in smog, is barely visible. Air pollution, caused by car emissions and industries, is rising rapidly. Photograph: Louis Dowse/Louis Dowse/Demotix/Corbis

Air pollution in India has become so severe that yields of crops are being cut by almost half, scientists have found.

Researchers analysed yields for wheat and rice alongside pollution data, and concluded significant decreases in yield could be attributed to two air pollutants, black carbon and ground level ozone. The finding has implications for global food security as India is a major rice exporter.

Black carbon is mostly caused by rural cookstoves, and ozone forms as a result of motor vehicle exhaust, industrial emissions, and chemical solvents reacting in the atmosphere in the presence of sunlight. Both are "short-lived climate pollutants" that exist locally in the atmosphere for weeks to months, with ozone damaging plants' leaves and black carbon reducing the amount of sunlight they receive.

The study looked at both the effects of climate change and the two pollutants on crop yields.

"While temperature's gone up in the last three decades, the levels of smog and pollution have changed much more dramatically," says Jennifer Burney, an environmental scientist at University of California, San Diego, and co-author of the paper, published in the journal PNAS. "But this was the first time anyone looked at historical data to show that these pollutants are having tremendous impacts on crops."

Comparing crop yields in 2010 to what they would be expected to be if temperature, rainfall and pollution remained at their 1980 levels, the researchers showed that crop yields for wheat were on average 36% lower than they otherwise would have been, while rice production decreased by up to 20%. In some higher population states, wheat yields were as much as 50% lower.

Using modelling to account for the effects of temperature increase and precipitation changes in that time, they were able to show that 90% of this loss is attributable to the impact of the two pollutants.

The results are specific to India's seasonal patterns, the crops, and its high pollution levels, but may extend to other places with similar problems, such as China. Chinese scientists warned in February that severe air pollution is slowing photosynthesis in plants, with effects "somewhat similar to a nuclear winter".

Previous studies had used experimental data looking at the impacts of ozone on plants to extrapolate potential losses, but this is the first ever study to use actual historical agricultural and emissions data to account for lower crop yields.

"Overall I think it's a great paper," says Stanford agricultural ecologist David Lobell. "I think in both India and China there is growing recognition of the toll that poor air quality has on agriculture. This study will certainly add to that recognition."

Lobell and Burney both point out that because black carbon and ozone are short-lived climate pollutants, they present a clear opportunity for tackling climate change. While long-lived greenhouse gases like carbon dioxide and nitrous oxide can persist in the atmosphere for decades to centuries, addressing sources of the short-lived climate pollutants will have more immediately perceptible effects.

Measures such as improved cookstove technology for rural areas, or cleaner coal consumption and diesel filters on trucks in urban ones, could go a long way to improving the impacts on agricultural yields.

"Our thought is that these are more politically tractable points of entry for making meaningful change in climate," says Burney. "There's a really local benefit for taking on some sort of costly action."

Burney also points out that because of India's key role in exporting rice, such efforts could play a critical role in helping global food security.

[<Source>](#)

Pay for your ambulance? How India's poorest are gaining access to healthcare

While some may feel uncomfortable making money from the poor, social enterprise and emergency ambulance operator Ziqitza, estimates it has saved thousands of lives

By Oliver Balch

Set up in 2005, Ziqitza, an emergency ambulance operator, brings affordable healthcare to some of India's poorest people. The social enterprise operates around 1,250 ambulances across 17 Indian states. By its own calculations, its cross-subsidised model has helped 3.2 million people get to hospital, saving thousands of lives in the process.

This is just one of a growing number of social enterprises using innovative strategies to give India's under-served poor access to quality healthcare. Other notable examples include Narayana Hrudayalaya hospitals and the eye care providers L V Prasad Eye Institute and Aravind Eye Care System.

India spends 4% of its GDP on health (less than half that of the UK), meaning government-run hospitals and clinics are invariably over-stretched and under-resourced. Those who can afford it, go private while the vast majority of India's 1.2 billion people rely on the state.

The idea of using market-based solutions to help provide affordable healthcare to the poor makes "perfect sense", according to Ajit Mahadevan, India country director for the impact investment fund Acumen. Over the last decade, the US investor has ploughed around \$16m into 10 pro-poor healthcare providers across the country.

"There are willing customers out there for low-cost, quality health services, but they are not getting serviced", says Mahadevan, who insists that Acumen's goal is not to make a "fat return" but to reinvest any returns in a revolving fund for other social enterprises.

He accepts that some may feel uncomfortable about the idea of making money from the poor – a criticism that India's microfinance sector has faced. But as long as the services and products remain affordable and high quality, he sees no problem. Treating patients as "valued customers" gives them dignity too, he argues. What's more it offers the poor the rare opportunity to hold their health provider to account.

Business viability

When it comes to serving the poor, the returns are invariably too low or the effort too high to interest mainstream businesses. Hence the need for a values-based approach that sees revenue generation as a means, not an end, says Ziqitza's co-founder and chief executive, Sweta Mangal.

"Private ambulance services that are out-and-out commercial will only provide a service to you if you are willing to pay for it. But my objective as a social enterprise is first to save a life and second to be [financially] sustainable."

Tiered pricing is one way to achieve such economic sustainability. By charging rich patients more, health service providers can generate cross-subsidies for the poor. Ziqitza's method of distinguishing between the two is whether they ask to go to a private or government hospital: crude perhaps, but an accurate benchmark of relative income for the most part.

Public-private partnerships present a second possible option. Ziqitza has a contract to deliver ambulance services for the states of Bihar, Orissa and Punjab and generates extra revenue from corporate advertising on the sides of its vehicles.

Keeping costs low offers another obvious route to economic viability. Asian Health Alliance (AHA), a low-cost provider of diagnostic services in the state of Karnataka, benefits from lower business rates and real estate costs because it operates primarily in semi-urban and rural areas. It also runs courier services, avoiding the cost of expensive middlemen by picking up samples itself. AHA's costs are 25-30% lower than the sector's larger players – savings that it can use to offer cheaper services.

Achieving scale

It's not all sacrifice, however. Pro-poor health companies tap into new markets that mainstream operators have ignored. "Everyone wants to go to a bigger market to do business", says Mohapatra. "But the rural market is equally big, but it's very widely distributed so it takes a lot more effort." AHA currently services 150 patients per day, all of them earning less than \$2.50 per day. It hopes to reach 1,000 patients within two years.

The biggest challenge for social enterprises in India's healthcare sector is scale. With scale comes wider social impact and greater aggregated revenues (a critical factor if your charges are kept intentionally low to remain affordable). And helping social enterprises scale is where Acumen and similar impact investors, such as Intellectap and Unitus Seed Fund, come in.

Back in 2007, Ziqitza was able to expand the ambulance fleet from 10 to 100 thanks to a \$1.5m investment from Acumen. The fund has since invested a further \$1.2m. Likewise, a \$750,000 investment in AHA last year means the company can now take on new staff and expand its network of collection centres.

Acumen's Mahadevan insists it's not just cash that impact investors bring to the table. "Of course, they (social enterprises) need money", he says. "But there's a big difference between those who just bring money and those who bring advice and connections too."

[<Source>](#)



For healthcare in India, those who can afford it, go private while the vast majority of India's 1.2 billion people rely on the state. Photograph: Alamy

Biogas gensets for Delhi waste water treatment plant

Source Name: Penn Energy

A new waste water treatment plant in Delhi, India is set to process up to 91 million litres of waste water daily features three biogas-fired gensets. Developers of the Niloti plant (pictured) placed an order for three Caterpillar Energy Solutions/MWM TCG 2020 V16 series units via MWM's Indian distributor, Green Power International Pvt Ltd. Run on biogas derived from digestion of the sewage sludge, the system can supply autonomous power of approximately 4.5 MWe as well as thermal energy in the form of hot water for digester heating with overall efficiency rates of up to 85%, the company says.

The order also includes a 10-year contract until 2024 for the maintenance and servicing.

'This is the third sewage gas plant we install in India using MWM gensets, a segment which is growing considerably and where we see a high potential in the next years, as environmental friendly infrastructure investments continue growing,' said Sanjeev Puri, Managing Director of Green Power International.

[<Source>](#)

AP plans LED street lights for all civic bodies

Source Name: Business Line- The Hindu

The Andhra Pradesh Government is planning to have LED street lights in all the civic bodies in the state - municipalities as well as corporations - in the next 3-5 years, and the State is also promoting LED lights for domestic use.

Saurabh Kumar, the Managing Director of the public sector Energy Efficiency Services Ltd (EESL), implementing the ambitious project, told reporters here on Tuesday that it would result in 50 per cent energy saving and in monetary terms it may amount to Rs. 4,000 crores in all sectors.

He was addressing the media along with Municipal Commissioner M. Janaki, APSPDCL CMD H Y Dora, State Energy Conservation Mission CEO A. Chandra Sekhar Reddy and Engineer-in-chief P. Panduranga Rao who are members of a committee formed to finalise modalities for an agreement with EESL.

He said the fixing of LED lights in Visakhapatnam would become a benchmark for the rest. He said the seven-year agreement to pay back the cost (of fixing LED lights) of Rs. 57 crore envisaged payment from the savings achieved by GVMC from power consumption and maintenance. He said the biggest advantage of LED lights is its life of 10 years.

Janaki said the committee would finalise the modalities and submit them to the government for approval. With only 25 per cent of streetlights in working condition after cyclone Hudhud, the minister suggested going in for total replacement with LED lights. So far 12,000 of the 90,000 lights have been replaced.

Dora said of the 11 lakh lights, so far 3.5 lakh were given. He said the pilot project would next be taken up in Anantapur district and later in Srikakulam and Guntur districts. Subsequently, it will be extended to all the remaining districts. It is estimated that 500 MW load would be eventually reduced, bringing down peak power purchase cost and consumer bills.

Chandra Sekhar Reddy said the State had come out of crisis of facing 22 million units shortage four months ago. The Union Government is investing Rs. 1,000 crore in power conservation in the State through EESL.

[<Source>](#)

Karnataka drives e-waste recycling to recover metals

Source Name: Zee News

Karnataka has taken a lead in e-waste recycling to recover precious metals, including gold, silver, copper and palladium, from electronic products, computers and peripherals.

"We have tied up with the Centre for Materials for Electronics Technology (C-MET) and e-waste recycler e-Parisaraa to set up a 100-tonne per annum integrated processing plant near here for recovering precious metals from electronic goods like printed circuit boards," IT Minister S.R. Patil told IANS.

According to a study by the electronic hardware industry apex body Manufacturers Association of Information Technology (MAIT), around 500,000 tonnes of e-waste is generated across India every year, thanks to growing consumption and disposal of electronic products and consumer durables.

Though an additional 100,000 tonne of e-waste enters the country through illegal imports annually, only 40 percent of it gets recycled due to inadequate and poor infrastructure which is mostly in the informal sector.

"As natural wealth in the form of precious metals are shipped outside India in the form of e-waste by recyclers due to lack of right technology to process them, India's first integrated e-waste management facility will recycle metals, glass, plastics and other hazardous materials in an eco-friendly way," Patil said.

The Hyderabad-based C-MET is an autonomous scientific society, formed by the central government under the Department of Electronics and IT (DeitY), to assist states in setting up e-waste processing units in the country.

For the Rs.11.3-crore pilot plant, DeitY will contribute Rs.8 crore and the state government Rs.75 lakh through the IT&BT department over the next four years.

As the first state government's approved e-waste recycler, the Bengaluru-based e-Parisaraa handles, recycles and reuses waste electrical and electronic equipment in an eco-friendly unit.

The project will process e-waste from secondary sources and replenish depleting natural resources used in making e-products and devices.

"As a majority of recyclers send discarded or disposed e-waste to other countries for processing due to lack of indigenous and cost-effective technologies, our directorate is partnering in the e-project to process it within the country," Patil said.

C-MET has developed expertise to initiate research and development (R&D) projects and help stakeholders in setting up plants to process electronic materials for industrial use and transfer the technology to the strategic sector.

"The plant will reduce piling up of used and discarded electronic and electrical equipment, which mostly end up in landfills or partly recycled in unhygienic conditions by backyard recyclers and thrown into waste streams harming the ecology," e-Parisaraa founder managing director P. Parthasarathy told IANS.

The objective of the joint project is to transfer e-waste into socially and industrially beneficial raw materials like valuable metals, plastics and glass using home-grown, cost-efficient and eco-friendly technologies suitable to Indian tropical conditions.

E-waste is generated by the industry, intermediaries and end-users when electronic and electrical equipment and products become obsolete due to advancement in technology or wear and tear.

"If managed safely by recognising that e-waste can be a secondary source of raw material with socio-economic benefits such as natural resource conservation, reduction in pollution and job creation, we can minimise environmental damage to cities and towns, Parthasarathy said.

Growing consumption of electronic goods and their high rate of obsolescence are reasons behind massive generation of e-waste in India. Dumping from developed countries has compounded the problem.

"The situation could assume alarming proportions if we do not pay attention to e-waste problem and take corrective actions. As the first principle of recycling is reuse, it is essential the electronics industry encourages reuse of obsolete items by refurbishing them and providing service support," MAIT's former executive director Vinnie Mehta said.

The apex body also wants institutional users to enforce e-waste management policy to dispose of obsolete electronic equipment, as 60 percent of it remains stored in warehouses and garages due to poor and inefficient collection system.

[<Source>](#)

Bamboo lends itself to be in eco-friendly loo

Source Name: The Hindu

After deriving music, health food and chic furniture from bamboo, a research centre in Auroville is now looking to promote eco-friendly toilets entirely made from the wonder grass.

The Auroville Bamboo Centre (ABC) led by Bala Sundaram has been pushing the envelope as far as possible in diversifying the range of bamboo products.

The research team at the Centre, which has developed over 100 bamboo-derived products, ranging from jewellery to toys and charcoal soap, has been focused on bamboo-based materials in the housing sector over the last few months.

Recently, the team developed a compost bamboo toilet which was both eco-friendly and low-cost. The model would be showcased at an international workshop at Kochi, Kerala, to be held from December 1 to 5.

The workshop on "Bamboo Toilets for Private and Community" is a joint initiative of the South Asia Bamboo Foundation (SABF) and Auroville Bamboo Centre with the support of the World Bamboo Organisation (WBO) and the Kerala Bamboo Mission of the Government of Kerala. The theme has been kept looking into the need for the country's need for urban and rural sanitation requirements. The plan is to develop various models of public and community toilets using bamboo, natural, treated or engineered bamboo as construction materials.

Though from time immemorial, bamboo has been part of the housing scene, the advent of new building materials and increasing industrialisation has edged out the plant species from the construction sector. In fact, bamboo, once the housing mainstay of the rural and the poor population, is now the least used material.

The SABF and Auroville Bamboo Centre plan to train workers/artisans/companies/NGO on construction of bamboo toilets across the country with the support of WBO.

The ABC team hopes that bamboo compost toilets could not just revive the application of bamboo products in housing, but resolve the pressing sanitation and related health challenges confronting the country.

According to recent UN statistics, half of India's population does not have access to toilets. Poor and inadequate sanitation accounts for various health-related issues causing economic and social losses. It is estimated that over a lakh government schools do not have toilets for girls, 1.52 lakh schools do not have toilets for boys, while 1.64 lakh schools have dysfunctional toilets with lack of the basic access contributing to high dropout rates.

[<Source>](#)

India: low carbon energy transition could free up US\$600 billion in investment capacity

Source Name: World Cement

New analysis by Climate Policy Initiative (CPI) demonstrates that, with the right policies, India's transition to a low carbon energy system could free up significant financial capacity over the next 20 years to invest in better development and economic growth.

India is trying to meet ambitious renewable energy goals, as well as development needs, with finite financial resources. CPI's two new reports, 'Moving to a Low Carbon Economy: The Financial Impact of the Low-Carbon Transition,' and 'Moving to a Low Carbon Economy: The Impact of Policy Pathways on Fossil Fuel Asset Values,' indicate how the global economy can maximise its financial capacity to meet economic and development goals while moving to a low carbon economy.

In the reports, CPI uses the International Energy Agency's business-as-usual and two degree change assumptions to simulate current and low carbon energy pathways. CPI's research on India found that:

Transitioning from oil to low carbon transport alone could increase investment capacity in India by US\$600 billion, depending on policy choices. As India, the US, the EU and China are all net consumers of oil, they stand to benefit if they all reduce their oil consumption in favour of low carbon alternatives, regardless of whether oil-producing countries choose to act. A combination of policies that encourage innovation and reduce demand, such as taxes or ending fossil fuel subsidies, can result in benefits.

Transitioning to a low carbon electricity system could also bring financial savings if India can reduce the cost of finance. Renewable energy enjoys significantly reduced operational costs compared to coal-powered electricity, which pays high (and volatile) costs for coal and gas extraction and transportation. These savings, when coupled with a reduction in India's high financing costs, can provide India with additional financial capacity to meet its economic and development goals.

The government and lenders should also be aware of future risks of fossil fuel asset value loss. Of India's potential new coal-fired power plants that are currently planned or under construction, 77% are at risk of causing asset value loss in an IEA two-degree scenario.

"Our analysis reveals that with the right policy choices, over the next twenty years India and the rest of the world can achieve the emissions reductions necessary for a safer, more stable climate and still free up billions for investment in development and other parts of the economy," said David Nelson, Senior Director, Climate Policy Initiative.

Priorities for action:

- Innovation and demand-focused policies are the best combination to maximise financial system benefits. For example, in a transition away from oil, a combination of innovation and policies such as taxes or a reduction of fossil fuel consumer subsidies provides the most promising approach to achieve a net increase in India's financial capacity to invest in its economy.
- Continue to accelerate the growth of renewable energy and energy efficiency. India can save significant operational costs in electricity generation in the transition to renewables, and it can minimise the risk of future asset value loss inherent in building new coal plants. India already has ambitious solar and wind plans, and accelerating those will help India achieve both its energy and development goals.
- Reduce the cost of financing renewable energy plants to significantly lower the cost of transition to a low carbon economy. In particular, long-term, low-cost debt can reduce the cost of low carbon power in India by 25%.

[<Source>](#)

Students promote innovative paper bags as portable dustbins

Source Name: Times of India

In order to counter lack of proper waste management system in the city, two former students from MS University's faculty of fine arts have found an innovative solution. They have designed compact eco-friendly bags that can be used to dispose waste on the go.

Lack of dustbins in the city inspired Akshata Naik and Twinkle Panchal to start the 'Greenbag Initiative'. It proposes to encourage people not to litter the city even if they do not spot dustbins around.

"We decided to provide a unique yet useful alternative to the problem in the form of portable dustbins made of paper," said Twinkle Panchal (25). Panchal added that they are planning to approach the state government to make these bags available to public at places like bus terminals and railway stations.

These bags, which can be recycled, come in three different sizes based upon their utility. The bags have been categorized as pocket bag, trash bag and spit bag. "These come in handy while you travel. The spit bag has been designed specifically keeping those people in mind who have the habit of spitting in public spaces. The spit bag is water resistant and can be used on long journeys," said Akshata Naik (24), who added that they will be producing short videos under the initiative as 'Green Bag Pledge'.

The videos will feature common people using the bags to encourage more people to maintain cleanliness. With the videos, the duo intends to spread awareness on the importance of sanitation in the city.

Another city-based social start up, Handmade Hope, has also launched an initiative, 'Environment's First Aid Package' to promote the use of paper bags as a tool for Swachh

Bharat Abhiyan. The group has launched an assortment of bags that could be used as carry bags and bags to dispose waste.

"People are unable to find an apt alternative to plastics. Under 'Environment's First Aid Package', we aim to encourage the use of paper bags among citizens," said Rushabh Gandhi, who initiated the project.

[<Source>](#)

Turning Bulk Waste Into Cooking Gas

Source Name: New Indian Express

According to a news report, Bengaluru generates about 5,000 tonnes of waste every day, most of which is wet waste. There is no single solution to tackling such a complex issue that's only growing by the day. But two IIM-B graduates got right into the middle of the waste industry to carve a niche for themselves, as well as create a significant environmental impact.

Mainak Chakraborty and Sreekrishna Sankar have developed a waste to energy system, now called BioUrja; a biogas system that takes in wet waste from bulk waste generators like hotels, hostels, and schools, and converts them into cooking gas. Every 1,000 kg of waste can be converted to energy that will fill four commercial cylinders of LPG, which means every kilogram converted will give fuel worth `5.

"We wanted to take up a project that would yield profit, but at the same time create an environmental impact. The whole idea was that it should make economic sense, both for us and the clients," says Mainak, director, Green Power Systems. Mainak has been recognized as one of the top innovators of India under the age of 35 by the MIT Technology Review, for his work in the waste management space.

BioUrja was born out of two findings by the young team. One, for bulk waste generators like restaurants and corporate houses, converting waste into compost was not a viable solution. They would not have any practical use for the compost. Secondly, most of these spaces did not have the space to install a biogas unit.

"Especially in the city, people face terrible space crunch. Hence, we needed to build something compact that would fit into the basement, terrace or parking lots," says Mainak.

The biogas unit is made of efficient bacterial cultures, chemicals, latest biotechnology and a remote-sensing technology that helps Mainak and his team monitor the progress of each and every unit from their office. "We have sold units across the country by now and using our cloud-based monitoring system, we keep a tab on what's happening with each one of them. We've basically brought the Internet of things into the biogas space," says Mainak. The remote-sensing capacity also helps users monitor the temperatures of the unit and detect gas leakages if any.

The units mostly work unmanned, except for when the waste needs to be fed into the machine, which will need an operator. The unit will take care of everything else.

One of their first clients was Akshaya Patra Bangalore. "They've managed to reduce their LPG dependence considerably over time," says Mainak.

A unit can cost anywhere upwards of `10 lakhs, depending on the size of the unit. "Suppose you install a unit that costs `45 lakhs, you can, within less than two years, save fuel costs of an equivalent amount," says Mainak.

He also says that the basic consciousness of the people in India is shifting regarding waste.

"We reach out to many people to push the idea of waste to energy management, and most people are quite open to the idea. With ideas like Swachh Bharat and what people like The Ugly Indians are doing in the city, it's only a matter of time before people start managing waste sensibly," he says.

[<Source>](#)

Biogas from waste for 'Clean Puttur'

Source Name: Times of India

Even as the Mangalore City Corporation (MCC) authorities struggle to solve the garbage menace, Puttur Town Municipality in Dakshina Kannada district has come up with a novel plan of setting up a compressed biogas (CBG) plant to convert waste into cooking gas.

The town municipality headed by newly elected president Jagadish Shetty Nellikatte has planned to set up a CBG plant in Puttur. The town, which generates approximately 15 tonnes of waste, will be able to produce at least 10 cylinders of 14kg biogas per day through the project. The TMC is also open to share the technology and provide assistance if other urban local bodies including MCC wish to introduce similar plants.

Jagadish Shetty told TOI that the project will be introduced as a part of 'Clean Puttur' mission being adopted by the municipality. "Our main objective is to keep Puttur town clean," he added.

Explaining about the new project, Rajesh Bejjangala, vice-president of JCI, Puttur, said the CBG produced through the plant will be cheaper by Rs 300-Rs 400 compared to commercial LPG. "The town, which has 53,000 population, produces an average of 15 tonnes of waste. After the segregation, we may expect around 5-6 tonnes of wet waste that can be used to produce 99% clean CBG," he said. The estimated cost of the project is Rs 3.5 crore.

The project will be taken up by the municipality in association with JCI Puttur and Muliya Foundation. Once the necessary approvals are obtained, the work of the project will be completed within four months, he added.

Jagadish Shetty said biogas plant will be set up at town municipality's dumping yard at Bannur in Puttur. The municipality has distributed 60 pipe compost manufacturing units for houses, flats and institutions to convert waste into manure. The local body is also gearing up to hold plastic bag collection competition for over 15,000 schoolchildren in the region, he said adding that winners will be given attractive prizes with the help of donors.

[<Source>](#)

The 2015 International Conference on Environment and Bio-Engineering (ICEBE 2015)

January, 10 – 11, 2015

Dubai (UAE)

The aim objective of the 2015 International Conference on Environment and Bio-Engineering (ICEBE 2015) is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Environment and Bio-Engineering. 2015 International Conference on Environment and Bio-Engineering (ICEBE 2015) will be held in Dubai, UAE at Flora Grand Hotel during January 10-11, 2015.

This conference provides opportunities for the delegates to exchange new ideas and application experiences face to face, to establish business or research relations and to find global partners for future collaboration.

Topics of interest for submission include, but are not limited to: Environmental Science and Technology, Global environmental change and ecosystems management, Climate and climatic changes, Global warming, Ozone layer depletion, Carbon capture and storage, Biofuels, Deforestation, Soil decontamination, Environmental sustainability, Renewable sources of energy-energy savings, Clean technologies, Sustainable cities, Management and regulation of point and diffuse pollution, Wastewater and sludge treatment, Industrial wastewater treatment and Air pollution and control.

[<ReadMore>](#)

2015 International Conference on Substantial Environmental Engineering and Renewable Energy (SEERE-15)

January, 13 – 14, 2015

Abu Dhabi (UAE)

2015 International Conference on Substantial Environmental Engineering and Renewable Energy (SEERE-15) on Jan. 13-14, 2015 at Centro Capital Centre, in Abu Dhabi (UAE) is aimed for the scientists, scholars, engineers and students from the Universities all around the world and the industry to present ongoing research activities, and hence to foster research relations between the Universities and the industry. The conference is expected to provide delegates opportunities to share experiences, exchange new ideas and application experiences personally. This conference shall facilitate to establish business or research relations and to find global partners for future collaboration. This conference is sponsored by Universal Researchers in Environmental & Biological Engineering (UREBE).

Topics of interest are broadly classified under following categories: Wind Energy Applications, Hydropower Applications, Photovoltaic Technology, Solar Thermal Applications and Geo Thermal Applications. Speakers from different countries are expected to give their deliberations which include speakers from Taiwan, Philippines, Egypt, Iraq, India and Hungary.

[<ReadMore>](#)



2015 1st Journal Conference on Environmental Science and Development
January 24-25, 2015
Taipei, Taiwan
JCESD 2015 1st

2015 1st Journal Conference on Environmental Science and Development (JCESD 2015 1st) aims to provide a forum for researchers, practitioners, and professionals from the industry, academia and government to discourse on research and development, professional practice in environmental science and development. JCESD 2015 1st will be held in Taipei, Taiwan During January 24-25, 2015. It is one of the leading international conferences for presenting novel and fundamental advances in the fields of environmental science and development. It also serves to foster communication among researchers and practitioners working in a wide variety of scientific areas with a common interest in improving environmental science and development related techniques.

Broad themes for topics of interest are Environmental dynamics, Global environmental change and ecosystems management, Environmental restoration and ecological engineering, Environmental sustainability, Health and the Environment, Wastewater and sludge treatment, Air pollution and control, Solid waste management, Management of hazardous solid waste. Environmental dynamics, Global environmental change and ecosystems management, Environmental restoration and ecological engineering, Environmental sustainability, Health and the Environment, Wastewater and sludge treatment, Air pollution and control, Solid waste management, and Management of hazardous solid waste. Delegates from various developed and developing countries are expected to participate in the conference.

[<ReadMore>](#)

2nd INTERNATIONAL CONFERENCE ON “BIOENERGY, ENVIRONMENT & SUSTAINABLE TECHNOLOGIES - BEST2015”

JANUARY 25-28, 2015

Tiruvannamalai, TN, India

This international conference is sponsored by DEPARTMENT OF BIOTECHNOLOGY GOVERNMENT OF INDIA in association with The Biotech Research Society, India, International Forum on Industrial Bioprocesses and Indian Biomass Association. The conference will be held at Arunai Engineering College, Tiruvannamalai, Tamilnadu during 25th -28th January, 2015. The topics of interest are classified into following broad categories: Bioenergy, Environmental Biotechnology, Policy makers and the Public, Water Research and Climate change. There will be special sessions on Biotechnology, Chemical Engineering, Nano Technology and Solar Energy Technologies.

Invited speakers include Prof. Huu Hao Ngo from University of Technology, Sydney, Australia, Prof. In Seop Chang from Korea, Dr. V. Sivasubramanian, Director – Tech, Phycospectrum Environmental Research Centre, Chennai apart from other academicians and professors from different eminent institutes and universities.

[<ReadMore>](#)

Deccan Chronicle, Hyderabad
dated October 26, 2014

■ Research shows that every unit saved is equal to 2 units of power produced

AP switches to LED efficiency

DC CORRESPONDENT
HYDERABAD, OCT. 25

Andhra Pradesh will be one of the first states to take up energy conservation under the DELP (Demand Side Efficient Lighting Programme) on a massive scale to meet future energy requirements.

The pilot project, which will later be adopted for the entire state, has begun with Guntur district where 20 lakh LED bulbs will replace traditional incandescent bulbs in every household. By implementing this, Guntur alone will save an estimated 75 to 80 MU per annum.

The project is being implemented by the Energy Efficiency Service Limited (EESL) and is funded by PFC, PGCIL, REC and NTPC at a cost of ₹1,000 crores.

The project in AP is being undertaken on a pilot basis in four districts including Guntur, Anantapur, West Godavari and Srikakulam.

In Guntur, where the project was started earlier this month, close to 80,000 bulbs have been distributed over the last 10 days.

Research has shown that every unit saved is equal to two units produced. AP alone has a potential to save 8,000 MU annually from domestic, agriculture, industries and street lights.

"According to the baseline survey conducted in AP, each household was using two incandescent bulbs on an average. The LED bulbs have a life span of 10 to 15 years, if used for four to five hours daily. We have also asked the manufacturer to give a back-to-back warranty to the consumers for five years on

TORCHBEARER

EESL HAS COMPLETED DISTRIBUTING (AND REPLACING) 65 LAKH BULBS TO OVER TWO LAKH HOUSEHOLDS IN PUDUCHERRY.

SHOWING LIGHT

■ AP is second in line and the LED bulb distribution has already begun in Guntur. Three other AP districts will also come under the project. Karnataka, Tripura, Uttar Pradesh, Madhya Pradesh, Jharkhand, West Bengal, Rajasthan and Kerala are also toeing the line.

AP AHEAD OF TS

■ Telangana has been left behind in the energy conservation measures as the SECM was registered as a society for AP, post-split. Though Telangana has a bigger saving potential than AP, it is yet to make an energy-efficient plan.

MORE BRIGHTNESS

■ An incandescent bulb of 60 watts capacity (consumes 60 watts) will be replaced by a seven watts LED bulb (consumes 7 watts). But, the latter has brightness more than the 60 watts bulb. It can actually replace a 80 watts incandescent bulb. Phillips makes bulbs that can fit into any electrical socket, making it a better choice.

● Every unit saved is equal to two units produced. AP alone has a potential to save 8,000 MU annually from domestic, agriculture and other sectors.

the LED bulbs. This means the manufacturer will have to replace any defective bulb within the five-year warranty period," said vice-chairman and managing director of EESL, Saurabh Kumar.

"Energy efficiency is the need of the hour as natural resources are depleting fast. Moreover, it will help in significantly reducing electricity bills of the consumers," said CEO, state energy conservation mission A. Chandra Sekhara Reddy.

Efficient pumpsets for farmer on cards

DC CORRESPONDENT
HYDERABAD, OCT. 25

In the second phase of the energy conservation plan, agricultural pumpsets will be replaced with energy-efficient pumpsets. This has been launched as a pilot project at Rajam-nagar, where 3,000 pumpsets will be replaced free of cost for the farmers.

Since power is free

for the agricultural sector in the state, the inefficiency of the pumpsets has been very high for decades, as there was no incentive for the farmers to save electricity. The project aims to exchange the inefficient pumpsets with five-star rated pumpsets. This will increase the efficiency of the pumps by 30 per cent and reduce consumption.

LED bulbs
of ₹500
come at ₹10

DC CORRESPONDENT
HYDERABAD, OCT. 25

Under the DELP scheme, each household will be given two LED bulbs in exchange of incandescent bulbs at the cost of ₹10, while the market price is ₹450 to ₹550.

The tender for the 20 lakh bulbs has been bagged by Phillips and the large scale of the order has reduced the cost of the bulb to ₹280 for the government.

Under the scheme, a normal incandescent bulb of 60 watts will be replaced with a seven watts LED bulb, which is brighter and will reduce power consumption by an estimated 85 per cent.

The LED bulbs to be distributed under the pilot project can be exchanged at electricity revenue collection offices, MeeSeva Centres and mobile vehicles, which will be used to spread awareness about the scheme. Presently, it is going on in Guntur.

"To distribute the bulbs, we are first selecting the areas and conducting a massive outdoor publicity to create awareness among the people. The place and days for distribution will be informed in advance. We might choose electricity offices for distribution so that people can come and exchange while paying their electricity bills," said vice-chairman and MD of Energy Efficiency Service Limited, Saurabh Kumar.

The Times of India, Delhi dated
October 26, 2014

Diwali pollution levels reverse in two areas

Low in Pusa, High in Lodhi Road

Anindya Chattopadhyay



CRACKER EFFECT: Scientists say local emissions caused the drastic change

TIMES NEWS NETWORK

New Delhi: This Diwali, scientists noticed a trend reversal in the air pollution levels at two monitoring stations in Delhi. Lodhi Road, which usually records the lowest air pollution levels during Diwali compared to other stations, fared the worst a day after Diwali. In contrast, the usual culprit, Pusa in New Rajendra Nagar, had the lowest quantity of particulate matter.

Scientists at the System of Air Quality Forecasting and Research (SAFAR), a joint project of Indian Institute of Tropical Meteorology and Indian Meteorological Department, said the change can be linked to the amount of crackers burst at these locations. "Our model analysis shows meteorology did not play any decisive role in this surprising switch in pollution levels at these locations. I think it is because fewer crackers were burst at Pusa and vice versa," said Gufran Beig, chief project scientist, SAFAR.

For the past three years, Lodhi Road has emerged as the least polluted area, along with Aya Nagar, during Diwali and the next day. However, this year, Lodhi Road had the worst air quality, which indicates a drastic increase in local emissions," he added. An anal-

ysis of the amount of crackers burned by Pusa residents should confirm whether the results could be fully explained by this.

Delhiites continued to breathe very polluted air even on Saturday, two days after Diwali. This smog-like condition may clear away in a couple of days, only to come back again as the temperature is likely to fall in the next week. Beig explained that the air has a lot of moisture which is holding the pollutants.

IMD had predicted light rain on Saturday but that didn't happen. This led to further accumulation of particulate matter. Lodhi Road, Noida and DU recorded the highest PM2.5 (fine, respirable particulate matter) and PM10 (coarse particles) on Saturday.

Peak pollution levels, according to real-time data released by Delhi Pollution Control Committee, were very high on Saturday. Around 2.15pm at Civil Lines, PM2.5 value was 332.83 microgram per cubic metre, about five times the standard, and PM10 level was 597.55 microgram per cubic metre, six times the standard. At Anand Vihar, PM2.5 level was 594 microgram per cubic metre, about 10 times the limit, and PM10 level was 1,024 microgram per cubic metre, also 10 times the standard, at 1.10pm.

The Times of India, Delhi dated October 27, 2014

Swachh to recharge village tank

Residents Of Dry Nawada Want Govt To Remove Waste From Disputed Site

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New Delhi: The real test for Prime Minister Narendra Modi's Swachh Bharat Abhiyan may be in urban villages like Nawada. The chief secretary recently announced that a *johad* (traditional rainwater storage tank) will be rejuvenated in the village as part of the national campaign. But when TOI visited the village to see the waterbody, there was no water or even depression in sight. What caught the eye was a huge dump. The toxic fumes rising from the plastic bags and waste burned in patches made your stomach turn.

Elders claimed there was, in fact, a large *johad* at the site that used to supply water to the village. "I think it is more than 300 years old. When people settled here, the *johad* was also made as the land is extremely dry. I remember people even cultivating water-chestnuts in it. It's been about 20 years that people started dumping



ONCE A WATERBODY: The area has been a dump for about 20 years

waste here. While I really hope the government clears the mess, I don't think it's possible to revive the waterbody," said Shrinivas Pradhan, a village elder.

The *johad* land (usually a common property) is in dispute as a few villagers have reportedly claimed a part of it in court. This led the government to build walls around it. "Where else can people dump their waste?"

The corporation staff never comes to pick it up. Since the land is disputed, nobody is interested in cleaning it," said Bhanu Pratap, a villager standing next to a heap of burning plastic. The villagers also resent that the Swachh Bharat campaign has been visible in the more developed parts of Delhi. "If you want to see *swachh bharat*, just look here. We have been living in abysmal condi-

Plea to revive Najafgarh jheel

New Delhi: Intach has moved the National Green Tribunal seeking directions for reviving the Najafgarh jheel. They said real estate development is gobbling up a substantial part of the lake. The NGT bench has asked Delhi government departments to reply by December 4. *TNN*

tions. There is no DJB supply in most of the houses, so we have to depend on groundwater, which is often not fit to drink," added Pratap.

Though the authorities have finally turned their attention to the place, villagers were convinced that the waterbody couldn't be restored. "I don't think it's humanly possible to restore this *johad*. We will be happy even if the waste is removed. Ideally, there should be a park here for our children. If they create a waterbody, people will dump waste again and it may become a breeding ground

for mosquitoes," said Pratap, who has noticed that no birds can be seen near the *johad* other than a few cranes. "I don't even see pigeons."

Environmentalists and officials are hopeful though. "Why can't it be revived? It can be readied to catch rainwater. There may be a need for a natural water treatment system or a small effluent treatment plant. Rainwater from the village can be diverted there. In a parched area reviving the waterbody is a priority, no matter what the condition," said Diwan Singh, an active member of the Ridge Bachao Andolan who now works on degraded waterbodies in Dwarka.

S D Singh, CEO, Delhi Parks and Gardens Society that maintains a record of waterbodies in Delhi, said that the fact that the *johad* is under litigation doesn't matter. "It's a waterbody and nobody can occupy it. For waterbodies that dry up, we usually carry out plantation around it so that the depression can hold water," he said.

Whisky waste could be fuel of the future

London: The possibility of using whisky by-products as a next generation biofuel is being explored by a Scottish start-up. The company is working to capitalize on the tonnes of waste produced by one of Scotland's most valued industries and turn the dregs of whisky-making into fuel.

Celtic Renewables has refined its process based on a century-old fermentation technique and is now taking the step towards a commercial plant, according to an article in Chemical and Engineering News. Draff and pot ale "have no commercial value, and in modern context they represent a disposal issue," said Martin Tangney, founder, president, and chief scientific officer of the firm.

The process of making whisky requires three ingredients: water, yeast and a grain, primarily barley. But only 10% of the output is whisky. Each year, the industry produces 500,000 metric tonnes of residual solids called draff and 1.6 billion litres of a yeasty liquid known as pot ale. The firm has taken an old industrial process developed to turn molasses and other sugars into chemicals and fine-tuned it to convert draff and pot ale into acetone, 1-butanol and ethanol. The latter two can be used as fuel. *PTI*

The Times of India, Delhi dated
October 29, 2014

World's first solar power plane to touch Varanasi

Raja.Bose@timesgroup.com

Payerne (Switzerland): Ahmedabad and Varanasi are set for a flying start. The cities will be ports of stop in India for a unique experiment that began in Switzerland — a round-the-world flight by the first aircraft run on solar power.

In March next year, the Solar Impulse will fly into Ahmedabad from Abu Dhabi, where it begins its flight, and then halt at Varanasi before flying further towards the Pacific.

And, it's not politics but tail wind that has led psychiatrist and aeronaut Bertrand Piccard — initiator of project Solar Impulse — to pick the two cities. "I met Narendra Modi twice when I was in Ahmedabad," said Piccard. It is purely meteorological requirement that led to choosing these cities, said Piccard, at the Solar Impulse centre here, about 60km from Bern.

Piccard has teamed up with MIT graduate Andre Borschberg to build and operate the green airplane, an 11-year-old, \$150 million project financed by a number of private companies including Omega, Schindler and ABB.

The flight that will begin

SOARING IN SKY

► Readied by a multi-disciplinary team with 80 specialists, 90 partners and about 100 advisors

► The largest aircraft ever built with such a low weight

► Max cruising altitude 8,500m (27,000ft)

► Min speed of 20kts (36km/hr) at sea level and 31.5kts (57km/hr) at maximum altitude

Max speed of 49 kts (90km/hr) at sea level and 77kts (140 km/hr) at max altitude



FLYING MACHINE: The Solar Impulse being readied at Payerne

in Abu Dhabi will fly over the Arabian Sea to reach India, is then likely to fly to China, then cross the Pacific Ocean, the US, Atlantic Ocean and Southern Europe or North Africa before returning to Abu Dhabi.

The aircraft, with a wingspan of 72m, which makes it wider than a Boeing 747 to create surface area for solar cells, weighs as much as a car — 2,300kg — with a maximum cruising altitude of 27,000 feet at a speed of 140km per hour. The plane can carry just one

pilot. "We have asked for permission to land in India. We are in touch with the DGCA, AAI and ministry of renewable energy. We have also requested China for permission to land," said Piccard.

"Our first goal is not to transport passengers. The Wright Brothers too did not have the technology to fly passengers. The idea is to use modern technology to reduce the energy lost by the use of old technologies," said Piccard.

► Live on social network, P 5

*The Times of India,
Lucknow dated
October 29, 2014*

Diwali discovery clears air on city sky

IITR Scientists Find New Pollutant

TIMES NEWS NETWORK

Lucknow: For the first time, scientists and technical staff of Lucknow-based Indian Institute of Toxicology Research (IITR) have quantified the number of particles of particulate matter in the city's sky during Diwali fireworks.

Scientists have also come up with a new air pollutant - PM1 (particulate matter 1), whose particle size ranges

MEASURING POLLUTION

Normal day: Oct 21 - 22 ■ Diwali day: Oct 23 - 24 ■

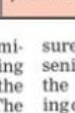
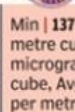
Particle Number Concentration

Min | 13,10,844 per litre
Max | 21,51,246 per litre
Avg | 17,55,270 per litre

PM1 Mass Concentration

Min | 86 microgram per metre cube, Max | 139 microgram per metre cube, Avg | 113 microgram per metre cube

Min | 13,10,844 per litre
Max | 21,51,246 per litre
Avg | 17,55,270 per litre



from 0.3 micro metre to 1.0 micro metre. "The monitoring of PM1 has been done for the first time in Lucknow. The particle presence was mea-

sured from 6pm to 6am," said senior principal scientist of the environmental monitoring division, SC Barman.

Normally, the size of the

particulate matter (a known air pollutant) measured for ambient air quality is 2.5 micrometre (PM2.5) or 10 micrometre (PM10). But, with the discovery of particulate matter 1 it's easier to measure the exact level of air pollution in the city. "The harmful effect of PM1 is much more than PM2.5 or PM10 owing to its comparatively smaller size," said Barman.

He added that average particle number concentration of PM1 increased by 153% on Diwali as compared to two days before the festival. Similarly, the average PM1 mass concentration registered an increase of 169% on Diwali, when compared to normal

days. Likewise, noise pollution on Diwali too showed significant variation with the noise levels on normal days.

Meanwhile, Aliganj celebrated the loudest Diwali this year with noise levels recorded by the Uttar Pradesh Pollution Control Board touching 80.5 decibels, an increase of 12.27% as compared to last year's noise levels. Barring the silent zone of Lohia Hospital in Gontinagar, which witnessed a dip in the noise level by 0.55%, noise levels on Diwali night at all the monitoring locations in city showed an increasing trend. However, air pollution levels during this Diwali registered a visible decline.

*Deccan Chronicle, Hyderabad
dated October 30, 2014*

■ Yours is a story of failure: SC to pollution boards

SC tasks NGT to clean Ganga

New Delhi, Oct. 29: The Supreme Court on Wednesday asked the National Green Tribunal to take action against industrial units polluting the Ganga including snapping water and power connections to them. It also slammed the Centre and state pollution control boards for their "failure" to punish erring units.

"This is an institutional failure and yours is a story of complete failure, frustration and disaster. You need to stand up against the polluting units. It will take another 50 years if the task is left to you," the bench said.

Expressing deep concern over the present pollution level of the river, which it held to be the "lifeline" of the country, a SC bench headed by Justice T.S. Thakur gave a free hand to the tribunal to take action against such units including forcing



● A SC bench gave free hand to the National Green Tribunal to take action against such industrial units polluting the including forcing them to shut down.

● The bench, rapped the pollution control boards for not standing up against the polluting units.

ing them to shut down. It said that the tribunal needs to be entrusted with the task as the pollution control boards have failed in their duty to take action against polluting industries.

The bench, rapped the boards for not standing up against the polluting units having strong monetary and political influence.

The apex court, however, said that it will keep on monitoring the issue relating to discharge of domestic effluents into the river which is being

dealt by municipal bodies of the concerned states.

"We regret to say that intervention of the court and its sustained efforts notwithstanding has led to no fruitful result," the apex court, which has been monitoring the Ganga clean project for the last three decades, said. "It is our duty to ensure purification of the river. There is no gainsaying that river has significance not only in religious and spiritual psyche of the people but it is also a lifeline of people," the bench added. — PTI

*The Economic Times, Delhi dated
October 30, 2014*

SC Asks NGT to Shut Down Industries Polluting Ganga

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New Delhi: The Supreme Court on Wednesday directed the National Green Tribunal to shut down all industries releasing untreated effluents into the Ganga unless the units take steps to prevent such discharges by March 31, 2015.

A bench comprising Justice TS Thakur and Justices Adarsh Kumar Goel and R Banumathi passed the order after a detailed hearing in which the government agreed to the move.

The Narendra Modi government had announced soon after taking over in May that it would clean up the holy river and had earmarked funds for this purpose. But the apex court has been unimpressed with its

action plan so far and has taken the matter upon itself.

Industrial effluents are blamed for 30% of the water pollution in the country, while the rest is caused by domestic sewage.

According to a notification by the ministry of environment and forests, industries releasing untreated effluents have until March to set up treatment plants and get them operational to ensure that the quality of water meets prescribed standards or close operations.

The NGT would have the power to disconnect power and water supplies to any defaulting unit.

The order will affect industrial units in 11 states through which the Ganga flows. The industries affected include pharmaceuticals, fertilisers, pesticides, distilleries, sugar,

pulp and paper, textiles, slaughter houses and tanneries, food and dairy units, power plants, cement plants, automobile and locomotive units and paints.

The NGT will submit a report to the top court every six months, the judges said.

"This should not be understood to mean that this court has washed its hands off the Ganga," the court said, lamenting the indifference of the government and statutory authorities such as the central and state pollution control boards in dealing with the problem of pollution in the "holiest of holy rivers."

"Even if hundreds of crores has been spent, water quality instead of improving, has deteriorated," the court observed. "This despite the court passing several orders in the last 30 years," it said.

It justified the order, saying that as soon as it decides to deal with the issue of industrial effluents and shut down errant units, case after case would be filed in the top court, which did not have the wherewithal or the expertise to verify their claims. The NGT, the court observed, was equipped under the law with technical experts to handle this aspect of the problem and ensure that ultimately such units adhere to the safe standards of industrial effluents or shut down.

The court listed the case for further hearing on December 10, when

it will deal with the aspect of domestic sewage, which involves treatment by municipalities before release.

Deccan Chronicle, Hyderabad
dated October 31, 2014

ECO FRIENDLY

■ Energy consumption to be decreased by 65%

LEDs brighten several areas

DC CORRESPONDENT
HYDERABAD, OCT. 30

Streets connecting Madina and Falaknuma as well as the stretch from the mini Charminar to HICC, as well as its surrounding areas were lit up by new LED streetlights.

As a pilot project, the Greater Hyderabad Municipal Corporation replaced 748 conventional bulbs with LEDs. Two stretches were selected by the civic body in the West and South Zones for LED installation.

On the Hitec city-Kothaguda Road stretch, 289 bulbs were replaced. Bulbs on the Chandrya-ngutta-Nayapool stretch too were replaced with LED lights. Following a bidding process, the project was assigned to HPL.

According to the GHMC authorities, LED lights are energy efficient and can reduce total energy consumption by 65-67 per cent. Maintenance costs are also reduced due to the longer life of LEDs (50,000 hours).



The Hitec city road lit up with LED street lights.

—DC

The Economic Times, Delhi dated October 31, 2014

From ashes to GREEN GOLD

What is today a polluting by-product can be converted into a green resource with the right vision and innovative technological intervention

nilakshi.sharma@timesgroup.com

Development is predicated upon energy and as a developing nation India's energy demand is set to grow substantially. Today approximately 70 per cent of the power being generated in India is

thermal based of which some 60 per cent is based on the fossil fuel, coal. One of the most prodigious by products of coal based power generation is fly ash. Indian coal in particular has a high ash content - going up to nearly 50 per cent. As on date India uses approximately 200 million tonnes of coal annually

to produce thermal power. This in turn is generating close to a 175 million tonnes of fly ash annually according to the Ministry of Power reports. Increasing energy demands equals greater generation of fly ash with time. It is therefore imperative to utilise fly ash in innovative ways that will

help mitigate the pollution caused by un-reclaimed fly ash. To that end The Economic Times organised a the Fly Ash Summit; a step towards a cleaner environment in Delhi recently. The summit was held with technical support from C Farm @ NTPC and the Steel Authority of India Ltd., was the co-sponsor. BPSCL sponsored the delegate's kit for the event.

The summit began with a welcome address by Gautam Sen of The Times of India and was graced by the presence of the Prakash Javadekar, MOS (I/C), Ministry of Environment, Forests and Climate Change, Government of India.

The summit brought together all of the stakeholders; from environmental scientists to the representatives of the thermal power plants; from engineers who are experimenting with the utilisation of fly ash in construction to manufacturers of cement and other industries like mining where fly ash has the potential to be a cheaper key component; from government representatives to experts. The summit succeeded in highlighting various facets of fly ash; its generations, its current

utilisation and further enhancement of utilisation, innovative uses that can also help create ecological value such as the projects undertaken by TERI using innovative fungal organisms, to further technological innovations that may allow for the use of fly ash as a source material for the extraction of aluminium, etc. The deliberations also touched upon the legislative procedures that currently impact the utilisation of fly ash; there are legislative contradictions that need to be resolved and support that needs to be extended taking into account the newer innovative technologies that allow for the utilisation of fly ash as more than mere construction material.

But ultimately, the fundamental change that is needed with regards to fly ash is to change the popular perception that regards fly ash as both a waste product and a hazard. We need to look at fly ash first as a reclaimed resource that can help bring down construction costs in the long run while increasing durability. Secondly, we need to look at fly ash as a resource that can help create ecological value with the right reclamation management technologies.

FROM LEFT TO RIGHT: Dr. Vimal Kumar, C.S. Prasad, S.J. Sibal, Prof. Manoj Datta, Dr. B. Bhattacharjee, Dr. Alok Adhokeya, Dr. K.N. Rao and R.K. Swarni



MR. PRAKASH JAVADEKAR MOS (I/C), Ministry of Environment, Forests & Climate Change, Govt. of India

WE NEED TO CHANGE OUR MINDSET TO REALISE POTENTIAL

The utilization or non utilization of fly ash is an issue of our mindset. We think of it as waste and do not utilize it while the world over it is looked at as resources being recovered. We should look towards utilizing fly ash content as a resource very effectively in road development for example. If we can convert our mindsets then there are many uses. There can be many other uses such as railway embankments and pre-stressed railway concrete sleepers, etc.

We ourselves have used fly ash in both brick format and other construction material format in the our new environment ministry building in Jor Bagh, Delhi. We will soon be offering conducted tours of this new building to increase awareness of the environmental principles upon which we have built the building. The Environment Ministry is also looking to streamline processes for setting up coal washeries. We also need to improve the technology for burning coal more efficiently to reduce the unburnt coal content in fly ash. Walking the path of clean energy does not have to mean only solar, wind and other renewable source based energy; it also means being more energy efficient at all levels of thermal energy production. The Ministry of Environment will be a willing facilitator and will encourage, enable and partner all green initiatives which includes 100 per cent fly ash utilization. This is also an area of great interest for the central government which under the Prime Minister's vision takes cognizance of climate change and envisions "Making in India with zero defect and zero effect".

The Times of India, Delhi dated
November 01, 2014

The Times of India, Delhi dated November 02, 2014

Haze in Delhi due to agri-waste burning

'Common In Punjab, Haryana This Time Of Year'

TIMES NEWS NETWORK

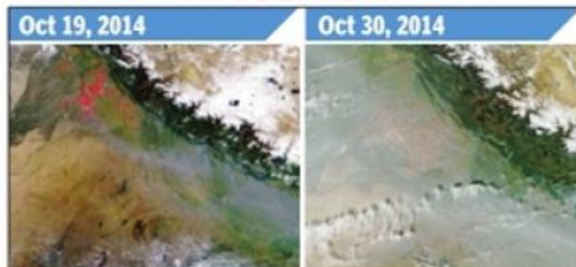
New Delhi: The current haze-like condition in Delhi could be linked to agricultural waste being burnt up north in Punjab and Haryana. Images released by the United States' National Aeronautics and Space Administration from its moderate resolution imaging spectro-radiometer's aqua-satellite suggest a thick blanket of aerosols lying over northern Indian states including Delhi.

Delhi Pollution Control Committee officials as well as scientists at System of Air Quality Weather Forecasting and Research (SAFAR) under the ministry of earth sciences said that such burning of agricultural waste may be adding to Delhi's local pollution load.

The images taken on October 30 and October 19 show a large area covered with red dots which suggest fire. Similar images were released in 2012 by NASA which also showed a thick layer of aerosols and fire spots. While DPCC has linked it to high air pollution levels in Delhi, several experts said it was not true as the wind direction was not towards the capital. They criticized the state pollution watchdog for not facing up to local emission sources.

"This is very similar to

WHO IS THE CULPRIT?



Nasa photos show large areas (with red dots) suggesting fires

FORECAST		
FRIDAY	SATURDAY	MONDAY
PM10 241µg/m ³	PM10 234µg/m ³	PM10 249µg/m ³
PM2.5 137µg/m ³	PM2.5 133µg/m ³	PM2.5 178µg/m ³
STANDARD PARAMETERS		
PM2.5: 60 microgram per cubic metre		
PM10: 100 microgram per cubic metre		

what happened in 2012. Every year around October and early November, farmers harvest the kharif crop and sow the rabi crop. Many resort to burning the straw and other waste. We need to know whether the wind is blowing towards Delhi. We have been recommending the air shed approach for long. Pollution doesn't have boundaries," said Anumita Roy Chowdhury, head of Centre for Science and Environment's Clean Air programme.

Gufran Beig, chief project

scientist at SAFAR which is a joint programme with Indian Meteorological Department (IMD), said the effect of cyclone Nilofer that will hit Gujarat coast on Saturday was weak but it has changed the wind pattern. "The wind blowing towards Delhi is from north-northwest. They are carrying a lot of moisture. They are passing near the zone where biomass waste is being burnt. It's likely to increase air pollution levels in Delhi in coming days," he said.

DANGEROUS EXPOSURE

SOURCES OF BENZENE

- 1 Emissions from burning coal and oil
- 2 Vehicle exhaust
- 3 Evaporation from petrol filling stations



WHAT US EPA SAYS ABOUT TOXIC AIR POLLUTANTS LIKE BENZENE

Air toxics are hazardous air pollutants that may cause cancer, birth defects, or other serious health problems. Under Clean Air Act Amendments of 1990, EPA is required to regulate emissions of 187 toxic pollutants, including benzene, toluene, dioxin, and lead and mercury compounds



WHAT WHO SAYS

Exposure to benzene results in a range of acute and long-term adverse health effects and diseases, including cancer and aplastic anaemia. Exposure can occur occupationally and domestically due to use of benzene-containing products

Cancer-causing benzene not part of air quality index

Jayashree Nandi
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New Delhi: The air quality index (AQI) recently launched by the Centre doesn't monitor the quantity of benzene, a component of petrol or gasoline. Constant exposure to high levels of the carcinogen (a cancer-causing substance) may have serious long-term health effects. With benzene levels found to be way higher than the safe standard in many parts of Delhi and possibly other cities, it's shocking that the Centre included lead but not benzene in the AQI. Some experts say it's time the government came up with a separate monitoring and control programme for toxic air pollutants like benzene, lead and mercury.

It's uncertain how the levels of these toxic air pollutants—different from standard pollutants like PM2.5 (fine, respirable particles) and PM10 (coarse particles)—will be addressed or communicated to the public. In fact, benzene levels in certain monitoring stations in Delhi have been shooting up, propelling Delhi Pollution Control Committee (DPCC) to put IIT-Kanpur on the task of assessing the source of emissions.

AQI is an easily accessible way of informing people about the air quality in their cities. It has six categories—good, satisfactory, moderately polluted, poor, very poor and severe—depending on the concentrations of eight main air pollutants—PM10, PM2.5, sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ozone, carbon monoxide, lead and ammonia. "They should have included benzene because its levels are higher," said a former Central Pollution Control Board (CPCB) official on condition of anonymity.

CPCB has claimed that the

benzene in fuel is being phased out and though there is limited data on the pollutant, it may be included in the AQI in future. The benzene level at Civil Lines around 3.30µm on Tuesday was about 129 microgram per cubic metre when the standard is 5. Around this time the benzene level at IGI airport was as high as 45.54 microgram per cubic metre.

"The AQI is dealing with pollutants that have immediate short-term impacts like respiratory or cardiovascular diseases. Benzene, on the other hand, is an air toxin and a carcinogen which can cause damage in the long run. I think there needs to be stringent action to get rid of it completely."

Experts say the government should come up with a separate monitoring and control programme for toxic air pollutants like benzene

The US for instance monitors air toxics separately," said Anumita Roy Chowdhury, head of the Clean Air programme under Centre for Science and Environment. "We need to act quickly by first bringing down the benzene and aromatics in petrol."

Dioxin levels also need regular monitoring. Concerns were raised when high dioxin levels were found to be issuing from a waste-to-energy plant in Okhla. High levels of pollutants like benzene are linked with certain kinds of lymphomas (a type of cancer). Experts said a step the government can take is to install vapour recovery systems in petrol pumps to prevent vapour loss and cut down on benzene emissions.

The Economic Times, Delhi dated November 03, 2014

Failure to Check Climate Change

Stresses on need to tackle change through a combination of adaptation and mitigation

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New Delhi: The message from the Intergovernmental Panel on Climate Change (IPCC) is loud and unequivocal: the window of opportunity for the world to stave off the severe, pervasive and irreversible impacts of global warming is limited. In a report, the IPCC said climate change, resulting from human action-induced global warming, is not a problem of the future and many of its adverse effects are already and increasingly evident.

The report released in Copenhagen on Sunday sends a clear message to governments that failure to check climate change by allowing the continued rise in emissions of greenhouse gases will have disastrous consequences.

"The scientific case for prioritising action on climate change is clearer than ever... Beyond a certain point, human society cannot cope with the change, and therefore, the IPCC has drawn up a very clear rationale for the society to deal with this problem," IPCC Chairman RK Pachauri said.

The report, which distils and integrates the findings of the three working groups comprising the Fifth Assessment Report and two special reports brought out by the IPCC in 2011, stresses on the need to tackle climate change urgently through a combination of adaptation and mitigation.

"We have little time before the window of opportunity to stay within 2°C of warming closes. To keep a good chance of staying below 2°C, and at manageable costs, our emissions should drop by 40 to 70% globally between 2010 and 2050, falling to zero or below by 2100. We have that opportunity, and the choice is in our hands," Pachauri said.

UN Secretary-General Ban Ki-moon, who was present in Copenhagen, said, "Science has spoken. There is no ambiguity in their message. Leaders must act. Time is not on our side."

The report, experts say, breaks new ground by addressing ways in which countries may address emission reduction by an integrated approach to policy making and focusing on co-benefits.

"The IPCC synthesis report suggests a way of thinking about climate change that is deeply relevant to India. There is a complex two-way relationship between sustainable development and climate change: climate policies should support, not undermine, sustainable development; but limiting the effects of climate change is necessary to achieve sustainable development. This suggests India has to increasingly internalise climate considerations into development planning," said Navroz Dubash, lead author on national and sub-national policies for the IPCC re-



The Synthesis Report provides critically important info for policymakers, who have the difficult task of finalising a global climate pact next year in Paris

RK PACHAURI
Chairman, IPCC

port and senior fellow at the Centre for Policy Research.

The IPCC report states that the levels of three key greenhouse gases - carbon dioxide (CO₂), methane and nitrous oxide - are the highest in 800,000 years and that the period between 1983 and 2012 were most likely to be the warmest 30-year period in the last 1,400 years. It also states that increased oceanic uptake of carbon dioxide has resulted in a 26% rise in acidity in oceans.

The report doesn't shy away from the fact that there is a cost to ensuring that the global temperature increase is limited to under 2 degrees above pre-industrial levels by the end of the century. It stresses that this cost is both affordable—about 0.06% of GDP every year—especially as global GDP is set to grow by at least 300% in this period and that the cost of inaction is much higher than the cost of action.

The lag between science and policy is in part a reflection of the inability of the global community to resolve key political questions relating to responsi-

bility for action, equity and the development imperative of countries. The IPCC is not unaware of this reality, given that the synthesis report itself is the product of intense negotiations.

Releasing the report, Pachauri made a plea to policymakers to heed the messages that science was sending as they worked towards the new global climate change regime. "The Synthesis Report provides critically important information for policymakers, who have the difficult task of finalising a global climate agreement next year in Paris. I cannot predict the outcome of those negotiations. But I do know that it is critical for policymakers to allow their decisions to be informed by the science. I do not envy them. Their task is formidable," the IPCC chairman said.

For negotiators and ministers headed to the UN sponsored Lima round of negotiations, the IPCC's message is clear, the Cancun Pledges, where countries pledged climate change action on the basis of assessments undertaken domestically, is not enough to limit temperature increase to below 2°C. The Synthesis Report says that Cancun Pledges "are broadly consistent with cost-effective scenarios that are likely to limit temperature change to below 3°C relative to pre-industrial levels."

Deccan Chronicle, Hyderabad
dated November 03, 2014

GLOBAL WARMING

4 degrees to danger

■ Higher rate of warming threatens life on earth

Copenhagen, Nov. 2: Time is running out to limit global warming to 2°C, the UN's climate experts said on Sunday, warning that current trends in carbon emissions will lead to disaster.

In the crowning summary of a landmark review, the Intergovernmental Panel on Climate Change said emissions of three key greenhouse gases were at their highest in more than 800,000 years. Earth is now on a trajectory for at least 4°C warming by 2100 over pre-industrial times — a recipe for worsening drought, flood, rising seas and species extinction.

"The scientific case for prioritising action on climate change is clearer than ever," IPCC chief Rajendra Pachauri said.

"We have little time before the window of opportunity to stay within 2°C of warming closes. To keep a good chance of staying below 2°C, and at manageable costs, our emissions should drop by 40 to 70 per cent globally between 2010 and 2050,

GLOBAL WARMING
IPCC was set up to assess global warming



Solutions are many and allow for continued economic and human development. All we need is the will to change, which will be motivated by knowledge.

RAJENDRA PACHAURI
IPCC CHAIRMAN

■ Emissions may need to drop to zero by the end of this century for the world to have a decent chance of keeping the temperature rise below danger levels

■ Failure to do so, which could require deployment of technologies that suck greenhouse gases out of the atmosphere, could lock the world on a trajectory with "irreversible" impacts on people and the environment

■ Earth is now on a trajectory for at least 4°C warming by 2100 over pre-industrial times — a recipe for worsening drought, flood, rising seas and species extinctions

■ Today's report encapsulated three previous volumes and were written by more than 800 experts

falling to zero or below by 2100."

The report — the first overview by the Nobel-winning organisation since 2007 — comes ahead of talks in Lima next month to pave the way to a 2015 global pact in Paris to limit warming to 2°C.

But the negotiations have been hung for years over which countries should shoulder

the cost for reducing carbon emissions, which derive mainly from oil, gas and coal — the backbone of the world's energy supply.

The report said switching to cleaner sources, reducing energy efficiency and carrying out other emission-mitigating measures would be far cheaper than the cost of climate damage.

The bill on Sunday for doing this is affordable, but delay would cause it to rise substantially for future generations. "Mitigation cost estimates vary, but...global economic growth would not be strongly affected," the IPCC said, estimating that "ambitious" carbon curbs would shave 0.06 percentage points annually from global consumption this century, that is targeted to grow by 1.6-3 per cent annually.

"Compared to the imminent risk of irreversible climate change impacts, the risks of mitigation are manageable," said Youba Sokona, one of the lead authors of the new report. The document painted a bleak tableau of a 4°C world, marked by hunger, homelessness, species loss and violent conflict over scarce resources.

It was set up in 1988 to provide governments with neutral and objective advice about global warming, impacts and the options for tackling it. Today's report encapsulated three volumes published over the last 13 months.

—AFP

Deccan Chronicle, Hyderabad
dated November 05, 2014

CLEAN INDIA

■ Study blames higher air pollution for falling yield in India

Air pollution halves India's grain yield

Rome, Nov. 4: Air pollution seems to have a direct negative impact on grain production in India, a study warned on Monday, with recent increases in smog decreasing projected yields by half.

Analysing 30 years of data, scientists developed a statistical model suggesting that air pollution caused wheat yields in densely populated states to be 50 per cent lower than what they could have been in 2010.

Up to 90 per cent of the decrease in potential food production seems linked to smog, made up of black carbon and other pollutants, the study said.

Changes linked to global warming and precipitation levels accounted for the other 10 per cent.

"The numbers are staggering," Jennifer Burney, an author of the study and scientist at the University of California said.

"We hope our study puts the potential benefits on cleaning up the air on the



table," she said, noting that agriculture is often not considered when governments debate the economic costs of air pollution and new legislation aimed at combating it.

The research paper *Recent climate and air pollution impacts on Indian agriculture* published in the Proceedings of National Academy of Sciences, analysed what wheat production could have been if there was less pollution.

Food production in India continues to increase because of new technologies and management techniques.

Scientists examined historical data on crop yields, emissions, and

precipitation to draw their conclusions.

While tackling global warming requires international action, reducing smog is often a simpler process that can take place at the national level.

"The technologies to fix this problem exist," Burney said. Trucks need better particulate filters for diesel, and the Indian government should help rural residents use cleaner fuels in their cooking stoves, rather than biomass, she said. — Reuters



CSR and the 5 km Concept



Faisal Patel

The 1991 liberalisation reforms increased the role of the private sector in the Indian economy. In the past 23 years, private sector contribution to the GDP has increased by over 75%. Today even though India has over 1.4 million registered companies, organised industry employs a minuscule part of India's workforce.

The disproportionate role of industry — in terms of resource allocation and employment — over our economy calls for a collaborative developmental strategy where the responsibility of public welfare is shared between the state and eligible private actors. Thereby the mandated corporate social responsibility (CSR) funding under the provision of the Companies Act of 2013 was a much welcomed initiative towards this objective.

The legislation placed India as the first country in the world to codify the social obligation of the private sector, thereby giving rise to a unique developmental model that could serve as a template for emerging countries with similar complexities. Hence, India has an additional responsibility to ensure proper implementation and execution of this landmark legislation.

With \$2 billion annually at stake, the CSR guidelines, if implanted in letter and spirit, could have a tremendous impact on our socio-economic landscape. While the CSR legislation outlines priority areas for funding, it also has a rather less noticed — and even less implemented — guideline that 'advise' companies to invest a part of their CSR funds in areas of business operations.

Unfortunately a handful of firms currently adhere to this advisory. There have been instances of firms spending their CSR funds far away from areas of business operation. A significant number of companies simply donate their CSR budgets to NGOs, religious trusts or charitable institutions that work in zones unrelated to business activity. The government, too, doesn't capture finer details of how companies actually spend their CSR money.

Prioritising local spending of CSR funds has two distinct advantages for the company and the stakeholders in its vicinity. First, it enhances the entire business ecosystem and can boost overall productivity. While an efficient factory

can operate in an extremely backward town, in the long run, social costs (absence of local skills, lack of local goodwill, etc) could begin to have an impact on the profitability of business operations.

Second, local spending of CSR funds makes companies more accountable as it becomes easier to measure the impact of their CSR policy. Since the exact location of CSR funding is not mandated, firms also use this as a loophole to dilute the intent of this legislation. Also, businesses have a social obligation to first benefit the immediate vicinity that contributes to their revenues.

Every company must try to adhere to the '5 km Concept' — channelise all its CSR resources in a 5 km radius of business operations. Thereafter, it can move on to other geographical areas. If every factory or company can first concentrate their CSR activities in this immediate 5 km vicinity, the collective outcome could be pathbreaking. Such CSR activities could include training local unskilled labour, investing in local healthcare and education.

India has over 800,000 companies that fall under the ambit of the CSR

Every company must try to adhere to the '5 km Concept' — channelise all its CSR resources in a 5 km radius of business operations. Thereafter, it can move on to other geographical areas.

policy. Even if less than 10% adopt the '5 km Concept', the change over 4 lakhs sq kms will be phenomenal (an area slightly less than the combined area of Maharashtra and Gujarat). Policy experts agree that local CSR spending should be encouraged but argue that making it mandatory will be a challenge in terms of monitoring and oversight. Hence, industry needs to promote voluntary compliance in this regard. Industry associations like CII, FICCI and ASSOCHAM should step in and educate lakhs of labour-intensive businesses, particularly those which operate from smaller towns and cities, on the importance of local spending.

A key intent behind making CSR spending mandatory was just not to increase participation, but also to generate social capital for companies. The legislation won't serve its intended purpose if companies treat their CSR activity as just a 'government regulation' compliance. It is imperative that companies realise that internalising this unique legislation could firmly place them as critical agents of social change.

The writer is President, Zion Distribution

Times of India Delhi
dated November 05,
2014

Climate talks: India mulls shift in stand

Likely To Take Different Line From China

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New Delhi: Climate negotiations in the run-up to the global deal in Paris next year may not be on predictable lines. After trade, the Narendra Modi government is now contemplating a strategic shift during talks, delinking India's position from China.

Unlike the past where both India and China remained on the same page while battling for developing countries, a clear view is emerging in the government that its strategic interests should be pursued while taking a pro-active role in negotiations.

The shift may get reflected as early as during the G-20 meeting in Brisbane next week. It is learnt that it was India that insisted on including the climate issue in the agenda of the meeting despite strong resistance from China.

Although India will continue to insist that the global climate deal should have the principles of the UNFCCC (United Nations Framework Convention on Climate



In the past, India and China remained on the same page

Change) and Kyoto Protocol that call for only rich nations to cut emissions while demanding money for poor countries to take voluntary action, it may now start questioning the idea of keeping the world's highest carbon emitter China in the same league as the other developing countries.

Climate negotiation strategists within the government here feel that the move may help some manufacturing activity to shift to India from China. Although China argues that its emission is mainly due to production activities for exports, the argument is seen as an excuse for its inaction.

The idea to question China on this issue emerged

while drafting a strategic paper for the forthcoming Lima climate conference next month where India will insist on 'adaptation' than on 'mitigation' (emission cut in any future climate deal).

"Though India will adhere to the joint stand taken by the BASIC group of countries including China, Brazil and South Africa on broader issues, New Delhi may now differ on specific issues which may be affecting its own economic interest," said an official involved with the discussions to strategize India's move for the next year in the run-up to the Paris deal. He said, "It is time for India to take a lead role while keeping its national interest in mind."

The Economic Times, Delhi
dated November 05, 2014

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Report Brings an Opportunity and Challenge for India

Shows way toward sustainable development

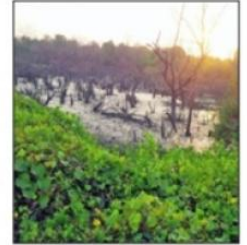
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New Delhi: India's quest for high growth and efforts to ensure development and access to energy for its people has found recognition in the latest report of the United Nations-backed Intergovernmental Panel on Climate Change, or IPCC.

The synthesis report of IPCC's fifth assessment report (AR5) released on Sunday stresses that every effort to ensure that global temperatures do not rise by dangerous levels of 3°C-4°C would require "substantial emission reductions over the next few decades and near zero emissions of carbon dioxide and other long-lived greenhouse gases by the end of the century".

The report also makes it clear that simply adapting to climate change is not enough; more needs to be done globally to reduce emissions. "There are certain limits that adaptation can cope with" said Purnamita Dasgupta, coordinating lead author of the AR5 Working Group II, adding that "emissions are driven by population size, economic activity, lifestyle, energy use, land-use patterns, and technology and climate policy. There are multiple ways in which adaptation and mitigation responses can be designed to improve climate resilience for sustainable development."

The synthesis report, which distils and integrates the three Working Group reports, and two special reports of the IPCC, highlights that there are measures and opportunities that link emission reduction, adapting to climate change and sustainable development. "Humans have been dealing with and adapting to climate issues



in past with traditional methods. The important thing to remember is while you can build on that experience that is not going to be adequate, because, the extent of climate change and its impacts are progressively becoming more serious and what we have come up with as the roadmap of future involves taking an adaptation measure as part of development strategy," IPCC chairman RK Pachauri said.

For India, which like many other developing countries, has consistently maintained that its development imperatives determine its climate policies, the report provides a solution that allows it to meet its development goals in a manner that is not inimical to addressing climate change. It presents India with both an opportunity and a challenge.

"The IPCC synthesis report suggests a way of thinking about climate change that is deeply relevant to India," said Navroz Dubash, a lead author of AR5. "There is a complex two-way relationship between sustainable development and climate change: climate policies should support sustainable development. India has to increasingly internalise climate considerations into development planning," he said.

The Economic Times, Delhi dated November 06, 2014

Govt Reconstitutes Climate Change Panel, No Member from Industry

Council to focus on action for assessment, adaptation & mitigation of climate change

Our Bureau

New Delhi: Barely three weeks before crucial negotiations in Lima, the government has reconstituted the Prime Minister's Council on Climate Change, reducing its size and dropping members, including sole industry representative Ratan Tata and Centre for Science and Environment director general Sunita Narain.

The 18-member council headed by Prime Minister Narendra Modi will, like its predecessor panel, focus on national action for assessment, adaptation and mitigation of climate change. ET had first reported about the Prime Minister's plan to reconstitute the panel (October 9).

While the council will advise the government on domestic measures on climate change, it is clear from its membership that the deliberations of the panel would feed into India's stance in the global negotiations. The Intergovernmental Panel on Climate Change said in a report on Sunday the window of opportunity for governments to prevent the severe and irreversible impact of climate change was fast closing.

The reconstituted council comprises mostly the ministers for external affairs, finance, environment, water, agriculture, urban development, science and technology, power, coal and renewable energy, as well as the cabinet secretary, foreign secretary and environment secretary. As in the previous council,



ministers handling rural development and industry have been left out.

"The preponderance of government members does not mean that the government is not interested in experts and other voices," a senior official said. "The panel has been reconstituted in a manner to ensure wider and diverse participation of experts, without additional demands on their time, as would be the case if they were to be full-time members."

IPCC chief and the Energy & Resources Institute chairperson RK Pachauri, economist Nitin Desai and Chandrashekhar Dasgupta, former diplomat and a member of the Indian climate change negotiating team up until the Copenhagen round of talks in 2009, were retained.

Ajay Mathur, director general of the Bureau of Energy Efficiency, also remains on the panel. Mathur was a member of India's negotiating team in Dur-

ban and the key architect of the climate technology arrangements set up under the United Nations Framework Convention on Climate Change (UNFCCC).

The new entrant to the panel is JM Mauskar, former co-chair of the Ad-hoc Working Group on the Durban Platform, under the aegis of the UNFCCC. Mauskar, a long-standing member of the Indian negotiating team, was special secretary in the ministry of environment and forests.

The panel is left with no industry representation after Tata was dropped. Industry is a key stakeholder in addressing climate change, especially since the focus will be on increasing the share of renewable energy and introducing mandatory energy efficiency norms in manufacturing processes, buildings and appliances.

"The government has opted not to name any one member of industry to allow for wider and more focused participation. This will allow for the government to invite representatives of the different sectors to join the panel's deliberations on a sustained and fruitful basis," official sources told ET.

Countries have agreed to put in place a new global compact to address climate change and limit its impact by December 2015 in Paris. As part of this effort, each country is expected to put forward efforts and actions to tackle climate change.

There is some apprehension that the choice of members may preclude a more pro-active engagement by India at the climate talks.

The Times of India, Delhi dated November 06, 2014

City gasps as neighbours burn waste

TIMES NEWS NETWORK

New Delhi: Air quality in Delhi has deteriorated substantially since the last week of October.

On Wednesday, the pollution levels were the highest after Diwali—October 23 and 24. System of Air Quality Weather Forecasting and Research (SAFAR), under Indian Institute of Tropical Meteorology (IITM), has linked the peaking of PM2.5 (fine, respirable particles) to burning of agricultural waste in Punjab and Haryana. In fact, monitoring by SAFAR revealed that Patiala in Punjab recorded the highest PM2.5 and PM10 (coarse particles) levels over the past few days.

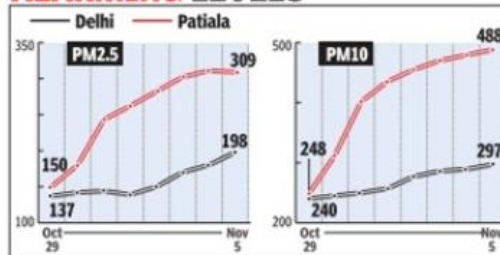
On the bright side, the temperature hasn't fallen too much as it would have aggravated the smog-like conditions. However, PM2.5 levels have gone up to almost 200 microgram per cubic metre compared to 137 on October 29. Noida was the worst placed with PM2.5 hovering around 280 micrograms per cubic metre. IITM's other project, Modelling Air Pollution and Networking, which

monitors air quality in 12 other cities, has found alarming pollutant levels in Patiala with PM2.5 touching 309 microgram per cubic metre and PM10 settling at 488.

"Our assessment shows that air pollution levels have gone up in Delhi because of biomass burning in Punjab. It stands to reason as Patiala has been recording very high PM2.5 and PM10 levels. The winds blowing towards Delhi from the northwest are passing by the area where a lot of agricultural waste is being burned. If it gets colder in the coming days, the smog will intensify," said Gufran Belg, chief project scientist, SAFAR. Recent images from NASA suggested a thick blanket of aerosols lying over northern Indian states, including Delhi. It also showed dots of fire in the Punjab-Haryana region.

The combination of pollution from neighbouring states and local emissions is already taking its toll. "Every year after Diwali, complaints from people with asthma and bronchitis go up. Their aggravated condition is clearly linked to high air pollution

ALARMING LEVELS



At 280 micrograms per cubic metre, Noida records the highest PM2.5 level on Wednesday

Safe levels | PM2.5: 60 & PM10: 100

FORECAST FOR DELHI (PM2.5/PM10)
Nov 6 | 202/300
Nov 8 | 210/322

which also leads to more hospitalization. Nasal and sinus problems also increase. Those who are healthy often experience with cough or throat problems. If you don't consider the infections during monsoon, the jump in cases of aggravated bronchitis or asthma is 30% to 35% compared to those in summer. We have seen an overall jump in asthma and chronic bronchitis in Delhi over the years," says Dr Neeraj Jain, senior consultant of chest medicine at Sir Ganga Ram

Hospital.

Experts say biomass burning is only adding to the already high local emissions. "We have been tracking air pollution since July. In July and September there were some days with low pollution; in October, pollution levels have crossed the limit on all days. We may see some spike due to external events like Diwali or biomass burning but that's only because the existing levels are alarming. Even after biomass burning, every winter PM2.5 and PM10 lev-

els are extremely high," said Anumita Roy Chowdhury, head of the clean air programme of Centre for Science and Environment.

Even rural areas are not spared. A research paper, 'Recent climate and air pollution impacts on Indian agriculture', published recently in the Proceedings of National Academy of Sciences, analysed the impacts of pollution over 30 years and found that short-lived climate pollutants (SLCPs) like smog, ground-level ozone and black carbon may have reduced India's potential wheat yields by about 50%. IITM scientists said their own studies have also found severe impacts on agricultural output from ground-level ozone.

According to US Environment Protection Agency, ground-level ozone is not emitted directly into the air but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOCs). Ozone is likely to reach unhealthy levels on hot sunny days in urban environments. Ozone can also be transported long distances by wind.

The Times of India, Delhi dated November 07, 2014

IPCC dropped graph exposing rich nations?

Chart Shows How Their CO2 Consumption Is Increasing Rapidly: CSE

Vishwa.Mohan@timesgroup.com

New Delhi: Four days after the UN-backed Intergovernmental Panel on Climate Change (IPCC) brought out its detailed findings predicting a gloomy future for the world if it fails to cut emissions drastically, Delhi-based research and advocacy group Centre for Science and Environment (CSE) on Thursday claimed the global body had dropped a key 'graph' from its synthesis report which was "inconvenient" to rich nations.

The dropped 'graph' shows how developed countries shy away from focusing on their fast growing consumption-based emissions. They instead, prefer to project their success in reducing production-based emissions over the past few years.

CSE said, the chart indicates that the production-based emissions of these countries have decreased because they shifted the manufacturing base to the develop-

ing countries and have been fulfilling their domestic requirements through imports. Although the CSE has consistently been in full agreement with the IPCC over its findings and analysis, in this instance, they believe, the climate panel succumbed to the politics of climate change.

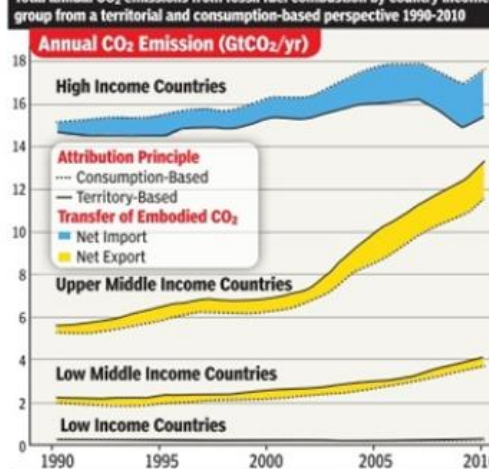
IPCC chairman R K Pachauri, however, rejected the claim, saying "this is completely wrong". In a text message to TOI, he said, "There was not a single figure which was dropped from the synthesis report. Every figure from the draft submitted for approval was retained intact".

The IPCC later tweeted that "the chart CSE refers to is on page 16 of the Working Group III Technical Summary. It was not dropped". Though the important chart was there in the WGIII summary, it could not find place in the final synthesis report.

Flagging the matter in its annual media briefing on climate change, CSE's deputy

COMBUSTION CURVE

Total annual CO₂ emissions from fossil fuel combustion by country income group from a territorial and consumption-based perspective 1990-2010



chief and the group's climate expert Chandra Bhushan on Thursday highlighted that the 'graph' was in the draft report of working group-III of the

IPCC but it was finally dropped from the synthesis report. The synthesis report, released in Copenhagen on Sunday, distilled and combined all the three

working group reports of the panel which were brought out by it in the past 13 months.

Bhushan said, "The chart actually shows how consumption in developed countries is increasing rapidly and that consumption is being supported by developing countries". He said had this 'graph' been part of the report, it would have been a "big embarrassment" for developed nations, which are the top emitters.

CSE chief Sunita Narain said, "They (developed countries) are still consuming. Actually the rich have not reduced (emissions) at all. They exported it (emissions) to developing world including China and India. They pretend to be reducing emissions but are not actually reducing it. This is the dirty politics." She later also tweeted the 'graph', saying the chart that went missing in the IPCC final report shows how rich countries have not reduced emissions.

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

Main lakes get dirty

■ Osmansagar, Himayatsagar exposed to 50 polluting firms

SUDHEER GOUTHAM |
DC
HYDERABAD, NOV. 6

The city's two major reservoirs behind the Golconda Fort, Osmansagar and Himayatsagar, are getting polluted at an alarming rate thanks to the industrial units in its catchment area.

Also, sewerage water from residential areas situated along the small stream of the reservoirs continuously flows into the reservoir, making it a breeding ground for bacteria.

The AP High Court in 2010 had directed the State Pollution Control Board to ban existing industrial units within a 10-km radius of Osmansagar (Gandipet) and Himayatsagar.

However, the PCB, which took commitment letters from the polluting industries on directions from the High Court, has failed to pursue the issue and evacuate the polluting industries.

In the Katedan Industrial limits, falling in the catchment area of the two reservoirs, textile dyeing and printing units, edible oil refineries and lead extraction units have mushroomed.

"After the court's directions, certain battery, oil and textiles units were moved from that area, however, more than 50 potentially polluting industries are still functional in the area. For years they have been dumping untreated or at best diluted industrial effluents into the *nalas* and nearby lakes. The waters of the lakes have become pink and emanate an obnoxious odor. There are good

Osmansagar, popularly known as Gandipet has a unique place in the hearts of the Hyderabad public. People swear by its curative properties which they claim is a panacea.

THE DIRTY TRUTH

■ State High Court in 2010 directed the State Pollution Control Board to ban the existing industrial units within a 10-km radius of the two reservoirs — Osmansagar and Himayatsagar

■ According to PCB report the quality of water in the reservoirs is Class C

■ There are over 500 bacteria in every 100 ml of water

■ The bacteria found in this class of water usually breeds in sewerage

■ The HMWS&SB sources 40 MGD of water for distribution on a daily basis from

chances that these pollutants could seep into the groundwater and spread," said Dr Lubna Sarwat of Save Our Urban Lakes (SOUL).

A Telangana State Pollution Control Board (TS PCB) official, on condition of anonymity, said, "Over 43 of the 59 polluting industries are still operational in the banned region. We will soon issue them show-cause notices." He added, "We have held a discussion with them along with the Telangana State Industrial Infrastructure Corporation (TSIIC) for their relocation."

While seeking a status report on its directions

IN BETTER TIMES

Dr. S. JEEVANAND REDDY, CONVENER FOR FORUM FOR SUSTAINABLE ENVIRONMENT, QUOTES AN OLD HYDERABADI SAYING, "GANDIPET KA PAANI PIYE TOH IDHARICH MARNA!" (ONCE YOU'VE DRUNK OF THE WATERS OF GANDIPET LAKE YOU HAVE TO DIE HERE!).

Quality of water sees drastic fall

DC CORRESPONDENT
HYDERABAD, NOV. 6

People believed that the waters of Osmansagar, popularly known as Gandipet, has curative properties. However, recent reports show otherwise.

As per the PCB reports, the water quality of the two city reservoirs, Osmansagar and Himayatsagar, fall under the 'C' category (drinkable only after purification) with more than 500 bacteria in every 100 ml of water.

A senior environmental scientist with the Telangana Pollution Control Board said, "The water belongs to the 'C' category with more than 500 Coliform bacteria. This bacteria usually breeds in sewerage."

PCB lab categorises

the water into three types: Class A — the freshest water, Class B — mid grade and Class C — water will be drinkable only after proper disinfection and chlorination.

A PCB official said, "The sewage from the nearby residential areas is kept flowing into the water despite our warnings. Even cattle and other animals are bathed in the water body."

Presently, the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB) sources 40 MGD (million gallons of water per day) water from these two reservoirs.

The city Water Board, however, claims that the water is properly treated by them and is pure.

recently, the Hyderabad High Court had expressed its displeasure at the PCB for failing to take action against the units despite closure orders.

An official source said, "Though these industries

bought land to set up their industries in Toopran and other areas in the city outskirts, they are facing resistance from villagers, and the gram panchayat has not issued them permits."

Deccan Chronicle, Hyderabad
dated November 07, 2014

The Times of India,
Delhi dated
November 08, 2014

Paddy fires in states feed smog in capital

Air Quality May Get Worse, Warn Scientists

TIMES NEWS NETWORK

New Delhi: Smog intensified in the city as wind speeds reduced on Friday, leading to an accumulation of pollutants and aerosols. A Nasa satellite image showed agricultural fires in Punjab and Haryana were contributing to pollution in the region in a big way.

According to IGI's Met office, a 20-25kmph wind on Thursday had helped clear the pollution over the city, leading to a good visibility of 4,000 metres. The wind calmed on Friday morning and visibility dropped to about 1100 metres in most parts of the city.

According to R K Jenamani, director of IGI Met, smog may intensify further in the next 48 hours as weather models forecast calm winds in the coming days. A western disturbance (WD), currently moving across Jammu and Kashmir, may bring fresh moisture and help in intensifying the smog.

Images released by National Aeronautics and Space Administration (NASA) from its Moderate Resolution Imaging

FARM FIRES & DELHI SMOG



Spectroradiometer (MODIS)'s aqua satellite also shows low visibility and smog forming a channel from north-northwest region, fed by smoke coming from Punjab and Haryana where farmers are currently burning leftover stubbles from the paddy crop.

Expectedly, air pollution levels are also up. PM 2.5 (fine, respirable particles) was 189 micrograms per cubic metre on Friday, three times more

than the safe level of 60. PM 10 (coarse pollution particles) was about 320 microgram per cubic metre as against a safe level of 100 microgram per cubic metre. According to Gufran Beig, chief project scientist, "pollution levels may move to very poor category on Saturday from the poor category now as per the air quality index (AQI). PM 2.5 levels may go up to 210 micrograms per cubic metre on Saturday," he said.

The Times of India, Delhi dated
November 08, 2014

6 yrs on, Neela Hauz a dead pond

DDA Still Draining Waterbody To Remove Deep Silt Layer, Will Take 6 More Months To Revive It

Neha Lalchandani
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New Delhi: The Delhi Development Authority was supposed to have revived Neela Hauz by February 2013, but a year and a half later, the waterbody is still being drained for desilting. Officials say it will take at least another six months before a pristine waterbody will replace the existing pond of sewage that Neela Hauz has been reduced to.

For the past few days, those living around the waterbody have been complaining that it had almost run dry and only a single channel of sewage was flowing through it.

"It looks almost dead. Only lapwings can be spotted—birds usually found around filthy water. The waterbody has been less parched during summer," said a resident.

While DDA claims it has already redeveloped the waterbody, Dr C R Babu, professor emeritus from DU who has been entrusted with developing a biodiversity park around the hauz, says they are still draining out the water.

"For about a month, we have been diverting the sewage through a channel which is then allowed to flow into the adjoining Sanjay Van; 2.3m of silt has formed on the bed because untreated sewage has been the only source of water. Neela Hauz has never been desilted and a massive



amount of debris remains which has prevented us from undertaking plantation," said Babu.

Babu says desilting will take at least two months; developing a wetland that

will treat sewage before it is allowed into the waterbody will take a month, after which aquatic plants will be introduced.

"It will take at least six months before the water-

body is properly revived," he said.

The hauz was filled up in 2008 to facilitate the construction of a flyover across it, a Commonwealth Games project.

After protests by residents of nearby colonies and environmentalists, then Lieutenant governor Tejendra Khanna and former chief minister Sheila Dikshit assured Delhiites that the waterbody would be redeveloped by the time the CWG started in October 2010.

When nothing moved

that year, a PIL was filed in the high court, which first set a deadline of May 2011 and then February 2013.

For the longest time, renewal of the waterbody could not start because Public Works Department, which constructed the flyover and DDA, the land-owning agency, were embroiled in a tussle over who would remove the 45,000 cubic metres of earth that had been dumped into the waterbody and the debris that had found its way into it during the course of construction.



MESSY AFFAIR

Early 2008: Neela Hauz filled up with about 45,000 cubic metres of earth for construction of a flyover, a Commonwealth Games project

May: Work starts on flyover

Sep 2009: Expected date of completion

July 2010: Flyover opened for traffic

Oct: First deadline for restoration of waterbody

May 31, 2011: Deadline set by HC for restoration

Feb 28, 2013: Fresh deadline

Nov 2014: Waterbody partially dry and only sewage flowing into it

The Times of India, Delhi dated November 09, 2014

Yamuna unlikely to be clean by '17

Studies Show Statement Of Japan Agency Top Official May Be Optimistic

Jayashree Nandi
& Neha Lalchandani | TNN

New Delhi: The unusual optimism displayed by Japan International Cooperation Agency regarding cleanup of Yamuna in the capital calls for a reality check.

JICA has been providing financial support to the Yamuna Action Plans for 22 years now. But there has clearly been no difference in pollution levels. It's not just the water quality test reports. A glance at Yamuna in Delhi shows how it continues to resemble a sewer.

JICA has invested about 63 billion yen or about Rs 3,587 crore since 1992 in YAP I, II and III. The objective of the YAPs is to "improve the water quality of river Yamuna by modernization of sewage treatment plant and rehabilitation and replacement of the existing sewage system, thereby contributing to improved public health conditions". But the claims of Shinya Ejima, chief representative, JICA, on making Yamuna water drinkable by 2017 seem implausible. This is why.

A recent study by The Energy and Resources Institute found that YAPs have made no difference to the water quality. Studies by Central Pollution Control Board have also suggested the same, so have monthly water quality monitoring reports by the Delhi Pollution Control Committee. Since

UNFIT FOR DRINKING

One year has passed, yet quality of water in Yamuna continues to be poor

January 2013 ■ August 2014



BOD: Biochemical oxygen demand; COD: Chemical oxygen demand; DO: Dissolved oxygen; pH: Acidity-basicity index; Class C: Drinking water source after disinfection and treatment

Location	pH		COD (mg/l)		BOD (max in mg/l)		DO (min in mg/l)	
Standard for Class C	6-9	6-9	3	3	4	4	5,000	
Palla	7.2	7.2	32	12	3	1.4	10.2	9.1
Surghat	7.0	7.4	56	16	7.6	2.4	6.4	5.8
Khajuri	6.9	7.3	280	160	75	52	Nil	Nil
Qudsia Ghat	6.9	7.1	68	108	22	30	Nil	Nil
ITO Bridge	6.8	7.2	108	100	30	32	Nil	Nil
Nizamuddin Bridge	7.3	7.9	84	56	22	19	Nil	4.0
Agra Canal	7.1	7.4	72	64	22	26	2.0	3.0
Shahdara Drain	7.0	7.6	144	80	35	24	Nil	1.8
Agra Canal Jaitpur	7.1	7.5	40	76	18	22	4.5	2.8

Source: DPCC

mid-2013, DPCC strangely stopped monitoring total coliform and fecal coliform levels.

Experts continue to flag the same problems. "Yamuna needs environmental flow to be rejuvenated. Sewage treatment is an urbanization challenge and it needs to be done but it can't be called river rejuvenation. The solution for Yamuna lies 200km upstream of Delhi at Hathnikund Barrage," Manoj Misra of Yamuna Jiye Abhi-

yan said. He pointed out that during the YAPs the dead length of the river has increased 100km according to evaluation by CPCB.

Responding to TOI's questions about how they can make Yamuna clean by 2017, JICA said their spokespersons were "travelling today and are unfortunately not in a position to respond to queries".

They, however, clarified that Ejima's claims were based

on their assessment of the projects. "JICA's ambitious plans of making Yamuna water drinking quality are very optimistic but I want to know what they were doing for the last 20 years," said Misra.

There has been no independent monitoring of YAPs by the government since 2002. Meanwhile, a few other projects are being seen as crucial for Yamuna—the interceptor sewer project under Delhi Jal

Board and the recent partnership with the Netherlands government which involves construction of three mega-reservoirs upstream of Wazirabad barrage, in Hindon and at the confluence of two rivers. It also aims to make Yamuna navigable.

"After full implementation of the interceptor sewer project, we are expecting the biochemical oxygen demand to come down from 41mg/l to 12 mg/l. In the Najafgarh drain it will be down from 50 mg/l to 14 mg/l while for supplementary and Shahdara drains, it will be down to 11 mg/l," said a source.

The city is already treating 360 MGD of sewage and the interceptors are likely to increase that by another 200 MGD. DJB is supplying 840 MGD of water across Delhi and, presuming that 80% of that is discharged as sewage, the city should at present be treating 672 MGD of sewage. This is where troubles for the interceptor system start.

Critics say that, despite the heavy investment, the project is simply not equipped to treat the sewage that will be generated in the city in the coming years, since DJB has underestimated the amount of sewage that is being generated even now. Consequently, it will not be effective in bringing down the pollution load in the river to bathing quality levels as desired by the Supreme Court.

The Times of India, Delhi dated November 10, 2014

Smog scare: Patients told to stay indoors

TIMES NEWS NETWORK

New Delhi: Air quality in the city is deteriorating every day as agricultural waste burning continues unabated in Punjab and Haryana. Doctors, too, are seeing a jump in cases of acute bronchitis, chronic obstructive pulmonary diseases (COPD) and asthma. They are advising those who are vulnerable or already suffering from respiratory disorders to avoid going out during peak traffic hours, keeping inhalers handy and, if smog is severe, recommending a few weeks stay outside Delhi.

The PM2.5 (fine respirable particles) levels have increased from 180 microgram per cubic metre on November 4 to about 205 microgram per cubic metre on November 9,

WEATHER

Max 31.6°C / Min 17.2°C
Moonrise: Monday - 8:36pm
Moonset: Tuesday - 10:24am
Sunset: Monday - 5:31pm
Sunrise: Tuesday - 6:40am
Mainly clear sky with mist/shallow fog in the morning. Maximum & minimum temperature on Monday will be around 32°C & 16°C. Max humidity on Saturday was 90% and minimum 37%

about 3.5 times the safe standard of 60 microgram per cubic metre. PM10 (coarse particles) increased from 289 microgram per cubic metre to 315 on Sunday. At 6.45pm, the PM2.5 level at Mandir Marg was 303 microgram per cubic metre, five times the standard and at RK Puram it was 343 microgram per cubic metre, almost six times the standard.



HEALTH HAZARD: Doctors suggest leaving the city for a few weeks

According to IGI airport's met department, smog formed and reduced visibility on November 8 midnight to late morning of November 9. For about eight hours, the visibility remained at 400 to 500 metres. More smog is expected

in the next few days.

Meanwhile, doctors are seeing a sudden jump in complaints of acute respiratory conditions and associated complications. Dr Randeep Guleria, professor and head of pulmonary medicine at AI-

IMS, said, "Due to the PM2.5 level being very high, there is a 10-15% increase in complaints of asthma and COPD. We are suggesting that those who are vulnerable should keep relief medication and inhalers. They should avoid travel during peak hours and around mid-day."

The link between lung cancer and air pollution is not directly established, but Guleria said some studies do link lung cancer. His department is planning to conduct a study linking hospital admissions with air pollution in Delhi.

The air pollution levels on Monday for PM2.5 and PM10 is likely to be 215 microgram per cubic metre and 350 microgram per cubic metre, respectively, according to a forecast by SAFAR, IITM.

The Times of India, Delhi dated
November 10, 2014

Fbd greens at risk: NCR panel

65% Forests Lost Since 2005, Conservation Zone Shrinks By 26%

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New Delhi: An affidavit filed by National Capital Region Planning Board in National Green Tribunal recently called attention to the alarming shrinkage in NCR's natural conservation zones (NCZ). Now, an RTI enquiry has found which land use categories and portions have been lost in each state since 2005.

In Delhi, area of waterbodies has shrunk since 2005 by as much as 22.64% while area of forests and wastelands has come down by 15.67% and 11.4% in the same time. The total NCZ area lost in Delhi is 15.43%.

The query by Rohit Choudhary of EIA Resource and Response Centre has also found that NCZ area in Faridabad has shrunk by a whopping 26%. It has declined by only 1% in Gurgaon. In Faridabad, the largest NCZ area lost seems to be forests. Area of waterbodies decreased 27.51% from 2,737.98ha in 2005 to 753.19ha in 2012, but that of forests fell from 3,747.23ha to 2,446.95ha—a decline of 65.27%. NCZs comprise environmentally-sensitive areas

VANISHING NATURE



LAND USE (DELHI)	2005	2012	AREA VARIATION	
			in hectare	in %
Forest	7,008.67	5,910.27	1,098.40	-15.67
Wasteland	5,474.39	4,849.14	625.25	-11.42
Waterbodies	2,909.69	2,250.85	658.83	-22.64
Groundwater rechargeable area	44.31	44.37	-0.05	0.12
Total NCZ area	15,437.06	13,054.63	2,382.43	-15.43
Faridabad	15,401.55	11,400.68	4,000.87	-26
Gurgaon	19,417.29	19,215.61	201.68	-1

TENTATIVE LOCATIONS WHERE VARIATIONS HAVE TAKEN PLACE

Bawana, Puth Khurd, Khera Khurd (along railway line), Alipur, Burari, Bakhtawarpur, Mehrauli, Mahipalpur, Karol Bagh, Asola sanctuary, Mandi, Aya Nagar, Chhatarpur, Fatehpur Beri, along the Yamuna near Gandhi Nagar, Badarpur border, Mithe Pur, Asola, Qutabgarh, Jaunti, Raoti, Ghuman Hera, Kangan Heri, Dhausa, Chhawla, Tikri Kalan and others

like Aravalis, rivers Yamuna, Hindon and Kali, lakes Badkhal, Damdama and Surajkund and salt ravines. No large construction, real estate or industry is allowed in these areas.

In Delhi, forest areas have been lost even from Asola Bhatti Sanctuary—a protected area—and from Yamuna banks.

The RTI query cites several

letters from NCRPB to the lieutenant governor and the chief secretary asking for an explanation for this loss. A letter from Naini Jayaseelan, member secretary of NCRPB, to LG Najeeb Jung even requested him to deploy someone to look into the matter after she did not receive a reply from the chief secretary's office. "The reason

why so much of NCZ has been illegally diverted or lost in Faridabad may be because the Aravali notification does not cover the district unlike the case in Gurgaon," said environmental analyst Chetan Agarwal said.

In UP, the maximum depletion was in Gautam Budh Nagar—55%—followed by Bulandshahr and Ghaziabad-Hapur.

The Economic Times, Delhi dated
November 10, 2014

Navi Mumbai to House Largest Solar Panel Installation on Dam

IITian-founded 3-year-old company carrying out the 20 MW project

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New Delhi: The Morbe dam on Dhavari River in Navi Mumbai is going to house something unique: a solar panel installation big enough to generate 20 megawatt of power.

A three-year-old company that is carrying out the ₹162 crore project claims the installation to be the largest in the world on a dam barrier, and the first in India.

India already has several solar power installations on top of canals, the biggest being an under-construction 10 MW project on a Narmada canal in Gujarat, but none on a sloping wall. To make matters complicated, the Morbe gravity dam has an earthen slope, said Rahul Gupta, an IIT-Roorkee alumnus and founder of Rays Power Experts, which got the contract from the Navi Mumbai Municipal Corporation.

"The other side of the wall will have a huge amount of water, so the construction has to be done in a way that it doesn't puncture the wall," said the 27-year-old. "It also needs to be made sure that future



maintenance is easy and the solar panels are not spoilt by salty water."

The project is scheduled to be completed by the end of March next year.

"The safety of the three-kilometer-long dam is our topmost priority, but as a skilled team of 125 young engineers from IITs and NITs, we are looking for newer technical challenges," Gupta said. Solar panels will cover the entire stretch of the dam barrier.

Gupta's first assignment was in 2010, the year he graduated. He helped an investor set up a 1 MW facility in his home state of Rajas-

than, in his pursuit to make money to set up his own plant one day. The following years saw Rajasthan becoming the centre of the proliferation of the solar power industry, with increasing focus of the government and private sector on clean energy. Rajasthan now has the second most installed solar capacity in the country — according to Bridge to India, a market intelligence and consultancy firm, the state had 679 MW of solar power capacity at the end of May this year, compared with leader Gujarat's 859 MW.

Gupta was one of those who benefited, and he founded Rays Power Experts in 2011. At the end of this September, the company had an order book of ₹500 crore, and Gupta expects it to double to ₹1,000 crore by March.

The company has orders to install 65 megawatt and is also planning to expand its own power generation capacity — it has a 3 MW facility at Gajner in Rajasthan.

According to Gupta, bagging big projects in one go is not what he is looking for. "My aim is to make every individual capable to set up his own solar power project and have his own energy to use."

*The Economic Times, Delhi
dated November 13, 2014*

US, China Give a Fillip to Climate Talks with Deal on Emission Cuts

Focus now shifts to India, the third largest carbon emitter

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New Delhi: The United States and China, the two biggest emitters of the world, on Wednesday announced a plan to curb their greenhouse gas output to combat climate change, in a move that will infuse energy into the slow-moving climate negotiations.

Under the agreement, jointly announced by US President Barack Obama and his Chinese counterpart Xi Jinping in Beijing, the US has committed to emit 26%-28% less carbon in 2025 than it did in 2005, while China said that it will stop growing its emissions by 2030.

The attention is now expected to shift to India, the third largest emitter that accounts for 6% of global emissions, to see what it brings to the table.

"This is smart politics by the G2—the two most powerful countries in the world. It allows both countries to claim leadership in breathing life into climate talks," said Navroz Dubash, senior fellow at the Delhi-based think tank Centre for Policy Research.

With the world's two big emitters making formal announcements of their intent to emit less carbon, there is an expectation that India will make a substantial announcement in its efforts to curb its carbon emissions.

This is smart politics by the G2—the two most powerful countries in the world. It allows both countries to claim leadership in breathing life into climate talks

NAVROZ DUBASH
Senior fellow, Centre for Policy Research

Jairam Ramesh, former environment minister and India's lead negotiator at Copenhagen and Cancun, said the US-China climate agreement will have implications for India. "This is a definitive paradigm shift with huge implications both for the substance and style of our negotiating strategy," he told ET.

Ramesh said that the international community will now expect India to make some firm commitments for 2025 and 2030. "India has already committed itself to a 20%-25% reduction in the amount of carbon it emits for every dollar of GDP from its 2005 levels by 2020, so there should really be no problem to unveil plans for 2025 and 2030," he said.

Siddharth Pathak, international policy co-ordinator, Climate Action Network International, said the announcement demonstrates that "both China and the US are trying to muster adequate political will for a successful outcome in Paris in 2015".

"It's yet to be seen whether other countries like India who are dragging their feet on post-2020 actions are going to take cues

from this announcement and follow suit, which was the case prior to Copenhagen COP 15," he said.

A highly-placed government source told ET that India is not unduly worried about announcements, particularly that by China. "It is no secret that China is much further ahead in terms of economic development than India, so it can determine by when its emissions will peak. India still has a long way to go," the person said.

India is still holding consultations to firm up its position at the Lima round of talks.

Indications are that New Delhi will present a package of its efforts to reduce the rate of growth of emissions, focusing on domestic efforts to improve energy efficiency and enhance the renewable energy portfolio as its contribution to deviating from the business-as-usual growth trajectory.

The Beijing deal, while injecting momentum into the efforts towards finalising a global climate treaty in 2015, does little by way of tackling political issues that may come in the way of a successful outcome in Paris.

The key political issues that need to be resolved in Lima, before the Paris negotiations, include the differentiation between developed and developing countries in the manner in which they take measures to address climate change, the push by developing countries to ensure that the "contributions" that make the core of the new agreement includes not just efforts to reduce emissions

but also adapting to impacts of climate change, finance, technology and capacity development, and the question of equity.

Nothing in the US-China agreement addresses these issues. China has not indicated that it is giving up on retaining the 1992 firewall between developed and developing countries, which would require developed countries to reduce their emissions in absolute terms while developing countries would undertake measures to curb the growth of emissions, and adapt to impacts of climate change.

China's "contribution" is pegged on increasing its renewable portfolio, which is an extension of the pledge it made at Copenhagen and Cancun.

The US has committed to reduce emissions by 26%-28% from 2005 levels by 2025—this translates to roughly 12%-14% reduction from the 1990 emission levels. Not only is this significantly lower than the European Union's recent de-

cision to emit 40% less carbon in 2030 than it did in 1990, it is significantly lower than the commitment made by the United States in the Copenhagen Accord, and later at Cancun.

The United States had in compliance with the Copenhagen accord had said that it would emit 30% less carbon in 2025 and 42% less in 2030 than it did in 2005.

There is no reference to commitment in terms of finance and technology to help developing countries address climate change in the agreement.

Dubash of Centre for Policy Research, however, said there is reason for hope as the agreement "really infuses energy into the only global process we have". While he acknowledged that there is reason for scepticism, as the announcements may well be short of what is needed from the two biggest polluters to limit warming to 2 degrees. Nonetheless, he said, "the only way to square this circle is to create conditions to deliver more emission restrictions than countries actually promise and push for tighter limits."

Some see the US-China agreement as an opportunity to push countries to do more to address the global problem of climate change. "Though these targets might not be highly ambitious, it definitely reinvigorates the discussion around ambition within the 2015 agreement," said Pathak of Climate Action Network.

The announcement in Beijing drives home the inherent problem that an agreement based just on national circumstances

It's yet to be seen whether other countries like India who are dragging their feet on post-2020 actions are going to take cues from this announcement and follow suit, which was the case prior to Copenhagen COP 15

SIDDHARTH PATHAK
International policy co-ordinator, Climate Action Network International

*The Times of India, Delhi dated
November 13, 2014*

Climate deal will crush jobs in US, say Republicans

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Washington: The United States and China unveiled on Wednesday a secretly negotiated deal to curb their greenhouse gas emissions, in effect turning the heat on India to also make firm commitments to cut its carbon footprint.

New Delhi however found unexpected and in some ways dubious allies in the newly victorious Republican Party, which saw President Barack Obama's achievement as a sellout that would undermine US economy.

Top Republicans, many of them from coal mining states in the US, saw this as an accord that would crush jobs in America while letting China off the hook with unspecified commitments.

"Our economy can't take the president's ideological war on coal that will increase the squeeze on middle-class families and struggling miners," the incoming Senate Majority leader Mitch McConnell, who hails from the coal-rich state of Kentucky, said.

An array of Republican leadership, eyeing the White House in 2016, said the Democratic President was dumping unreasonable commitments on his successor and pointed to the midterm election results, which they said was a vote against Obama's policies. Although the

US-China accord does not require congressional ratification, the GOP, which now control both chambers of Congress, can stall the initiative through legislation.

The US and China together produce about 45% of the world's greenhouse gas. With EU, the world's third biggest polluter, committing to reduce its 1990-level emissions by 40% before 2030, attention now turn to India, which is ranked the fourth biggest emitter. Pressure will come leading into a UN meeting in Paris next year aimed at reaching a global deal on reducing emissions beyond 2020.

But Republicans, many of whom are climate change skeptics aside from coal-mining area representatives, have said they will challenge any Obama commitments. Under the Obama-Xi deal, the United States will have to double the pace of reduction it targeted for the period from 2005 to 2020.

*The Times of India, Delhi dated
November 13, 2014*

India may have to reset climate goals

US-China Vow May Force Delhi To Commit More On Emissions Before March '15 Talks

Vishwa Mohan
& Indrani Bagchi | TNN

New Delhi: The US-China joint pledge to take actions to limit their carbon emissions may put pressure on India to commit something substantial by March next year when all countries are expected to come out with their 'intended' goals of cutting emissions.

The development is also seen as something that may trigger a clamour within India to de-link itself from China ahead of the make-or-break global climate negotiations in Paris next year.

Climate experts and environmentalists, on the other

hand, believe that whatever the top two emitters have pledged is well short of what is needed from them to limit warming to 2 degrees Celsius by the end of the century.

Shyam Saran, former special envoy of the PM on climate change, said, "This agreement was expected. With a declared peak year of 2030, China can continue increasing its carbon emissions until then, which could be a questionable achievement for climate change."

"India has, in a manner of speaking, already accepted an emissions ceiling. In 2007, then PM Manmohan Singh said India's per capita emis-



CLIMATE CLAMOUR

sion would never exceed the average per capita emission achieved by the developed world. The lower the latter, the ceiling for India too would have to be lower."

A section within the gov-

ernment believes the US-China deal would, by default, give India enough elbow room to peak its emission some 15 or 20 years beyond 2030—the year around which China promised to reach its peak emission.

It means India may take it easy on its mitigation part and rather focus on adaptation and increasing its share of renewable energy in the country's total energy mix—the stand which the Narendra Modi government may take while de-linking itself from China at international platforms on climate issue.

Commenting on the deal, Sunita Narain, director gen-

eral of Centre for Science and Environment, said, "It is a self-serving deal in which both countries have agreed to converge their per capita emissions at 12 tonnes in 2030. This is a high level of emission and not in line with meeting the 2 degree Celsius temperature target mandated by IPCC."

She added, "India should push for a principle-based emissions reduction target for all countries. This is the only way we can force the US and China to reduce their emissions which are in line with the planetary limits."

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

Bali Revived

Agreement with US that safeguards India's position on food security set to boost global trade

After months of concern over the future of the World Trade Organisation (WTO) a bilateral agreement between India and US – meant to revive the Bali agreement – is a welcome development. The first agreement in WTO's two-decade history, which was concluded in December 2013, threatened to unravel over India's anxiety about its implication for India's new food security legislation. Now, the bilateral agreement upholds status quo till such time India and other WTO members work out a solution on public stockholding of foodgrains.



India needs WTO to succeed. One of the reasons WTO has made slow progress in concluding an agreement is that it works on the basis of consensus. In effect, it means every member has veto power, which makes it a multilateral organisation that does not coerce poorer countries into accepting a lopsided agreement. Moreover, WTO on account of its global nature does not exclude India on account of geography as emerging trade blocs such as Trans-Pacific Partnership or the Asia-Pacific Economic Cooperation do. Access to export markets becomes restricted if India is not a member of multilateral trade blocs.

India never did have a problem with Bali agreement's Trade Facilitation Agreement, an attempt to ease trade procedures that was dear to many developed countries. The concern revolved around interpretations of a so-called peace clause that insulates India's existing food subsidy mechanism from a legal challenge in WTO's dispute redressal forum. The bilateral agreement with US, which can now bring other members around, clearly establishes the peace clause stays till a permanent solution is found. It's a good day for global trade.

*The Times of India,
Delhi dated
November 14, 2014*

Climate Breakthrough

US-China deal should prompt Delhi to pursue emission targets while decoupling from Beijing

The unveiling of a secretly negotiated deal between the US and China – whereby both countries have pledged to reduce greenhouse gas emissions – marks a watershed moment in global efforts to fight climate change. Before this China – the world's largest emitter – had insisted on its 'developing' status to dodge reduction targets, while the US cited exclusion of developing countries from international emission norms to sidestep significant reduction targets itself.

But the new deal not only sees the US commit to a 26-28% reduction in emissions below its 2005 level by 2025, it also sees China, for the first time, commit to capping its overall emissions by 2030 or earlier. For Washington this would mean doubling the pace of its own domestic emission cuts, while Beijing plans to increase the share of non-fossil fuel energy sources in its overall energy mix to 20% by the 2030 deadline. The deal between the two largest emitters also means that the scheduled UN climate talks in Paris next year could now succeed in producing a post-Kyoto Protocol agreement that will take effect in 2020.



For that agreement to be implemented it is imperative that the US takes the lead in climate change mitigation. That's not only because the US is among the highest per capita as well as historical emitters, but also because, more than any other country, it has the resources and innovative capacity to develop green technology. That said, the US-China deal also puts pressure on India to commit to emission caps of its own. India should accept the challenge while also decoupling itself from China.

Given that India's share of global carbon emissions last year was only 7% compared to China's 28% and the US's 14%, and that India is the lowest per capita emitter among major economies, New Delhi has a strong case for pitching for different standards. The previous Manmohan Singh government's position that India's per capita emission would never exceed the average per capita emission of the developed world is a reasonable one. Alternatively it could commit to never exceed total Chinese emissions since their population sizes are roughly the same. Both formulas would leave India enough space to pursue industrialisation and poverty reduction. For India, a balance between development and environment protection is the need of the hour.

*The Economic Times, Delhi
dated November 14, 2014*

NO OMISSION OF EMISSIONS US President Barack Obama, Chinese Premier Xi Jinping & the Pacific island countries are likely to push the reduction of carbon emissions agenda with PM Narendra Modi

India Under Pressure to Lay Out Climate Plans at G20 Summit

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New Delhi: Prime Minister Narendra Modi and his Australian counterpart Tony Abbott may want to focus on economic growth, investments and jobs at the G-20 summit this weekend, but the US-China climate deal on Wednesday is set to put emissions on top of the agenda in Brisbane.

With US President Barack Obama and his Chinese counterpart Xi Jinping expected to use the G-20 platform to get other members to come forward and announce plans to reduce carbon emissions, India may feel the pressure the most as the third largest emitter of greenhouse gases behind the US and China, accounting for 6% of global emissions. In the past, the G-20 has served as a platform for giving important political directions on climate change.

In the 2007 G-20 meeting in Germany, for example, the then PM Manmohan Singh had committed that India's per capita emission of carbon dioxide would never exceed the per-capita emissions of advanced developed countries.

The Brisbane Summit could see a push for some kind of indication of intent by the world's biggest economies. The G-20 accounts for 66% of the world's population,

Laying Down the Green Carpet

G-20 has a history of being the stage for crucial political action on climate change

Pacific island nations may also urge PM Modi to reduce India's carbon emissions



INDIA LIKELY TO HIGHLIGHT

EFFORTS to reduce growth rate of emissions

IMPROVED energy efficiency, renewable energy

NATIONAL Action Plan on Climate Change

DOUBLING of the coal cess in Budget

GROUP OF 20 ACCOUNTS

66% OF WORLD POPULATION

85% OF GLOBAL GDP

76% OF CARBON EMISSIONS



85% of global GDP and 76% of global carbon emissions.

But it is not just G-20 summit that will put India in focus. During Modi's visit to Fiji after the Australian tour, Pacific island countries may urge him to announce India's efforts to reduce its carbon emissions and tackle climate change.

Tony de Brum, foreign affairs minister of Marshall Island, has called on "all major emitters" to announce their plans and has said that he will be discussing the issue during Modi's visit to the Pacific. "The G20 is the perfect opportunity for the world's biggest economies to recommit to having their

proposed targets on the table by March 2015, at the very latest. I look forward to discussing this personally with both Chinese President Xi and Indian Prime Minister Modi during their respective visits to the Pacific following G-20," he said.

As of now, New Delhi has no plans to make any announcements at the G20 summit. "We are consulting experts, former negotiators, and civil society organisations in order to craft our position

in Lima (climate meet in December)," a senior government functionary said.

Indications are that India will showcase its efforts to reduce the rate of growth of emissions, focusing on improving energy efficiency and enhancing renewable energy portfolio. The package is expected to include the doubling of the coal cess announced in the Budget, a dedicated adaptation fund, and the nine missions comprising the National Action Plan on Climate Change.

Environment minister Prakash Javadekar has already held a round of consultations with the members of the re-constituted Prime Minister's Council on Climate Change.

While India will not be expected to set a peaking year, or take steps to reduce the amount of carbon emitted, as a growing economy it will be expected to put forward measures that would reduce the rate of growth of carbon emissions or the amount of carbon it emits for every dollar of GDP.

The EU's position is echoed by several other countries, but given India's important and visible role in climate negotiations, particularly over the last five years, there is an increasing expectation that India will step up and make public its efforts to do its share in addressing climate change.

India: US-China climate deal not so ambitious

'People Want More Emission Cuts From US'

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New Delhi: India doesn't appear to be impressed by the US-China deal to limit carbon emissions in coming years and said the pact was "not so ambitious" – a signal that New Delhi would not budge from its position while demanding more action from the world's top two polluters.

In his first formal reaction to the pledge by the two countries, environment and climate change minister Prakash Javadekar on Friday said, "Whatever intentions have been declared by the US and China is a good beginning but it is not as ambitious as people wanted it to be".

He said many people were expecting that the US would agree to more cuts than what it declared two days ago or China will declare its peaking year much earlier than 2030. "But that has not happened," said the minister on the sidelines of a function.

Though the expectation from the top historical emitter US is understandable, the remark on China – whose case earlier used to be part of the joint narrative of developing economies including India, Brazil and South Africa as a part of the BASIC group – shows the existing discom-



Now they have taken binding cut on their own. It is a beginning which the world will be watching as the US, China and Europe are the major polluters

PRAKASH JAVADEKAR
Environment Minister

fort within the Modi government ahead of the Lima climate negotiations.

Under the bilateral deal that was signed in Beijing on Wednesday, the US will reduce emissions by 26-28% below the 2005 levels by 2025. China, on its part, intends to achieve the peaking of carbon emissions around 2030 and try its best to peak earlier. It also intends to increase the share of non-fossil fuels in primary energy consumption to around 20% by 2030.

Making New Delhi's priority clear, he said India's poverty eradication and energy access were important developmental tools and "therefore when our peaking will be, that we will declare at the right moment".

He said that eradicating poverty in developing nations such as India is the government's primary goal. He also noted that electricity has still not reached one third of the country's population, saying his government is committed to

ensure electricity to all.

Terming the US-China deal as based on "mutual consent" between the two countries, Javadekar said, "I welcome that the US has declared its intentions of cutting emissions with immediate effect."

Expressing his apprehensions, Javadekar, at the same time, noted that US was not part of 1997 Kyoto Protocol and had not accepted the restrictions under it. He said, "But now if they themselves want to go towards emission cuts path, then it is a good beginning."

"Now they have taken binding cut on their own. It is a beginning which the world will be watching as the US, China and Europe are the major polluters".

Seeking to put pressure on the US, he said "the world will be watching" whether the US will take the emission cuts immediately or not.

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

*The Times of India, Delhi
dated November 15, 2014*

Warming will increase lightning by 50%: Experts

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London: New climate models have predicted a 50% increase in lightning strikes across the world during this century as a result of warming temperatures linked with climate change. University of California, Berkeley's climate scientist David Roms and his colleagues looked at predictions of precipitation and cloud buoyancy in 11 different climate models and conclude that their combined effect will generate more frequent electrical discharges to the ground.

"With warming, thunderstorms become more explosive," said Roms. "Warming causes there to be more water vapour in the atmosphere, and with more fuel, when you get ignition, it can go big time." More lightning strikes mean more injuries; estimates of people struck each year range from the hundreds to nearly a thousand, with scores of deaths.

There would also be more wildfires, since half of all fires, and often the hardest to fight, are ignited by lightning, Roms said. More lightning also would likely generate more nitrogen oxides in the atmosphere, which exert a strong control on atmospheric chemistry.

*The Times of India, Delhi dated
November 16, 2014*

Massive clearing of forest area in Aravalis

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New Delhi: Amid reports of increasing cases of leopards entering human habitats in and around Aravalis in Gurgaon and Faridabad, a fresh instance of massive clearing of green cover close to Ansal Retreat in Raisina area has now been reported. This has exposed how the local forest department has failed to detect and stop deforestation.

Huge patches of land that had trees have become bald in the past two months and boundary walls have come up. These land parcels fall under the gair mumkin pahar (common hill land) and gair mumkin rad where no non-forest activity is allowed.

As per Aravali notification of 1992, any non-forest activity including cutting of trees, construction of any clusters of dwelling units, farmhouses and any other activity connected with such construction is prohibited in such areas.

"This area is frequented by wildlife and particularly leopard because of good forest cover. If the forest department



UNDER THREAT: Huge patches have become bald in two months

fails to stop this, we won't see these wild animals. There have been cases of animals straying out of the hills due to deforestation and getting killed," said a local resident.

A forest department official said they have received complaints of this major irregularity. "We have asked the local forest employees to give a detailed report on this. Prima facie it seems there has been deforestation in the locality," the official said.

In fact, even Google Earth images show certain patches of land around Raisina have

been cleared of vegetation between March and August this year. Locals said the tree cutting has happened in the past two months.

TOI has learnt that while the rate of farmhouse land in Aravalis—which still faces legal hurdles—is around Rs 80 lakh per acre. While Haryana laws do not prohibit buying gair mumkin pahar land or any other land in Aravalis, the rules are clear that such land in Gurgaon district cannot be used for any other purpose other than maintaining the area as forest.

The Times of India, Delhi
dated November 16, 2014

World's biggest polluter US pledges \$3bn for climate

Funds Will Be Used To Assist Poor Nations

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New Delhi: Three days after entering into a joint climate deal with China to limit emission of greenhouse gases, the world's biggest 'historical' polluter, the US, on Saturday pledged \$3 billion to the Green Climate Fund (GCF) — a financial support mechanism aimed at assisting poor countries to move towards a low carbon future. With the American contribution, the corpus of the fund now stands at nearly \$6 billion.

Though the amount is a drop in the ocean when compared to the \$100 billion a year promised by rich nations collectively to their poor counterparts from 2020 onwards, this is the largest single pledge to date by any rich country to the GCF. It may, therefore, be seen as a positive beginning especially in the case of US, which was not so keen for early capitalization of the fund.

SEEDING THE GREEN FUND

- 1 Green Climate Fund (GCF) is a financial instrument to assist developing countries in mitigating emissions and adapting to impact of climate change
- 2 Rich countries are supposed to contribute to the fund
- 3 Goal is to make available a corpus of \$100 billion per year to developing nations from 2020



cially in the case of US, which was not so keen for early capitalization of the fund.

The US pledge for GCF was announced by President Barack Obama at Queen-

land University in Brisbane, Australia where he is attending the G20 meeting.

"Today, I'm announcing that the US will contribute \$3 billion to the Green Climate Fund to help developing nations deal with climate change," Obama said in his speech in Brisbane, bringing the climate change issue to the fore as a key debating point during the G-20 meet.

Interestingly, host country Australia and the world's present top carbon emitter China did not initially want the climate change agenda to figure at all during the G-20 summit. India had, however, insisted for its inclusion during the august gathering of major economies.

India and other developing countries have long been demanding early capitalization of the GCF so that it can be used to buy intellectual property rights of high-cost green technologies.

The US pledge to contribute to the GCF is the second move by it in the past four days to contribute to the climate change challenge.

The Economic Times, Delhi
dated November 17, 2014

India Welcomes G-20 Endorsement of Energy Efficiency

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New Delhi: For India, a small yet important success has come in the form of the G-20's endorsement of energy efficiency as important to ensuring sustainable development and growth, and the push to industrialised countries to provide and "mobilise" finance to address climate change, including contributing to the Green Climate Fund.

The G-20 meet that concluded in Brisbane on Sunday also made it explicit that its efforts to address climate change would be in line with the decisions taken by countries in

the UN-sponsored negotiations.

While it supports "strong and effective action" to address climate change, these actions would be consistent with the United Nations Framework Convention on Climate Change (UNFCCC) and its "agreed" outcomes. The G-20 said its "efforts would support sustainable development, economic growth, and certainty for business and investments".

Railways Minister Suresh Prabhu said the G-20's recognition of the primacy of the UNFCCC was "very important". "(On) climate change we are very keen that it should be under the United Nations Frame-

work Convention on Climate Change...there have been efforts to derail that process," he said.

"While climate change is necessary but at the same time some countries may not try to necessarily follow with the Framework Convention which was made under the United Nations aegis," Prabhu said.

The US-China climate agreement aimed at limiting the amount of carbon emitted by the two countries, and US President Barack Obama and Japanese Prime Minister Shinzo Abe pledging \$3 billion and \$1.5 billion contributions, respectively, to the Green Climate Fund put the issue of climate change on the agenda of the G-20 meet.

India, which had focused on remittance flows and black money besides economic growth jobs, was, unlike host Australia, not averse to reflecting concerns about climate change in the discussions and communiqué, provided that the primacy of the UN-led climate talks was not undermined.

The G-20 has also addressed the issue related to climate change in a significant way," Prabhu said at a press conference in Brisbane.

The G-20 communiqué does a balancing act. If it acquiesced to demands from countries like India to

clearly state the supremacy of the UNFCCC in climate-related matters, then it also gave space to the US and other developed countries as well.

The Brisbane communiqué refers to the proposed agreement as "under the UNFCCC" but doesn't refer to the principles of the Convention. It goes on to describe the agreement that is to be finalised next year in Paris, as "applicable to all" without any reference to any form of differentiation between developed and developing countries.

Experts say that while the language of the communiqué in this regard was "interesting" the real gain is the acceptance by the G-20 that decisions on climate change have to be made under the aegis of the UNFCCC.

The other big gain was on the issue of climate finance and the agreement to provide for funds for both reduction of emissions and adapting to the impacts of climate change.

"The other important part has been the 'adaptation'. Because, as you know, a country like India is facing enormous challenges in dealing with climate change, which is a reality as a result of past emissions. And, therefore, if the past emissions is a reality then adaptation is a necessity," Prabhu said.



CLIMATE CHANGE

(On) climate change we are very keen that it should be under the United Nations Framework Convention on Climate Change...there have been efforts to derail that process

Suresh Prabhu
RAILWAYS MINISTER

*The Times of India, Delhi dated
November 18, 2014*

Govt targets 1L mw solar power by '22

TIMES NEWS NETWORK

New Delhi: The government is looking at a solar power generation target of 100,000 mw by 2022, up from the 20,000 mw goal planned by the UPA government.

"What we inherited was 20 gw (giga watt) up to 2022, which we are trying to reset to 100 gw. On the solar front, we believe there is enormous potential to take it to 100,000 mw in next 5-7 years," power, coal and renewable energy minister Piyush Goyal said on Monday at a function organized by energy and climate think-tank Teri. He said the government was trying to make these projects viable by providing grid

parity to make them economically viable and ensuring that bankability and returns were reasonably assured. "In short, we are trying to make it self-sustaining," he said.

"Renewable energy may seem expensive, but in the long run, it scores over conventional energy. The subsidy regime needs to be more robust, targeted and sustainable. The government of India stands committed to lead the revolution in the renewable energy sector. Transparency, honesty, world-class technology will be the key to dealing with key

challenges," Goyal said. He sought a pragmatic approach in balancing the need for development and dealing with issues concerning the environment. "Once the development needs of a country are addressed, then talking about environment makes sense... We still have unsatisfied needs for development and for roads and highways to come up, we have to take a more pragmatic view," he said.

"If we have 1.25 billion people, we will obviously have more carbon emissions... Just because we have carbon emissions we have to stall our infrastructure plan? Only under the garb of environment protection?"

RENEWABLE ENERGY

*The Times of India, Delhi dated
November 19, 2014*

Global index calls city air hazardous

TIMES NEWS NETWORK

New Delhi: Ever wondered how poor is the air we are breathing? A comparison of cities across the globe reveals the capital's dismal condition. Around 4pm (IST) on Tuesday, Delhi's Anand Vihar had an air quality index (AQI) of 399 which falls in the hazardous category. At the same time, Beijing recorded an AQI of 177 (unhealthy) while Tokyo 53 (moderate) and a monitoring station in Sao Paulo 17 (good). Paris and New York also had moderate AQIs.

A world map with pointers, prepared by aqicn.org and World Air Quality Info by collating data collected from all over the world, had red and maroon dots suggesting hazardous air quality in Delhi and parts of China. Experts say this is not just meteorological conditions but are results of very high local emissions.

"For smog to develop there has to be high local emissions in the first place. Take the example of the London smog in 1952. Their PM 10 levels used to go beyond 500 microgram per cubic metre and now they don't have smog. They have managed to control air pollution with stringent measures,"

HOW SAFE IS OUR AIR



What is air quality index (AQI)?
AQI is a method by which individual parameters of each air pollutant can be translated into a single number

AIR QUALITY INDEX | Recorded around 4pm (IST) on Nov 18, '14

Malaysia

Kuala Lumpur: 32 ●
Perai: 52 (Moderate) ●

Thailand

Bangkok: 47 ●

France

Paris: 58 ●

UK

London: 69 ●

US

New York | Utica: 56 ●
Albany County: 40 ●

India

Delhi | Anand Vihar: 399 ●
RK Puram: 298 ●
Punjabi Bagh: 182 ●

China

Beijing: 177 ●; Shanghai: 157 ●; Guangzhou: 155 ●

Japan

Tokyo | Nishitokyo: 53 ●
Nerima: 38 ●
Tokorozawa: 34 ●

Brazil

Sao Paulo | Americana: 52 ●
Paulinia: 17 ●

said Anumita Roy Chowdhury, the head of CSE's Clean Air Programme.

India is yet to roll out its own AQI, which is meant to issue health warnings according to concentration of certain pollutants. Officials said it may not be ready for Delhi this winter. However, they claimed peak levels are not important. "Our daily average is poor but not hazardous," said an official of Delhi Pollution Control Committee.

Ahead of the recent APEC summit, Beijing put in place stringent anti-smog measures like restricting traffic and closing hundreds of plants within a 200km radius of the capital. Drones were also sent out to monitor factories and power stations in and around Beijing, according to some reports.

The US usually implements contingency measures as soon as air pollution levels start peaking. Schools and law enforcement agencies are alerted; and public safety personnel discontinue outdoor exercises lasting more than an hour. Industrial units are asked to reduce combined emissions by at least 20% of normal week-day operations while the authorities restrict vehicular movement, said a CSE study.

AQI	AIR POLLUTION LEVEL	HEALTH IMPLICATIONS
0-50	Good	Quality satisfactory; pollution poses little or no risk
51-100	Moderate	Quality acceptable. However, some pollutants may moderately affect a very small number of people who are unusually sensitive to air pollution
101-150	Unhealthy for sensitive groups	Sensitive people may have trouble; others unlikely to be affected
151-200	Unhealthy	Everyone may get affected; sensitive people may have more trouble
201-300	Very unhealthy	Health warnings of emergency levels for all
300+	Hazardous	Everyone may experience more serious health effects

*The Times of India, Delhi dated
November 19, 2014*

*Deccan Chronicle, Hyderabad
dated November 20, 2014*

'Amend existing laws to expedite environmental nod for projects'

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New Delhi: The high-level committee, set up in August to review green laws and suggest amendments to bring them in sync with the Modi government's development agenda, on Tuesday submitted its report to the environment ministry.

It recommended many changes in existing laws to ensure speedy clearances and make the whole process more transparent.

The panel, headed by former Cabinet secretary T S R Subramanian, also proposed setting up a national laboratory for air/water quality within the environment ministry and instituting an All India Environment Service.

The new service is proposed to have a dedicated

GREEN PANEL'S RECOMMENDATIONS

A high-level committee was set up in August to review green laws. Govt intends to bring a bill to amend couple of existing laws in forthcoming winter session



► Panel suggests certain changes in existing laws on

- Environment protection
- Forest conservation
- Wildlife protection

► This will ensure quicker clearances for critical infrastructure/power/water/road projects, including the ones required for defence purposes

Panel also recommends setting up of a national laboratory for air/water quality

► Proposal to create All India Environment Service (a dedicated pool of officers to man central/state pollution control boards)

pool of officers to man central and state pollution control boards and related monitoring and investigating bodies across the country.

"The government is ex-

pected to bring bills to amend a couple of existing green laws during the forthcoming winter session of the Parliament," said an official.

Amendments may also be

introduced by the government in the Forest (Amendment) Bill, 2012 which has been pending in Rajya Sabha. After receiving the report, Union environment and forests minister Prakash Javadekar said his ministry would expedite consultations with all stakeholders and that the recommendations would enhance his ministry's efforts to "avoid undue delays and ensure transparency in clearances and implementation of projects".

"We've tried to reduce inspector raj, bring a system where the project proponents make a commitment and they are enforced with the use of science and technology. So, the environment improves and project processes also improve," Subramanian said.

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

India keeps mum on HFCs issue

Paris, Nov. 19: India did not clearly spell out its position on the issue of hydrofluorocarbons during a key UN conference here as nations debated whether to set up a contact group for discussing the proposed amendment to the Montreal Protocol to phase down the harmful greenhouse gas.

As nations debated pro and cons of the issue, India neither supported nor opposed it and instead merely read out a joint-bilateral statement on HFCs signed by Prime Minister Narendra Modi and US President Barack Obama during their White House summit on September 30.

When contacted, Indian officials known to the development pointed out that it was done to "clarify" country's stand after Canada, while moving the amendment, referred to "a change" in India's approach on the issue.

India's unclear stand has irked the green groups attending the conference. "I can't understand why a bilateral deal read out in multilateral forum," climate expert and deputy director general of Centre for Science and Environment, Chandra Bhushan, said.

On the opening day of the conference on Monday, India had not opposed to participate in discussing on the agenda on the issue of harmful greenhouse gas under United Nations Montreal Protocol on ozone depleting substances.

A breakthrough on the issue of HFCs is highly unlikely as oil producing gulf countries participating in a key UN conference continued their strong opposition to the proposal to amend the Montreal Protocol to phase down the harmful greenhouse gas. On Tuesday, They opposed setting up a contact group on the issue.

— PTI

*The Economic Times, Delhi
dated November 20, 2014*

India's Solar Power Capacity Addition to Pick Up After Dismal 2014: Study

Ministry of new and renewable energy's new target is to increase such installations by five-fold to 15 GW by 2019 via solar parks after land acquisition delays this year

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Kolkata: India is expected to add solar power capacity at more than twice the speed of this year in 2015, after a disappointing 2014 when installations of photovoltaic cells have fallen short of previous year's levels, a solar consultancy firm said.

India's total solar installations have crossed the 3-gigawatt capacity mark with addition of 734 megawatt so far this year, and the country is expected to end the year with total additions of 800 MW, as much as 20% less than in 2013. Land acquisition delays due to elections and uncertainty caused by an anti-dumping issue contributed to the slowdown in installations. In its quarterly update on the Indian solar market, Mercom Capital Group forecast 2015 installations to reach about 1,800 MW by generation capacity.

India earlier this year dropped plans to impose anti-dumping duty on solar panel imports. The duty, aimed at protecting local manufacturers, would have increased the import cost of local project developers who rely mostly on countries like the US, China and Tai-

wan for the photovoltaic cells.

"The Indian solar industry is visibly upbeat since the elections and especially after getting past the anti-dumping case," commented Raj Prabhhu, chief executive and co-founder of Mercom Capital. "Recent cancellations of coal mining licenses by the Supreme Court (citing irregularities in the allotment process) amid rising coal imports and increasing costs, and continuing power shortages have all contributed to the positive momentum in the solar sector."

The Ministry of New and Renewable Energy's (MNRE) new target is to increase solar installations by fivefold to 15 GW by 2019 via solar parks – large areas and infrastructure set aside by states to accommodate installations of 500-1,000 MW. "There have been other announcements in a short period of time; a new program aimed at 'ultra-mega solar projects' with a goal of installing 20 GW by establishing solar parks was announced recently," the study said.

The ministry has also asked public sector units to set up large solar projects to meet their obligations on using renewable energy. At the request of the Prime Minister's office, the ministry is also working on a plan to increase the installa-



ARINDAM

tion goal under the Jawahar Lal Nehru National Solar Mission to 100 GW, it said.

Prabhhu is sceptical of the plan of setting up large projects.

"In most major solar markets, with a drop in costs, the market has shifted from large-scale projects to residential and commercial rooftop projects – closer to the end-user," he said. "With transmission and distribution losses estimated at about 25%, and considering the country is severely challenged when it comes to land availability and grid infrastructure, this (large projects) may not be a sound long-term strategy."

The Economic Times, Delhi dated November 20, 2014

Not for sale outside India

DDA's Green Incentive May Boost Noida Mkt

Sops by DDA may actuate Noida authority to concretise green building initiative as demand for it has been vocal by developers and buyers, reports **Asit manohar**

DELHI DEVELOPMENT Authority (DDA) has come out with draft regulations for construction of green buildings, which also includes incentives like extra ground mileage, floor area ratio (FAR) and 10 percent rebate in property tax too. Such mileage for the developers would help in promoting the demand for these units not only in Delhi but in NCR as well.

Ashok Gupta, CMD, Ajnara India says "With such bonuses attached by DDA, it is for sure that developers of NCR will now focus more on building these units which might divert the attention of other authorities here as well."

Adding to the view, Sushant Mutreja, CMD, Cosmic Group said, "This decision will bring about a transformation in the real estate sector; as at present there are a lot of projects that are luxurious by nature but do not meet the standards of a true green building. When such incentives will be offered on the construction of energy efficient units, developers in other regions will also be provoked to develop green buildings. Authorities in Noida, Greater Noida, Yamuna Expressway, Gurgaon and other regions have been open to suggestions and ideas; hence we believe

that very soon other authorities might also look to promote this concept this way."

Main purpose of a green building is to reduce the water and energy cost and consumption. It is been observed that an average of about 40 percent of energy and 25 percent of water savings are possible. It is true that most green buildings are costlier at the time of construc-

tion and might cost more than a conventional building, but will always end up with higher savings in the long run annually.

Arvinder Singh, MD, Agrante Realty said, "Green buildings are the structures of the future. We are living in an era where already natural resources are limited and we need to find alternatives to keep moving ahead. Whatever we will save today will help shape a

better future tomorrow, so why not innovate. A 2BHK of a green building might be higher in price than a regular 2 BHK unit but after few years, there will higher savings generated by the green unit than the regular one. Also, the price appreciation of a green unit is better than regular ones. Therefore, it becomes advantageous in both cases."

The draft regulations, which would be a part of the Master Plan of Delhi 2021 once notified, will be made available in the public domain for suggestions and objections. Although, to get the benefits, one will have to get a certification from GRIHA for green buildings, only then the eligibility will be accepted. Experts in the sector believe that this news has created a spark in the sector with developers in NCR now eagerly waiting for this decision to be carried in other regions as well.

Deepak Kapoor, Director, Gulshan Homz said, "The current government has laid down a well-planned strategy for the development of homes in order to meet its goal of housing for all by 2022. The plan began with DDA and HUDA housing schemes which has been much complemented by lowering home loan rates, making availa-

ble land parcels and much more. Now with DDA's incentive plan for green homes, this will again open the gates for the better development which will fall in place with plans for development of smart cities. As this concept gets widely accepted and executed in Delhi, this will provoke the developers of NCR to come out with these concepts more often which might even entice the authorities to offer such incentives in other regions as well."

GV Shashidhar, CEO, caso-home.com said, "The new government has been proving its mettle with a series of crucial steps for the nation's growth. 100 percent FDI in the sector along with housing schemes and much more to offer; the sector is starting to shape up very well. This incentive structure offered by DDA is expected to revive the much saturated Delhi market. Its ripple effects will be soon witnessed as the developers in NCR are always waiting for a room to perform and offer something to meet the demand. The demand for green homes is sure to rise as this incentive plan becomes operational. If it proves to be successful, other authorities might also mimic the plan to offer bonus to developers constructing green home units in NCR."

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Cut emissions to zero by 2070: UN body

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New Delhi: Setting stringent targets for emission cuts for the world, a UN body wants countries across the globe to collectively cut carbon emission to zero (achieve carbon neutrality) by 2070 and bring down emissions to net zero for all greenhouse gases, including methane, nitrous oxide and climate damaging refrigerant HFC, by 2100.

The time-line for desired emission cut was suggested by the United Nations Environment Programme (UNEP) in its annual emission gap report, released in Washington on Wednesday. The report wants the nations to follow the

timeline diligently so that the world can contain temperature rise under the level considered disastrous.

Meanwhile on Thursday, many countries assembled in Berlin to pledge funds for the Green Climate Fund (GCF) – a financial instrument aimed at helping poor nations adapt to climate change and be part of the global effort to achieve target emission cuts. However, the GCF could not attract as much money as was expected by developing countries.

The target set by the emission gap report assumes significance as it came just 11 days ahead of the crucial Lima talks, where countries would negotiate a global deal

in Paris next year. The roadmap, chalked out by the UN body, and the poor show by rich nations in contributions will be major debating points.

Rich nations invariably try to corner their developing counterparts, including India, over reduction in farm methane and refrigerant gas, blaming the latter as being the primary reason for such emissions. As per the deal, US will reduce emissions by 26-28% by 2025 while China intends to achieve peaking of carbon emissions by 2030. Carbon neutrality means any carbon dioxide emissions from burning fossil fuels would be offset by planting trees and other interventions.

The Times of India,
Delhi dated
November 21, 2014

City forests, bio-parks to get NCZ tag

TIMES NEWS NETWORK

New Delhi: In a first, Delhi's jungles and biodiversity parks will be given protection through DDA's master plan. The authority has decided to add a chapter to the MPD 2021 terming the Ridge area, regional parks, and biodiversity parks as natural conservation zones or NCZs.

Provisions in the new master plan will restrict construction in these greens to 0.5% of the total area. "Our idea is to provide protection to these vital green spaces through the master plan. National Capital Region Planning Board had already conceived this idea and we thought of adopting it in our draft plans," Balvinder Kumar, vice-chairperson, DDA, said. He added that through this policy DDA will also put a cap on all construction activity in the area.

Agra's polluted air to blame for Taj's yellow tinge

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Agra: Why is the Taj Mahal turning yellow? The answer lies in Agra's polluted air. A recent report of the Uttar Pradesh Pollution Control Board (UPPCB) has put Agra at the third spot, when it comes to a list of the "most polluted cities" in the state. Ghaziabad tops the list followed by Noida.

The yellowing of the marble on the Taj, experts say, is also because of the high load of pollutants in the city air.

Principal secretary VN Garg has demanded a report on the measures being taken by the respective authorities to control pollution in the top five "most polluted cities". Kanpur and Singrauli-Sonbhadra were at fourth and fifth spots.

According to a recent report of the UPPCB submitted to principal secretary, Agra stood at the third spot in the most critically polluted towns in Uttar Pradesh. The report was prepared on the basis of pollutants in the air at four prime locations in the town — Keetham lake-I, Keetham lake-II, Kailash Ghat and Jeevani

Mandi. The measurements of pollutions were PH level, colour, value of pollutants and poisonous gases in the air.

► **Reckless urbanisation, P 5**

'Pollution levels have gone up significantly in Agra'

► **Continued from P 1**

PK Shukla, UPPCB's Agra in-charge, said the pollution in Agra has risen significantly over recent years as a result of growth in industry, traffic and population. The situation is turning serious. He added that a detailed report on the pollution status has been sent to the divisional commissioner who will decide further measure on pollution abatement.

Meanwhile, the experts felt that the scenario will not change unless reckless urbanization does not stop in the town. "The government programme, launched between 1998 and 2000 after the monument's famous white marble was seen to be turning yellow,

has had some impact, but not enough to keep up with pollution around the site. Vehicles are now banned within 500 metres of the monument and an LED display gives a running count of air pollution. However, the pollution in Yamuna river and air that is coming from nearby factories in towns like Hathras, Aligarh, Firozabad and many more are costing the Taj dear," said DK Jodsi, a member of a court-appointed committee created to monitor environmental threats to the Taj Mahal.

He alleged that the collusion between land mafia and bureaucrats had resulted in misuse of the money designated to protect the site and its surroundings.



*The Times of India, Lucknow
dated November 21, 2014*



*The Times of India, Delhi dated
November 21, 2014*

Leaves burnt in city despite ban

TIMES NEWS NETWORK

New Delhi: At 2pm on Thursday, a heap of dry leaves was burning near Mandi House. The fire couldn't be seen in the daylight but smoke from it was adding to the city's air pollution that results in morning smog. Across the city, thousands of such heaps are burnt, wasting dry leaves that are a precious resource. Residents of New Delhi Municipal Council (NDMC) areas say such fires are a common sight on winter nights as many people light bonfires to beat the chill.

The Delhi government had banned burning of biomass in 2012 amid acute air pollution. Several court orders also discourage such unscientific disposal of biomass but there's no change on the ground. An emissions inventory prepared by System of Air Quality Weather Forecasting and Research (SAFAR) under the ministry of earth sciences, shows burning of biomass within 50km of Delhi increases emissions by at least 15%. In the city's surroundings, even tyres, plastics and tubes are burnt and these release cancer-causing chemicals like dioxin. "Burning dry leaves mainly releases PM10 (coarse pol-



NO NEED: A government ad at Lodhi Gardens urging people not to burn waste

lution particles) and carbon monoxide, but burning tyres release dioxin, black carbon and PM 2.5 (fine respirable particles)," said Gufran Beig, chief scientist at SAFAR.

The municipal corporations admit that a large part of the city's 'green' waste is burnt. South Delhi Municipal Corporation (SDMC) commissioner Manish Gupta said about 200 tonnes of dry waste, such as fallen leaves, from central and south Delhi, is transported to the composting

plant in Okhla every day. "Most of the waste from south and central Delhi is sent off for composting but that may not be the case in west Delhi and the Najafgarh area," Gupta added that a green waste processing plant will be started soon in Dwarka and to make the plan a success there will be green waste bins in dhalaos.

NDMC areas, including Lutyens' Zone, also face the problem. "We saw some burning earlier beside Sadfardjung Flyover and reported it to NDMC. There is greater awareness now," said Suhas Borker, a resident of Jor Bagh. But other residents said most of the burning happens very late at night leaving a thick pall of smog in the morning.

NDMC officials said that parks compost their green waste. "We have composting plants in the four major parks—Nehru Park, Lodhi Gardens, Talkatora Gardens and Purana Qila—where all the big nurseries are located. They convert waste to pellets that can be used as fuel. Maybe, the smaller parks burn their waste," an NDMC official said. Burning of green waste is banned in NDMC areas and the fine is Rs 1,000, but officials say they often don't find anyone around the fire.

*The Times of India, Delhi dated
November 22, 2014*

India digs its heels in on phasing out refrigerant

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New Delhi: It's not going to be easy to make India budge over the controversial issue of phasing out climate-damaging hydrofluorocarbons (HFC). A clear signal to this effect came from Paris where environment minister Prakash Javadekar on Friday spelt out the country's long wishlist while blaming the rich nations for pushing their poor counterparts into the current mess.

Other developing countries including oil-producing Arab countries and Pakistan forced the US to junk its bid to set up a "contact group" to discuss the HFC issue under the Montreal Protocol. They argued that the Montreal Protocol does not have the mandate to discuss the matter and insisted that it be discussed under the UNFCCC.

POLITICS OF CLIMATE

MONTREAL PROTOCOL

► Montreal Protocol is a global treaty to phase out substances that deplete the ozone layer

► Depletion of ozone layer typically results in harmful UV rays reaching earth. High levels of UV rays can cause non-melanoma cancer

► **Main ozone depleting substances (ODS):** Chlorofluorocarbons (CFCs), HCFCs (hydrochlorofluorocarbons) and Halon

► **CFCs and HCFCs:** Mainly used as refrigerants (refrigerators, air-conditioners)

► **India is also one of the signatories of the protocol** and successfully phased out CFCs and Halon well in time. It has also been phasing out HCFCs

► **After phasing out ODS, countries have moved to hydrofluorocarbon (HFCs)**

CONTROVERSIES AND DISAGREEMENTS

► **Developed countries have moved to high-cost new (non-HFC) technology** for fridges and ACs

► **They now want developing countries, including India, China and others, should also phase out HFCs**

► **Developed countries want HFCs to be dealt with under the protocol** which has worked quite effectively to phase out ODS

► **Developing countries, including India, want the HFCs should rather be dealt with under UNFCCC** which put the onus of phasing out greenhouse gases only on developed countries

► **Huge and fast growing market of India** for refrigerators and ACs are main attraction for developed countries



Javadekar said developing nations had switched over to "HFC-dependent" alternatives to phase out CFCs and HCFCs but now they were expected to phase out

this refrigerant as well.

He also pointed to attempts by developed nations to retain intellectual property rights and patents of the new technology which

can replace HFCs. "What's the use of those issues if all of us are going down together due to global warming?"

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

The Economic Times, Delhi dated November 24, 2014

Officials Heed to Modi's Ideas on Green Energy

New and renewable energy ministry takes cue from PM, starts work on solar projects

**Rajeev Jayaswal
& Anindya Upadhyay**

New Delhi: Installing solar panels on the Pakistan border, using super-chilled LNG to build cold storage and warehousing facilities, and putting barcodes to stop illegal use of subsidised cooking gas—the Modi mantra is making its presence felt in the energy domain and forcing officials to sit up and think out of the box.

Officials say that during discussions about seemingly routine and uninspiring energy issues, Prime Minister Narendra Modi comes up with unusual ideas, which soon become tightly monitored instructions. The Cabinet Secretariat maintains a log of efforts made by departments responsible for implementing these ideas, sources said.

The PM's vision is to harness cold temperatures at LNG terminals where gas in liquid form—at 160 degrees Celsius below freezing point—lands from cryogenic ships. At an LNG terminal, the super-cool liquid is gradually warmed up and gasified again in a process that can cool surrounding areas.

"There is reasonable potential of using this low temperature to generate liquid industrial gas such as nitrogen, oxygen and argon. Integrated cold-storages do exist adjacent to such terminals in China and Japan," a source said. The Prime Minister's Office has shown keen interest in renewable energy, officials said. Modi recently advised the ministry of new and renewable energy to explore using barren land close to the country's borders to generate solar energy. Solar projects need a lot of land, which is scarce and costly outside arid regions such as the Rajasthan des-

ert and the uninhabited border regions, where electricity supply is a problem.

"As per the PM's direction, we're soon going to put up two pilot projects of 5 MW each in Gujarat and Rajasthan on separate areas of 25 acres. Indo-Pak border is what we'll begin with as a lot of land is barren and available in the Rann of Kutch," a source at MNRE said.

The PM is keen on reducing the oil subsidy burden on both the exchequer and state oil firms. While the finance minister recently hinted at denying subsidised cooking gas to the rich and affluent, under the direction of the PM, oil companies are trying to recover every drop of LPG left in more than 15 crore cylinders after they are used.

Modi's focus is also on reducing India's petroleum import bill, which was over \$155 billion last

The Cabinet Secretariat maintains a log of efforts made by different departments, which have to implement these ideas on the ground

year, by raising domestic output with the use of new technology. As a result, state explorers Oil & Natural Gas Corporation and Oil India plan to re-visit areas where success could not be achieved during earlier exploration campaigns. These areas include Upper Assam Belt, Naga Fold Thrust and the Himalayan region. Reviews using the latest Canadian technology have resulted in an oil and gas prospect in Jwalamukhi area of the Himalayan thrust fold belt, an industry source said.

Similar prospects were reported from Geleki, Cachar and Mizoram, the source said.

Officials said the proposal to use the low temperature of LNG for refrigeration has enormous potential. India already has four operational terminals at Dahej, Hazira, Dhabol and Kochi, totaling over 22 million tonnes per annum capacity. Terminals are coming up in Gangavaram and Kakinada.

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