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Business Sustainability News

International

A third of the world's food is wasted – how can we stop the rot?

By Caspar van Vark, for *theguardian.com*



Change is needed across the whole supply chain if we are to reduce the amount of food the world wastes. Photograph: Alamy

Around a third of all the food produced in the world ends up being wasted somewhere along the production and consumption line, according to the UN's Food and Agriculture Organisation. In the UK, 50% of food waste occurs in the home: we throw away 7.2m tonnes of food and drink every year. That means the average household is putting £480 in the bin, rising to £680 for families with children. The rest of the waste takes place back up the supply chain, mostly on farms, but also during transport and in stores.

The consequences of all this waste go far beyond the burden on individual wallets – the land, water, fertilisers and labour that go into producing the food are also wasted, and we are left with the greenhouse gas emissions from landfill and transport.

There are around 842 million hungry people in the world and the global population is expected to rise from seven billion to nine billion by 2050. Reducing food waste – not just in the UK, but throughout the world – would help to address this hunger and reduce the environmental cost of throwing food away. But how can we do it?

This was the subject of a roundtable event hosted by the Guardian and Tesco, which last month published waste figures for commonly purchased products in partnership with its suppliers and WRAP. It also published its own operations waste data, externally assured by KPMG.

In the first six months of this year, Tesco revealed, its stores and distribution centres generated 28,500 tonnes of food waste, 21% of it from fruits and vegetables, and 41% from bakery items. Tesco's report also estimated that 68% of Tesco bagged salad produced for the UK market is wasted, with 35%

of it thrown out by consumers.

The roundtable was attended by experts from industry, research organisations and campaigning groups, all of whom agreed that the problem of food waste has become more urgent. One reason for this is the rise in food prices in recent years, which has placed food security higher up the political agenda. "Food prices have doubled over the past decade after a century of declining prices," said Matt Simister, group food commercial director at Tesco. "In a world of seven billion people, one billion go to bed hungry, while many others are obese. How do we balance the system? We can be more productive or waste less – or a balance of the two."

Field losses

Referring to some of Tesco's waste figures, Simister agreed that people should be shocked. But less than one per cent takes place within retail operations, he said, and that's why Tesco wants to use its scale to help to reduce waste, in the field and in people's homes.

Field losses make up a substantial proportion of waste, accounting for 11% of wasted apples, with another 27% wasted by consumers according to the Tesco/Wrap figures. Why is this happening?

Rosie Boycott, chair of the London Food Board, attributed it to the emergence of a 24/7 food culture and an insistence on cosmetic perfection in our produce. "You can eat all day long," she said. "The food industry has made massive profits out of getting us to eat more: think of the aisle of crisps in supermarkets. Meanwhile, the waste at the farm gate is staggering. There's a culture now of cheap, perfect food."

There was some debate, though, about the pursuit of perfect produce. Boycott pointed out that uniformity helps supermarkets with their packaging, but John Shropshire, managing director of fresh produce supplier G's Group, said consumers do also insist on perfection. "We're here to produce what the consumer wants – and there's no doubt about it, the consumer wants a good-looking product," he said. "Every iceberg lettuce will be turned over and people will leave it if it's brown underneath."

From the supplier's point of view, said Shropshire, focusing on improved agronomy and new technologies is a way of reducing waste, because it means growing less to produce the same amount of what consumers actually want and will buy.

"Because consumers always want the lettuce to be there, we have to grow enough," he said.

But does that pander to an unreasonable sense of entitlement? James Lomax, programme officer at the United Nations Environment Programme, described such efforts as "feeding the beast".

"You can say consumers have become fussy – I'd say spoilt," he said. "It's interesting that we feel everyone has to have freshly cut salad every day of the year. And you can blame it on the consumer, but consumers are influenced by the supply chain."

[<Source>](#)

China eyes Antarctica's resource bounty

By Nicola Davison in Shanghai, for theguardian.com



Chinese research vessel and icebreaker Xuelong (Snow Dragon) sets off for Antarctica. Photograph: Xinhua /Landov / Barcroft Media

China's colossal red icebreaker, the Xuelong or Snow Dragon, embarked on a 155-day expedition to Antarctica on Thursday. The voyage marks China's 30th trip to the continent, and many of the 256 crew are scientists hunting meteorites. Also onboard are construction materials to establish the country's fourth Antarctic research station, Taishan, which is to be located in Australian-claimed territory, a vast area of East Antarctica that houses an unknown wealth of coal, iron ores, manganese and hydrocarbon.

In 1960, one year before the Antarctic Treaty came into force, a geologist declared before the US science academy that he "would not give a nickel for all the resources of Antarctica". Today, in a world of dwindling fossil fuels and soaring energy needs, countries are spending lavishly to explore the potential



Photograph: Robb Kendrick/Aurora/Getty Images

of the world's last unexploited continent.

China, which is resource-scarce, is unambiguous about its polar aims. At a Politburo committee conference in July, president Xi Jinping emphasised the necessity of polar exploration to "take advantage of ocean and polar resources", according to a government website.

In the north, China has been granted observer status by the Arctic Council, allowing it more influence. In the south, the country is rapidly building research stations – a method of assertion on a continent where sovereignty is disputed. In 2003, China's yearly Antarctic spending was £12m; by 2013 it was £35m, accounting for 80% of the total polar budget.

Article seven of Antarctica's Protocol on Environmental Protection stipulates that activity relating to mineral resources, other than scientific research, is prohibited. But this ruling, up for review in 2048, allows geological surveillance. "It is necessary for us to fully understand the resources on the continent," says Guo Peiqiang, a professor of law and politics at the Ocean

University of China. "China's exploration of the continent is like playing chess. It's important to have a position in the global game. We don't know when play will happen, but it's necessary to have a foothold."

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Canada reveals climate stance with praise for Australian carbon tax repeal

By Suzanne Goldenberg, for theguardian.com

Canada has dropped any remaining pretences of supporting global action on climate change by gutting other countries to follow Australia's example in gutting its climate plan.



A protester holds a placard during a rally in Sydney against carbon tax. Photograph: Greg Wood/AFP/Getty

In a formal statement, the Canadian government said it "applauds" the move by Australia this week to repeal a carbon tax on the country's 300 biggest polluters.

"Canada applauds the decision by prime minister Abbott to introduce legislation to repeal Australia's carbon tax. The Australian prime minister's decision will be noticed around the world and sends an important message," the formal statement from Paul Calandra, parliamentary secretary to Canada's prime minister, Stephen Harper, said.

The Harper government withdrew from the Kyoto protocol on climate change in 2011 and Canada has failed to meet its own international emissions to cut greenhouse gas emissions – almost entirely because of its mining of the carbon-heavy Alberta tar sands.

But the praise for Australia marked the first time Canada has actively sought to discourage other industrialised countries from following through on their own climate change commitments.

On a more combative note, Canada on Wednesday went on the attack against the European Union's move to class carbon-heavy Alberta crude as a dirty fuel, labelling the finding as "unscientific".

Calandra, in his statement congratulating Australia, went on to claim that Canada is reducing greenhouse gas emissions. But that claim was at odds with the latest finding from the government's own Environment Canada that the country would blow through its international climate commitments by the end of the decade.

Under Canada's current trajectory, emissions were projected to be 734 mega tonnes – or 122 megatonnes higher than Canada's target of 612 tonnes under the international accord the country agreed in 2009.

Canada had agreed at the time to align its climate plan with America's and cut emissions 17% from 2005 levels by 2020.

But Environment Canada in its latest report projected that the country's greenhouse gas emissions by 2020 would amount to barely a 3% drop compared with the promised 17% cut.

Greenhouse gas emissions from Bitumen production are expected to rise four-fold by the end of the decade, according to Environment Canada.

Australia is the developed world's worst polluter per head of population, but Canada, under the Harper government, is close behind at 16.2 tonnes.

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Arctic oil spill is certain if drilling goes ahead, says top scientist

By Fiona Harvey and Shaun Walker, for *theguardian.com*

A serious oil spill in the Arctic is a "dead cert" if drilling goes ahead, with potentially devastating consequences for the pristine region, according to a leading marine scientist who played a key role in analysis of BP's Deepwater Horizon oil spill. The warning came as Russia filed court orders this week to have Greenpeace activists and journalists kept in prison for a further three months before their trial over a protest at Arctic oil drilling.



An oil rig off Greenland's coast in the Arctic waters. Photograph: Greenpeace

Concerns about the potentially dire consequences of drilling for oil in the region have intensified as the Russian government and others have begun exploration under the Arctic seas. In such a cold region, any spill would be much more troublesome, because the oil would not naturally disperse as it does in warmer waters, and because of the difficulty of mounting a clean-up operation in hostile weather conditions.

The "Arctic 30" – comprising 28 activists and two journalists – were arrested when Greenpeace's Arctic Sunrise vessel was boarded by Russian coastguards in September and are facing lengthy jail terms if they are convicted. They have been [kept in harsh conditions](#) in freezing cold jail cells with poor food, and are being moved 800 miles from Murmansk to St Petersburg.

Simon Boxall, an oil spill expert from the University of Southampton, told the Guardian exploring the region was inherently dangerous: "It is inevitable you will get a spill – a dead cert. I would expect to see a major spill in the not too distant future. I would be astonished if you did not see a major spill from this."

The conditions in the Arctic would vastly compound the problem, he said. "It's a completely different environment. In temperate climates, oil disperses quickly. Bacteria help [to digest the oil]. In the Arctic, the oil does not break down in this way – it can take decades before it breaks down. Nature will not help us."

During those decades, any spilled oil would be a serious hazard to marine life.

No industry is perfect, Boxall said, but the oil industry has behaved poorly in the

past. "There are lots of fail-safes on planes, but accidents still happen. At times, this is an irresponsible industry. Corners are cut, money is saved in small ways. Then it can go wrong and end up costing a huge amount of money, like in the Gulf of Mexico."

He added: "Different countries have different levels of health and safety. Russia does not have an enviable record on this."

Even without a spill, exploring the region could disrupt the Arctic environment, warned Jonathan Bamber of the University of Bristol. "You get an increase in shipping, and ships release their ballast water which contains species from other areas. So you could get the introduction to the Arctic of entirely foreign species and we don't know the impact of that. The Arctic ocean is very enclosed, virtually landlocked, so this could have very big consequences and affect the whole food chain."

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Tips:

We are observing that natural disasters like hurricanes, typhoons have become quite frequent. These have caused havoc all over the most recent has been the typhoon in Philippines. Environmentalists have warned of more frequent occurrence of such disasters if global warming is not checked. They say that the warming is accelerating and if this trend persists the existence of humanity will be at stake. Once again we request you responsible citizens that please do your bit. Following tips may help to contribute towards your efforts.

- Defrost your refrigerator periodically and clean your refrigerator coils to help your fridge breathe easier and require less energy.
- Do not over stuff your refrigerator much this will save energy.
- If you have to cook some item which is placed in refrigerator, take out from refrigerator and let it come to normal temperature. Similarly let hot foods cool on the counter before putting them in your refrigerator or freezer. Hot foods cause the unit to work longer and harder.
- In summers Use good thick curtains to block out solar heat and radiation.
- The furniture and appliances, that can be made serviceable by repairs should not be thrown or destroyed. If you do not wish to use such items give away to persons who need them or give in charity.
- Ensure that you cook/ serve only that much food which can be consumed so that there is no leftover.
- Instead sending greeting cards greet on phone or electronically on occasions like Christmas, New Year, Holi, Deepawali, id etc.
- Cut food and vegetables in small pieces it will take lesser time to cook.
- Cut food and vegetables in small pieces it will take lesser time to cook.
- Most of people when boiling milk keep it on low heat to avoid spilling of milk, remember while boiling/ cooking in open vessels, more heat is lost and if not heated quickly more heat will be lost and as a result it will take more time to boil and consume more energy/ fuel.
- Reflective window film can help reduce heat gain during the summer and it will protect your furniture and carpet. If fixing new windows you may consider glass with reflective surface which is freely available in the market.

Cleaner cookstoves can boost health and slow global warming

By Mark Tran, for theguardian.com



Women cook on a stove made out of mud in Shagra village in north Darfur.
Photograph: Mohamed Nureldin Abdallah/Reuters

Cleaner cookstoves could save a million lives every year, but costs need to decrease sharply for poor households in developing countries to be able to afford them, according to a World Bank report.

On thin ice: how cutting pollution can slow warming and save lives, published on Sunday evening, calls for action to reduce common pollutants such as soot, known as black carbon, to not only slow global warming, but prevent millions of deaths.

It warns that climate change in the cryosphere – snow-capped mountain ranges, glaciers and vast permafrost regions – could have dire human consequences from the resulting rise in sea levels, increased water stress and more extreme weather. For example, the release of large CO₂ and methane stores as a result of melting permafrost could contribute up to 30% more carbon to the atmosphere by the end of the century.

“The health of people around the world will improve greatly if we reduce emissions of black carbon and methane. Limiting these emissions will be an important contributor to the fight against climate change,” said Jim Yong Kim, president of the World Bank. “The damage from indoor cooking smoke alone is horrendous – every year, 4 million people die from exposure to the smoke. With cleaner air, cities will become more productive, food production will increase and children will be healthier.”

The death toll of from cookstoves using wood, charcoal, dung and crop residues exceeds the World Health Organisation's estimate of annual deaths from HIV and Aids, tuberculosis and malaria combined. Once lodged in the lungs, superfine particles, which include soot, cannot be coughed out, creating the conditions for disease.

Cookstove reduction measures offer by far the greatest potential benefits to human health and in slowing cryosphere warming, said the World Bank.

Improved cookstoves would have the biggest impact in the Himalayas. According to the report, more than 1 million premature deaths may be avoided annually in the region from all methane and black carbon measures combined. About 743,000 of these prevented deaths would arise from cookstoves measures. In terms of agricultural impact, less pollution could result in crop increases of staples such as rice of 15m tons annually, with almost 3m tons in additional crop yields occurring in China alone.

Cleaner cookstoves include those using liquid petroleum gas, biogas, ethanol or fans. The report notes that hundreds of public and private initiatives exist to bring cleaner stoves to women in the developing world. It also suggests that

as a first step the world should focus on the four clean cooking solutions. Cost and local acceptance, however, remain major barriers, although the report cites China's clean stove initiative as an example of a successful programme to promote clean cooking.

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Climate change crisis fund to assist poor countries almost empty

By John Vidal in Warsaw, for theguardian.com

The global fund set up to channel money to developing countries to combat dangerous climate change stands practically empty, with the largest pledge coming from a country that has no obligation to provide money at all.

A report from the Overseas Development Institute (ODI) shows that 10 developed countries, mainly European, have contributed a total of \$6.9m to the Green Climate Fund (GCF). South Korea, however, technically a developing country, has promised \$40m.

Sources close to the UK government said on Monday that no further pledges by rich

countries were expected to be made at Warsaw – to the dismay of some developing countries, who have been eager to see the fund established quickly, with clear guidelines on how the money will be mobilised and who will control it.

A separate ODI report shows that while rich countries have exceeded their target of raising \$30bn as “fast-start finance” (FSF) for developing countries to cut emissions and to counter climate change, 80% of the money provided has been reported as aid, meaning there is no way of knowing what is “new or additional”, despite the stated intent of rich countries in earlier climate meetings.

The ODI suggests developing countries are partially right. “While the United Nations Framework Convention on Climate Change stated that funding must be new and additional to be considered fast-start finance, our analysis found that in many cases, programmes that were funded prior to the FSF period were included,” it says.

Fast-start money has been a recurring source of argument at the UN climate talks, with many developing countries saying they have not seen money that rich countries claim to have provided.

The explanation, says the ODI, could be that most climate finance did not go directly to the governments of developing countries. “Only 35% went directly to recipient country governments. The majority was directed through international climate funds, development banks, and UN agencies, as well as private companies and NGOs, which then work with developing countries on climate-related initiatives,” the report says.

“There is significant overlap between climate finance and development finance. Development and climate change are integrally linked, and developed countries counted more than 80% of FSF as official development assistance (ODA).”

The ODI also found that climate finance pledged through multilateral climate funds fell by 71% last year.

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South Korea's \$40m pledge to the climate fund dwarfs that of rich countries. Above: renewable energy sources in Poland, host of the talks. Photograph: Jenny Bates

Is the Dubai desert about to go green?

By John Vidal, for *theguardian.com*



By 2030, Dubai will have cuts its carbon emissions by 29%, according to a state of energy report. Photograph: Bloomberg/Getty Images

Dubai, the Arab emirate often compared to a teenager because of its youth, breakneck growth and profligate use of resources, is to dramatically change its ways in an attempt to show the world that it can develop into an environmentally mature nation in just a few years.

The indoor ski-resort, the man-made islands, the world's tallest building, the chilled sand and Armani hotels are not about to disappear, but the non-stop construction party which has seen the small fishing village on the edge of a stony desert turn into a super-city of twisted glass towers and giant malls in under 50 years, may finally be over.

In place of Dubai's legendary excess and endless boom years comes a sober report from the state of energy on Wednesday, charting the new energy direction which the young city must take if it is to continue flourishing.

It must make strange reading for the average Dubai expat or emirati, normally used to being able to keep the air conditioning full on day and night and emit huge amounts of carbon, it makes strange reading.

Over the next 15 years, the emirate intends to cut its energy and water demand by 30%, retrofit 30,000 buildings to save energy, switch a quarter of the enormous government car fleet to run on compressed gas and keep the temperatures in many buildings at a modest 24C. Power subsidies will be slashed and new incentives offered to instal solar heating and electricity.

But that is just the start. As of last week, Dubai could generate just a fraction of the solar power of Britain or Germany despite the fact that it receives a nearly-guaranteed 10 hours of sun a day. That changed on Tuesday when Sheikh Mohammed bin Rashid Al Maktoum, ruler of Dubai, switched on phase one of a solar power plant 50km out of the city, as part of Dubai's bid to host the 2020 World Expo. It will have a capacity of only 24MW to start with, but in the next 15 years will grow into a monster 1GW plant covering 20 sq km of desert.

"The physical potential of solar energy in Dubai is enormous. It's possible it could provide more than twice Dubai's current electricity consumption", says Graeme Sims, British regulator of the water and electricity authority.

By 2030, says the energy report, Dubai will have cuts its carbon emissions by 29%, switched 30% of its \$100bn a year economy to renewable energy, 'clean coal' and nuclear, and initiated a plethora of energy- and water- saving initiatives.

It may be too late for the Dubai coastline which has been trashed by strings of housing developments, but the authorities believe they can avoid having to

desalinate 8bn gallons of water a year, turn waste into energy, curb pollution and recycle water.

Dubai grew up ecologically in 2008 when the recession hit and the property market crashed, says Ivano Iannelli, a former Italian diplomat who directs the Dubai carbon centre of excellence, and helped collate Dubai's green master plan.

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First Large-Scale Biogas Plant in US Coming Online in California

SustainableBusiness.com News

The first large-scale commercial biogas plant in the US is coming online in San Jose, California - it will turn food waste from local restaurants and businesses into energy and compost.

16 huge digestion chambers - each of which holds 350 tons of waste - will process the waste in about 21 days, using "dry fermentation anaerobic digestion." Bacteria breaks food waste down into compost and methane gas in an oxygen-free environment that requires little water. The gas is converted to electricity.

The facility is a partnership between GreenWaste, which collects garbage, recyclables and green waste, and Zanker Road Resource Management, which operates recycling facilities. They formed the Zero Waste Energy Development Company to develop the project.

When all three phases are online, it will be capable of processing 270,000 tons of organic waste a year. It's being built on an old landfill.

"The interest in biogas is growing very quickly," Julia Levin, executive

director of the recently formed Bioenergy Association of California, told *San Jose Mercury News*. "In the long run, there's a lot of potential for biogas to be used as transportation fuel. San Jose is on the cutting edge, but cities across California are trying to figure out how to better handle their waste. Biogas closes the sustainability loop on so many levels."

While composting is an important solution for organic waste, the fact is most of it ends up landfills. There, methane is created as it breaks down - one of the largest sources of this potent greenhouse gas.

We've written extensively about the benefits of biogas, an organic form of natural gas made from methane waste from landfills, dairies and sewage treatment plants. It's the perfect way to make natural gas from recycled sources - no fracking necessary. It can be used as fuel for transportation and to heat and cool buildings.

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The power of footfall: how cities of the future will harness energy

It's called piezo technology and it enables scientists to tap energy from many sources: roads, railways – and dancefloors

By Mike Scott, Guardian Professional



The power of footfall. An English company harnessed energy from spectators arriving at the Olympic park during London 2012. Photograph: Anthony Devlin/PA

Endless amounts have been written about what is the right path to a low-carbon future – but not much of that commentary has focused on the role that literal paths could play. Yet in the future we may all be generating energy wherever we go, whether we're walking, driving or sitting on the train, using a technique known as energy-harvesting.

There are two main approaches. One is to use mechanical technology to capture the energy and convert it into electricity and the other is to use piezo-electric materials, which produce electricity when they are put under pressure – when someone steps on them or drives over them, for example.

One of the best-known uses of the technique was in a club in Rotterdam, which installed an energy-generating dance floor, where the dancers created their own light show. While in the UK, a company, Pavegen, has generated energy from schoolchildren running to their next lesson, from thousands of runners at this year's Paris Marathon, revellers at the Bestival music festival on the Isle of Wight and spectators travelling to watch the London 2012 Olympic Games via West Ham tube station.

The technology is ideal for anywhere that attracts crowds, so ticket barriers at train and tube stations are an obvious application, but the concept will also work at shopping centres, sports venues, even airport terminals. And as a technique that produces more energy when more people travel across the energy-producing materials, it's a particularly elegant solution to matching supply with demand.

As well as harnessing the power of pedestrians, energy harvesting also works well in roads and on rails. An Israeli company, Innowattech, has been conducting tests on embedding piezo materials into roads and railways to generate energy as vehicles pass over them, which is then stored in batteries which can be used to power roadside lights or feed into the grid.

There is even a scheme being proposed to capture the wind energy produced by speeding. Unfortunately, at the moment calibrating the materials so that they produce maximum power when cars travel over them means they don't work when heavier vehicles pass by, so it is hard to make them work in real life. However, if car-only lanes or HGV/bus-only lanes were introduced, the potential would be huge.

Such restrictions do not apply if piezo materials are not used, however. A Sainsbury's store in Gloucester installed a system that generates power from shoppers' cars and delivery trucks as they enter the car park.

On the road, it is not just the action of cars on the surface that can produce energy; the technique can cut fuel use within vehicles as well. One example of this is the Kers (kinetic energy recovery system) that is used in Formula One cars to capture the energy created by braking. The concept will be extended next season, when teams will also use the heat produced by their exhaust systems to help them to complete races using a third less than their annual fuel allowance, while still going at the same speeds. The technology can be expected to make its way into commercial vehicles eventually.

And because piezo materials can generate energy from vibrations, they also have the potential to harvest energy from every motor in every factory and industrial application in the country. Some of the biggest benefits will come from energy harvesting's role in sensors, says Fred Pimparel, technical manager for piezo-electric applications at Morgan Advanced Materials.

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General Motors Soon Completes Biggest Rooftop Solar Array in Ohio

SustainableBusiness.com News

General Motors will soon have the biggest rooftop solar array in Ohio when its 1.8 megawatt (MW) system comes online next month.

Sitting on top of GM's Toledo Transmission plant, that huge solar system will still only be enough to cover 3% of the plant's power.

Solar canopy with electric car chargers:



"Having 21,000 solar panels on Toledo's roof is a great visual representation of our commitment to renewable energy," says Rob Threlkeld, GM's manager of renewable energy. "It proves to our employees and the people who live in and around Toledo that clean energy plays a significant role in the building of our vehicles."

By the end of this year, GM will have more than 40 MW of solar at facilities worldwide, with a goal of reaching 60 MW by 2015. It ranks #21 in the US for corporate use of solar and tops the auto industry.

Its venture capital arm, General Motors Ventures, has an equity stake in commercial solar developer Sunlogics, which designs and operates systems in the US, Canada, and Europe.

These corporate solar installations make a big difference. When Walmart added solar to 12 Ohio stores that alone increased the state's solar capacity by 10%.

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Rotterdam: designing a flood-proof city to withstand climate change

The Dutch delta-city is preparing for the battle with climate change through innovative sponging and water storage design

By Elisabeth Braw, *Guardian Professional*



The Erasmus Bridge. Can climate change adaptation overtake Erasmus as Rotterdam's number one claim to fame? Photograph: Jasper Juinen/Getty Images

Water plazas, green walls, floating neighbourhoods. Rotterdam, the famous Dutch university city, is building a captivating new infrastructure, but not out of vanity. If it doesn't come up with innovative solutions, the city is set to lose its battle with climate change.

"We're really planning ahead", says Alexandra van Huffelen, Rotterdam's vice mayor in charge of sustainability. "The Dutch have lived below the sea level for centuries and are used to dykes and barriers. But today we're experiencing heavier and more unpredictable rainfalls, so behind the barriers we're turning the city into a sponge."



Rotterdam floating pavilion Photograph: Marc Heeman

A crucial sponge. Surrounded by water on four sides, this delta city of some 600,000 people can't flush the sudden stormwater away. Instead, it has embarked on a climate change adaptation strategy that turns every conceivable area into water storage. "We have squares that are set lower than the surrounding streets and pavements that will function as water plazas and fill themselves up with water", explains van Huffelen.

"We've also built water storage facilities, for example an underground parking garage with a basin the size of four Olympic swimming pools. And we've introduced more green areas, including green roofs and green facades, that will be

You can even watch a livestream of the Benthemplein water plaza, which will be completed on 4 December, being built.

The city is also in the process of building a floating neighbourhood, to be

completed within the next three years, that will feature homes, offices, a school, a park and even a dairy factory. More are planned in future. A floating pavilion in the inner harbour is being used as a conference centre.

If this sounds surprisingly positive, it's because Rotterdam sees climate change adaptation as a selling point. Local companies involved in building the futuristic solutions report doing good business selling their expertise to other cities.

"The world makes its money in big cities, so they have to be operational, which means they'll need climate change protection and infrastructure", notes Piet Dircke, director of global water management for the Dutch-based company Arcadis, which advises cities from Jakarta to New York on climate change adaptation. "It's a good business opportunity. For me, being from Rotterdam is good because Rotterdam is a living showcase of climate change adaptation."

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South Africa: Where Clean Energy is Growing the Fastest

SustainableBusiness.com News

South Africa has concluded the third of five bidding rounds in its Renewable Energy Independent Power Producer Procurement Program (REIPPPP).

17 renewable energy projects, valued at \$3.3 billion, received the go-ahead out of 93 bids. In total, 1.5 gigawatts (GW) of projects are approved: seven wind, six solar PV, two concentrating solar, one landfill gas and one biomass.

China Longyuan Power Group will develop 244 megawatts (MW) across two wind farms.

Close behind it is a 100 MW solar concentrating plant to be built by Abengoa, which recently went public on Nasdaq (ABGB). Xina Solar One will have 5-hour energy storage and combined with its 100 MW KaXu Solar One, which is under construction, will be the biggest solar complex in Africa.

It makes use of parabolic trough technology:

A consortium led by Mainstream Renewable Power will build three wind projects totaling 360 MW, and will come online next year. That's in addition to 238 MW awarded in the first round of bids.

With a development pipeline of 19 GW, Mainstream recently closed a €100 million equity investment with Japanese Trading House Marubeni Corporation.

US-based SolarReserve won a bid in the previous round.

The consortium behind these projects now hold a 20% share in South Africa's solar market.

Earlier this year, Johannesburg-based Standard Bank Group and the Industrial and Commercial Bank of China agreed to jointly finance projects that win bids in the program.

The program is intended to quickly boost renewable energy in the country while weaning it off coal, which supplies 85% of its electricity. 3.7 GW of renewables will be added by the end of 2016 after the five bidding rounds are completed.

Last year, investors poured \$5.7 billion into South Africa renewable energy projects, which have 20 year power-purchase agreements with the utility, Eskom, reports Bloomberg New Energy Finance.

Because of this program, South Africa is showing the most rapid clean energy growth in the world.

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Green Technology Spotlight: Wind Towers Instead of Wind Turbines

SustainableBusiness.com News

A company called SheerWind, Inc. is developing a wind technology that purportedly can generate 25 megawatts without having to build a mega-size turbine.

One of its INVELOX towers produces four times the energy of the biggest offshore turbine and six times that of the largest onshore turbine.

If the technology gets off the ground, one tower would supply 25,000 US homes at a fraction of the size and cost of traditional wind turbines, says SheerWind.

It works in a somewhat analogous way to concentrating solar.

It captures, accelerates and concentrates wind in a tower, increasing the velocity of wind. "By concentrating and accelerating wind, we create a similar effect to natural wind corridors used by traditional wind towers. We are able to exceed current industry standards and make wind power costs competitive with fossil fuels," says Cyndi Leshner, Executive VP of Sheerwind, and former CEO of Xcel Energy Company. And this is without subsidies.

The technology has been reviewed and validated by experts at major research universities and prototypes have been tested under controlled laboratory conditions.



Here's how SheerWind describes the technology: Conventional wind turbines use massive turbine generator systems mounted on top of a tower. INVELOX, by contrast, funnels wind energy to ground-based generators. Instead of snatching bits of energy from the wind as it passes through the blades of a rotor, wind is captured with a funnel and directed through a tapering passageway that naturally accelerates its flow. This stream of kinetic energy then drives a generator that is installed safely and economically at ground level.

Bringing the airflow from the top of the tower to ground level allows for greater power generation with much smaller turbine blades. It also allows for networking, allowing multiple towers to direct energy to the same generator.

The unit is about 50% shorter than traditional wind towers and uses a ground-based turbine with blades that are 84% smaller. Fewer generators are required, so equipment and maintenance costs are lower. Most importantly, energy output is greater.

INVELOX is scalable, equally suitable for use in major wind farms or micro-generation settings. It will produce power effectively at much lower wind speeds than current systems do, which means it will have a dramatically wider geographical range of use.

[<Source>](#)

Hamburg's answer to climate change

The German city is planning a green network that will cover 40% of the city area, contributing to resilience and allowing biking, swimming and nature watching in the city

By Elisabeth Braw, Guardian Professional



Hamburg is planning a green network that will cover not just the outskirts of the city, but also the city centre.

Boris Johnson, don't read this: there's a European commercial hub that promotes bicycling as the main mode of transportation. It is, in fact, embarking on a plan to build a network around bikes and pedestrians, linking car-free roads to parks and playgrounds, from the city centre to the suburbs.

Welcome to Hamburg, an environmental pioneer in the mould of its regional neighbour Copenhagen. Its planned green network will cover 40% of the city's area. "It will connect parks, recreational areas, playgrounds, gardens and cemeteries through green paths", Angelika Fritsch, a spokeswoman for the city's department of urban planning and the environment, tells Guardian Sustainable Business. "Other cities, including London, have green rings, but the green network will be unique in covering an area from the outskirts to the city centre. In 15 to 20 years you'll be able to explore the city exclusively on bike and foot." The green network will even connect animal habitats, enabling critters to crisscross the city without risk of being run over. Perhaps more importantly, the network will absorb CO2 emissions and help prevent floods when inevitable superstorms strike.

"Hamburg has always been a green city with lots of parks", notes Jens Kerstan, leader of the Green Party in Hamburg's state parliament. "The green network makes sense from a climate change adaptation perspective, especially since our residents are quite progressive when it comes to climate change adaptation. Many Hamburgers are willing to give up their cars, which is very unusual in Germany."

Climate change will, in fact, leave cities little choice but to develop plans like the green network. Fritsch points out that thanks to its sea winds, Hamburg is better positioned to combat warmer temperatures than, say, Berlin. But increasing temperatures are already affecting this North Sea metropolis as well. "Today the average annual temperature is nine degrees Celsius, 1.2 degrees more than it was 60 years ago", reports Dr Insa Meinke, director of the North German Climate Bureau at the Institut für Küstenforschung (Institute of Coastal Research). "When we have a cold winter there are always people saying, 'so where's your climate change now?', but the cold winters are simply fluctuations." According to data from the Institute for Coastal Research, Hamburg had five hot (above 30 degrees Celsius) summer days last year, compared to two in 1952.

Climate change is already affecting the port city's water level as well. "Compared to 60 years ago, the sea level here has risen by 20 centimetres", explains Meinke. "As a large city, Hamburg is truly at risk. Storm surges could rise by another 30 to 110 centimetres by 2100." Hamburg, in other words, needs its green network because it will help limit the effects of floods.

[<ReadMore>](#)

Is 'natural capital' the next generation of corporate social responsibility?

Accounting for environmental impact by placing monetary value on the natural world could allow corporations to manage resources sustainably

The World Forum on Natural Capital takes place between 21 - 22 November

By Tim Smedley, *Guardian Professional*



If we are taking ecosystems to breaking point, they will stop providing the raw materials which those businesses are trading on. Photograph: David Cheskin/PA

Almost two years ago to the day, sports brand Puma published its first environmental profit and loss account (EP&L). This wasn't simply a new twist on a CSR report, this was a step change. Rather than only measuring emissions or energy use, this was an attempt to put a monetary figure on the 'natural capital' used by Puma to run its business. The figure came to €145m (£121m), accounting for the environmental impact caused by greenhouse gas emissions, water use, land use, air pollution and waste in 2010. In other words, this was a company acknowledging the environmental debt that it owed.

Natural capital reporting and EP&L's have since picked up pace, thanks to pioneers such as Puma. The first World Forum on Natural Capital is taking place in Edinburgh later this month (21-22 November) organised by the Scottish Wildlife Trust in partnership with United Nations Environment Programme, IUCN, the World Business Council for Sustainable Development and the TEEB for Business Coalition. And according to Jonathan Hughes, forum director and deputy chief executive of the Scottish Wildlife Trust, natural capital is a concept whose time has come.

"What [natural capital reporting] does is make visible the value of the natural world that we have taken for granted for so long, and that has been completely invisible to economic decision-makers up until now", says Hughes. "The current crisis in natural capital is comparable to the financial bubble that burst in 2008. We're creating a natural capital debt bubble... If we continue to take resources from the planet at the rate we're taking them, then we will eventually reach a tipping point."

We are already perilously close. According to the Millennium Ecosystems Assessment, around 60% of the world's ecosystems are already degraded. Climate change and extreme weather events are a reality. The global species extinction rate is running at around one thousand times the background rate recorded by the fossil record.

Rather than stand helplessly by as resources and biodiversity disappears, natural capital reporting could allow corporations and governments to measure and manage resources sustainably, argues Hughes. "People quite rightly say 'you can't put a pound sign on nature, it's priceless'. To which we would say, it is priceless but it's not valueless. We have to understand the value of nature in all aspects of our lives in order to convince the

unconverted, the hard-nosed economists, to actually think of it as having a value as well."

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First Major US Transmission Project in Decades Brings Wind Energy Across West

SustainableBusiness.com News

The Department of Interior has given final approval for the first major US transmission project in decades - and one that will carry renewable energy across the western US.

The 990-mile Gateway West Transmission Project will be able to carry about 1.5 gigawatts of energy from southern Wyoming to southern Idaho. Most of the energy will be from the many wind farms in the region.

It will transmit electricity to load centers from Utah to Washington State.

Jointly proposed by Rocky Mountain Power and Idaho Power, they will build it in 10 segments which Interior's Bureau of Land Management designed to



make use of existing transmission corridors and avoid sensitive habitat.

Although about half the route is on federal public land, the final two segments in the westernmost section still have to be worked out. To skirt the 485,000 acre Snake River Birds of Prey National Conservation Area, it has to pass through privately owned land instead.

Concerns about the route have held the project back for seven years; the eight segments that have finally been approved will be completed between 2016-2021.

"The line will strengthen the Western grid, bringing a diversified portfolio of renewable and conventional energy to meet the region's projected growth in electricity demand," says Interior Secretary Sally Jewel.

Impressive as this project is, Gateway West is part of a much larger transmission project. In the end, the \$6 billion line would carry 4.5 GW across 2000 miles through Utah, Wyoming and Idaho.

Texas is finishing up a bigger, \$6.8 billion transmission project. Nearly 3,600 miles long, the transmission lines will be able to send 18.5 gigawatts of wind across Texas to all major cities in the state.

Read our article, Landowners Get Paid for Wind Turbines, How About Transmission Lines?

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Ford Motor's 10-Acre Green Roof Launched an Industry

SustainableBusiness.com News

When we first heard of green roofs, they sounded like a great idea but one that would have a hard time gaining traction.

One of the great successes of green building, there are more than 10,000 green roofs in the US today.



Back in 2003, when there were just 50 green roofs in the US, Ford Motor Company became the host of the largest in the world. Sited on top of its Michigan River Rouge truck factory, it was viewed as a pioneering strategy for brownfield redevelopment, corporate citizenship, and environmental

regeneration.

This month marks its 10 year anniversary, and it remains the largest living roof in North America at 10.4 acres.

Designed by preeminent green architects William McDonough + Partners, it is composed of drought resistant species of sedum, known for attracting beneficial insects, birds and butterflies.

"It sustains a dynamic ecosystem of over 35 insect, spider, and bird species and 11 plant species. Within five days of the living roof being installed, local killdeer had nested and laid eggs in the sedum," says Bill McDonough.

Intended to last twice as long as a conventional roof, it's doing far better than that. All the original plant species have survived largely on rainwater, without having to be replaced. Besides supporting a diverse ecosystem, the biomass removes carbon from the atmosphere and reduces energy use at the Ford assembly plant. It also is part of a storm water management system that reduces run-off and costs two-thirds less than a conventional treatment process.

McDonough + Partners describes it this way:

As Ford made plans to expand the manufacturing facility at the Rouge, they were faced with an estimated \$50 million to cleanup toxic storm water. It was flowing across a vast area of impervious surfaces into the Rouge River - the EPA demanded it be cleaned up to meet water quality regulations.

Ford hired William McDonough + Partners to develop a master plan that integrated storm water management into the landscape. The result was a 10-acre green roof on top of the 1.1 million square foot truck manufacturing plant. It is the heart of a system of wet meadow gardens, porous paving, hedgerows and bioswales that attenuates, cleanses, and conveys storm water across the site.

Hedgerows lined with swales provide infiltration for rainwater, block the cold

winter winds, and frame views of the awe-inspiring coke ovens and blast furnaces, juxtaposing the natural and the industrial and making the presence of these structures more keenly felt from the public areas of the site.

By relying on a landscape-based infrastructure requiring minimum use of pipes, the storm water system cost \$15 million, less than a third of conventional practices, catapulting the green roof industry forward. The Green Roof business is growing rapidly, expected to reach a \$7 billion market by 2017.

Green roofs are found all over the US today, from the top of the Empire State Building to Walmart stores, at universities and even at airports.

[<Source>](#)

Nissan's Electric Leaf is Profitable

SustainableBusiness.com News

In great news for electric cars, Nissan says its electric Leaf is profitable now, and they are ramping up US production.

Cutting the price helped a lot - since the \$6000 cut on the sticker price, demand has been growing. And the Leaf is the top reason customers are referred to the Nissan brand, Jose Munoz, Senior Vice President of Americas sales and marketing told reporters at an automotive conference, reports *Reuters*.

"From a purely attraction and branding point of view it's already a very good car," he says.

When Nissan shifted manufacturing of the Leaf from Japan to the US it was able to cut the price by more than \$6,000, bringing the sticker price to \$29,650.

Since then, more than 2000 Leafs have sold per month, up from 9800 for all of 2012. There are 34,000 Leafs on US roads today and 75,000 worldwide. It has a 75-mile range, rated at 115 miles per gallon equivalent.

Meanwhile, BMW, which just delivered its first electric car in Germany, says it already has orders for 10,000 cars. Its i8 plug-in hybrid sports car, which debuts in mid-2014, is sold out.

And Volkswagen announced it will electrify all segments of its car lines by equipping manufacturing plants with standardized assembly kits.

"We are able to produce cars on the same assembly line, bumper-to-bumper, with conventional, electrified, and CNG powertrains. This flexible strategy enables us to react fast and cost-efficiently to actual demand and thus reduces risks," says Rudolf Krebs, VW's Commissioner for Electric Drive Systems.

By 2014, VW will have 14 models of hybrids, plug-in hybrids and all-electrics. As demand rises, they will be able to outfit up to 40 models with alternative drivetrains. The company - which plans to manufacture batteries in-house - has hired 400 experts and trained 70,000 employees in e-mobility development, production, and servicing, says Krebs.

"The objective of the program is to continuously improve the environmental compatibility of the production process," explains Peter Bosch, Head of Strategy, Processes and Organizational Structures. By 2018, waste, energy, water consumption, solvents and carbon emissions will be down 25%, while renewable energy will increasingly power factories.

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Floating windfarms raise hopes for a greener future

By Terry Macalister, for *The Observer*



The Hywind floating turbine off Norway's coast has been a testbed for the system.

A floating windfarm, which ministers hope could hold the key to cutting the cost of renewable energy, has been given the go-ahead by the Crown Estate. The Buchan Deep project will see five turbines with a combined power of 30 megawatts installed by the Norwegian oil company Statoil off the coast of Aberdeenshire in 100 metres of water.

Approval comes as rising fuel bills and a wavering political commitment to developing a low-carbon economy is leading some energy companies to consider cutting back on offshore wind.

Energy and climate change minister Michael Fallon said putting turbines on floating platforms rather than concrete bases in the seabed "underlines the dynamism of the sector". The scheme follows a trend set in the North Sea oil and gas business, where floating production platforms drastically reduced the cost of hydrocarbons and made it possible to move into deeper waters.

The wind industry has set itself a target of cutting its costs by 30% and the Buchan Deep scheme is pencilled in as a major contributor if the trials go well. The Crown Estate, which manages most of the seabed around the UK, says it worked with Statoil for more than two years before approving the project.

"Investing in new technologies will be crucial to unlocking offshore wind potential over the long term while we focus on the current development pipeline," said Huub den Rooijen, head of offshore wind at the Crown Estate.

Fallon said: "This innovative project will lead to the construction of the first floating offshore windfarms in the UK. This underlines the UK's attractiveness as the number one destination for offshore wind development."

Statoil, which makes the bulk of its earnings from selling oil and gas, has been experimenting with one floating turbine, the Hywind, off the coast of Norway since 2009. The Scottish project allows the company to test the system as an "array", or farm, to see how it will work with half a dozen turbines operating simultaneously in close proximity. Statoil has not given a final investment approval to the Buchan Deep scheme but called the go-ahead from the Crown Estate a significant milestone towards getting a floating farm up and running.

"We look forward to a progressed dialogue with key stakeholders in Scotland, including communities, the local supply chain and the authorities," said Siri Espedal Kindem, Statoil's senior vice-president for renewable energy. "We will continue to mature the Hywind pilot towards a final investment decision, by conducting marine surveys and concept studies in order to demonstrate technical and commercial feasibility."

The need for cheaper solutions comes as the government's climate change adviser warned that offshore windfarms may not be built unless subsidies are

increased by the government.

The committee on climate change wrote to Ed Davey, the energy and climate change secretary, in September saying that "required investment" was at risk unless further financial support was provided. A group of industry developers have made the same point to government.

But ministers believe it is up to industry to find ways of reducing the costs of offshore wind, and in late June unveiled proposed reductions in subsidy levels for the rest of the decade.

[<ReadMore>](#)

Leave coal in the ground to avoid climate catastrophe, UN tells industry

By John Vidal and Graham Readfearn in Warsaw, for *The Guardian*

Most of the world's coal reserves should be left in the ground to avoid catastrophic global warming, the UN's climate chief has told the \$3tn global industry.

In a speech to a gathering of industry executives, Christina Figueres challenged the industry to urgently transform itself, diversify into renewable energy and "radically change ... rapidly and dramatically for everyone's sake".

"By now it should be abundantly clear that further capital expenditures on coal can go ahead only if they are compatible with the 2C limit", she said at the [international coal and climate summit in Warsaw](#), being held at the same time as UN climate talks.

Figueres said they had "the opportunity to be part of the worldwide climate solution" by switching off old coal power plants, capturing and storing carbon from new plants and leaving most of the world's coal reserves in the ground. She also said coal power could help poorer countries' economic development and poverty reduction, but that the industry "must change".

"I urge every coal company to honestly assess the financial risks of business as usual; anticipate increasing regulation, growing finance restrictions, and diminishing public acceptance," she said.

Figueres was later backed by the energy minister, Greg Barker, who is in Warsaw for the UN negotiations. "Coal represents the biggest threat to climate stability



The La Cygne coal-fired power plant in eastern Kansas. Photograph: Charlie Riedel/AP

in the medium term. If we can keep coal in the ground, it could have a profound impact on the growth of the world economy. The question is how do we keep unabated coal in the ground," he said.

But Barker backed gas over renewables. "Gas is the way to ensure we burn less coal over the next two decades," he said.

At a later press conference, Figueres said the industry needed a "deep, deep transformation" and should reinvent itself as a developer of renewable energy.

"They really need to do a major, major rethink and a major shift in the deployment of their capital [towards renewable energy] ... there is no doubt they are the energies of the future," she said.

Her remarks took both the coal industry and environment groups by surprise. The industry had invited her to talk in expectation that she would legitimise their continuing growth if they adopted new technologies. The activists had been critical of her talking to the industry at all.

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Pacific Northwest Joins to Combat Climate

SustainableBusiness.com News

Big news today - leaders in the Pacific Northwest agreed to move in lock-step, harmonizing their policies to fight climate change and promote clean energy.

This reminds me of a novel from the 1970s, *Ecotopia*, and it would be amazing if Ernest Callenbach's vision came true. Although the Pacific Northwest isn't seceding as they do in his novel, they are tired of waiting for the rest of the US to catch up with their egalitarian, environmentally sane

PACIFIC COAST ACTION PLAN *on* CLIMATE AND ENERGY



vision and they set out to create it on their own ... together.

California, Oregon, Washington and British Columbia - which, with 53 million residents represent the world's fifth largest economy - signed the Pacific Coast Action Plan on Climate and Energy. It commits them to aligning their policies so they move in tandem on getting to a clean energy economy.

Oregon and Washington will adopt carbon pricing programs and clean fuel standards already in place in California and British Columbia. All four will have the same mid and long-term targets for cutting emissions.

Signatories are the Governors of the three states and the Prime Minister of British Columbia.

California Jerry Brown calls the steps "modest," but "we have to take action." Washington Governor, Jay Inslee, says he hopes this will send a message to the nation's capital. "Congress has ground to a halt because of climate deniers. I hope this can restart a national conversation, and hopefully action, on climate change."

"This Action Plan represents the best of what Pacific Coast governments are already doing, and calls on each of us to do more together to create jobs by leading in the clean energy economy, and to meet our moral obligation to future generations," says Inslee. "Each of the governments here is already taking bold steps on climate change; by joining forces, we will accomplish even more."

"Oregon supports the Action Plan because we are already seeing how our commitment to clean energy is changing the face and fortune of our state, accounting for \$5 billion in economic activity and 58,000 jobs," notes Oregon Governor Kitzhaber.

All four jurisdictions will account for the costs of carbon pollution and look to connect their programs to create a unified, predictable effort across the entire region. Each jurisdiction will adopt low carbon fuel standards.

The Pacific Coast Collaborative is behind the move, which brings the region's leadership together to have a common voice on the most important issues.

Even some business groups that have opposed California's emission targets came out in support of a regional approach. "We have always believed that we need a broad market that includes not only other states but other countries, in order for it to function efficiently," Shelly Sullivan of the AB 32 Implementation Group, told the *LA Times*.

The group is named for the 2006 law requiring California to reduce its greenhouse gases to 1990 levels by the year 2020.

"We have long argued that a state-only approach would crush the state economy," Sullivan said. Here's what they agreed to:

- 1. Put a Price on Carbon:** California and BC will continue their programs; Oregon wants to set a price on carbon emissions and Washington wants a cap on carbon emissions and the use of market mechanisms to meet those limits.

It's not clear how they plan to mix California's cap-and-trade with BC's carbon tax and how that would roll-out in Oregon and Washington.

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Ford and Microsoft invest in \$1 billion bond for climate projects

By Will Nichols

Ford and Microsoft were among investors in a \$1 billion green bond launched last week to support "climate smart" investments in emerging markets.

It marks the second \$1 billion green bond transaction this year from the International Finance Corporation (IFC), an Aaa/AAA rated global development institution and member of the World Bank Group.

Proceeds of IFC green bonds are used for private sector investments in renewable energy, energy efficiency and other areas that reduce greenhouse gas emissions, such as installing solar and wind power capacity and providing financing for technology that helps produce energy more efficiently

IFC said in a statement that the bond transaction, jointly led by BofA Merrill Lynch, Citigroup, Crédit Agricole CIB and SEB, was heavily oversubscribed and sized to address the demand from "an increasing number of investors interested in climate-related opportunities." The final order book contained 50 orders from investors such as BlackRock, Deutsche Bank Asset and Wealth Management, Ford Motor Company and Microsoft.

Bond issues are seen as an increasingly important way to raise funds for green projects, with the green bond market now estimated at \$346 billion after doubling over 2012.

Progress is being made with bonds of all sizes, ranging from relatively small issues from individual companies to the huge issues being orchestrated by the likes of IFC. Earlier this year, green power company Good Energy raised \$24 million to expand its renewable energy portfolio -- three times its initial target -- while in April the European Investment Bank secured \$80 million from a bond issue to invest in renewable power and energy efficiency projects.

The latest deal was hailed as a milestone for the growing green bond market and a demonstration of how the capital market can play an important role in driving climate finance.

Pierre Blandin, global head of DCM-SSA origination at Crédit Agricole, said: "This second IFC benchmark Green Bond demonstrates the far-reaching investor interest into liquid, benchmark-sized issue whose proceeds will fund environmental-related projects."

This article originally appeared at Business Green.

US dollar bill image by Vasily Koval via Shutterstock.



[<Source>](#)

The Passivhaus's fabric-first approach to energy efficiency

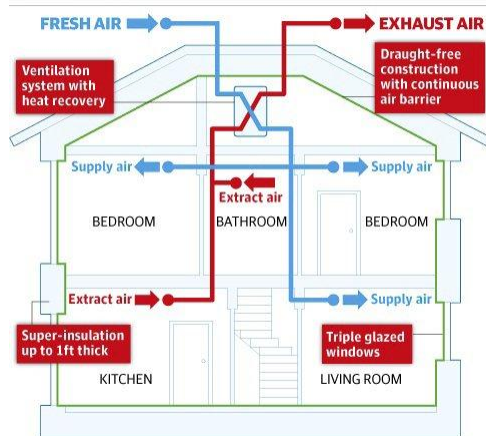
By Oliver Wainwright, for The Guardian



Justine Hutton and her children at their Passivhaus in Oldham Photograph: Christopher Thomond for the Guardian

It may sound – and sometimes look – like a facility for pacifying particularly violent criminals, but **Passivhaus** is in fact the gold standard for ultra-low energy homes, which is enjoying increasing popularity as heating bills continue to rise at astronomical rates. Developed in Germany in the early 90s by Bo Adamson and Wolfgang Feist, the Passivhaus Standard is based on a set of principles that mean homes should be able to remain at a comfortable ambient temperature of around 20C with a minimal amount of heating or cooling.

How a passive house works



much heat inside the home as possible.

They also rely on a box, usually kept in the loft: the MVHR, or mechanical ventilation heat recovery unit, a heat-exchange system that uses air from warmer rooms in the house to heat fresh air coming in.

"There are a lot of myths around Passivhaus, like you can't open the windows and people will suffocate if the MVHR breaks down," says Kym Mead, director of Passivhaus at the Building Research Establishment. "It's all nonsense – you can live in it like a normal house. It's based on the idea of harvesting the heat that comes from occupants and their devices, like TVs, computers, cookers and showers."

The first Passivhaus homes, built in a suburb of Darmstadt in 1991, look a little like a portable classroom block, a clunky aesthetic which these ultra-low energy houses have struggled to shake off since.

[<ReadMore>](#)

How CropMobster aims to crowdsource surplus food

By Nick Papadopoulos



This is a guest post from Nick Papadopoulos, CEO and co-founder of CropMobster and the general manager for Bloomfield Farms in Sonoma County, Calif.

At our family's Bloomfield Farms, it's a straight-up punch in the gut to watch boxes of perfectly edible broccoli, cabbage and other veggies return unsold from a farmers market. It's frustrating to till under acres of slightly blemished (and therefore unsellable) tomatoes or kale knowing that this produce should have been sold or donated. From another angle, consider the parent or fixed-income senior struggling to put fresh veggies on the table combined with the knowledge that more than 50 percent of U.S. fruit and vegetable production is wasted.

This is the frustration that gave rise to CropMobster, an online exchange and instant alert service. The idea was simple. What if we built a website where anyone with surplus food could publish alerts online? And what if these alerts could be broadcasted via social media to reach community members, small businesses and hunger relief groups? Could something like this help? Well, seven months in, the answer for our team at CropMobster is a definitive yes.

Why the surplus on our farm?

As the NRDC and others have assessed, food loss and waste occurs for many reasons. A kale crop might "go to seed" due to unseasonably warm weather. When this occurs, we need to plow it under and replant ASAP to get back on track with production. In other situations, some of our tomatoes might be blemished or the carrots a bit contorted, rendering them in both cases unsellable. There was also a situation last year when we had 40 boxes of organic broccoli that had started to yellow just a bit due to the heat. Despite four hours on the phone trying to find a hunger relief group, we could only find a home for eight boxes. The other 32 went to the compost.

At other times, issues arise from planning and forecasting. We've had more than a few situations where we've produced a great crop -- dry farmed potatoes, for example -- only to have a hard time selling out. And when it comes to farmers markets, it's difficult to know how much to harvest, pack and sell.

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8 States Join to Get More Electric Cars on the Road

SustainableBusiness.com News

Governors of eight states are coming together to get more electric vehicles (EVs) on the road, agreeing to a target of 3.3 million zero emission vehicles by 2025.

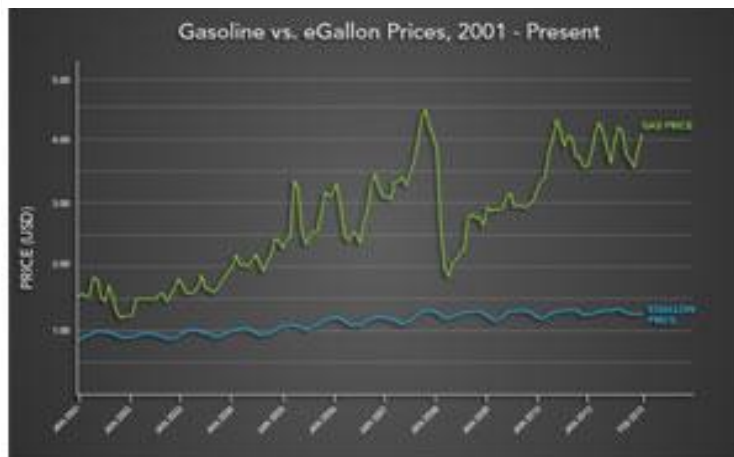
Not surprisingly, the states are: California, Oregon, Maryland, New York, Connecticut, Massachusetts, Rhode Island and Vermont. They account for almost 25% of the US car market.

They signed a pact to develop joint policies that can increase electric, plug-in and hydrogen car sales, and agreed to draft an implementation plan within six months.

"This is not just an agreement, but a serious and profoundly important commitment," says California's Governor Jerry Brown. "From coast to coast, we're charging ahead to get millions of the world's cleanest vehicles on our roads."

They plan to harmonize building codes to make it easier to add EV charging stations and are considering other measures such as giving car owners favorable electric rates for charging at home and other financial incentives; buying vehicles for government fleets; and allowing EVs to use the HOV lane in all 8 states.

California just passed two laws that facilitate EV use: one law modifies the building code so that all multi-family homes, businesses and shopping centers must have EV chargers. Palo Alto just voted to require wiring for EVs in all new homes.



Because of California's zero emissions law (1.4 million vehicles by 2025) and strong rebate incentives, almost 30% of the 165,000 EVs that have been sold in the US are in that state, and it's expected to dominate sales through 2020. Each of the 8 states have also adopted policies requiring that a percentage of cars sold be zero emissions by 2025.

Will they adopt California's cap-and-trade for EVs program?

Automakers strongly support the agreement. "3.3 million cars is not an achievable goal given what we're doing today from an infrastructure investment standpoint. It's just not," Dan Gage of the Alliance of Automobile Manufacturers told *Denver Post*.

Not only is this move important for climate change mitigation, it will boost state economies. It costs two-thirds less to charge a car than to fuel with gasoline, saving people about \$6000 over the life of a car. It also makes those states more attractive to a growing industry, as Los Angeles has noticed.

So far this year, 59,000 EVs have sold, more than in all of 2012.

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Green homes for the masses – with no energy bills for 10 years

In Houston, Texas, they're selling cheap, green homes where you are guaranteed to have no energy bills, writes Lisa Palmer

By Lisa Palmer, Guardian Professional

A Houze house, one of the affordable homes with no energy bills being built in Houston

Imagine living in a house so efficient that the builder guarantees you'll have no energy bills for the first 10 years of ownership.

Such is the promise of Houze Advanced Building Science, a real-estate company in Houston, Texas. The company is building net zero-energy homes, equipped with walls that insulate like a thermos, appliances that sip little electricity and one-of-a-kind power cells.

The houses are some of the first affordable, net energy-producing homes in the United States. And, in Houston, they're moving in to support an otherwise underserved neighbourhood, Independence Heights.

David Goswick, founder and chief executive of Houze, came up with the idea behind the company in 2008, when the US housing market slowed to a standstill. He gathered a team to assess the needs of homebuyers of the future.

"We pushed the pause button and re-evaluated for two years. We realised that the best home investment is in efficiency first," Goswick says. In fact, the "ze" in the company's name refers to "zero energy", he says, because he guarantees the homeowner won't have to make any electricity or gas payments.

The smart thing about Houze is its proprietary residential co-generation power cell, which is about size of an exterior air-conditioning unit. The power cell uses seven different energy sources to power homes – and an entire block. It's fuelled by natural gas and solar, and also captures heat generated onsite for heating and cooling needs.



Because the power cell produces much more energy than each house consumes, it sells excess power back to the grid. Insurance discounts of 40% further cut the costs of ownership.

Independence Heights is one of seven US markets where Houze residences are being constructed. By the end of 2014, the company is planning to establish itself in 50 markets. Construction is under way on as many as 80 homes.

But how energy-efficient are these really? The home energy rating system ranks a home's energy use, with lower numbers representing better efficiency. While a typical new home scores a Home Energy Rating of 100, a Houze home, by comparison, gets 44, which will fall to 0 when in use (because it will supply more energy than it consumes), Goswick says.

Lauran Spanjian, sustainability director for the city of Houston, teamed up with Houze through a public-private partnership. The Independence Heights development is part of a greater plan to position Houston as a pioneer in sustainability and environmental policy.

The city has already become the largest municipal purchaser of green energy in the US, with renewables making up approximately half of its energy mix. It also boasts the third-largest municipal electric-vehicle infrastructure network in the United States and ranks fourth among US cities in buildings that are certified by the Leadership in Energy and Environmental Design, including eight at the platinum level.

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Slough sewage plant turns human excrement into high-quality fertilizer

By John Vidal, environment editor, for *The Guardian*



Pellets produced from sewage at Thames Water's facility in Slough. The workers say euphemistically they are 'harvesting pearls'. Photograph: Stewart Turkington

Just a few yards from the choked M4 motorway, beyond the massive settling tanks and a steaming, 500-tonne mountain of black sewage sludge at Slough treatment works, a modern alchemy is taking place that could potentially keep the world in food for a few more years.

The plant is taking the tiny quantities of phosphorus contained in the poo of the Berkshire town's 140,000 people and turning it into high-quality fertiliser fit to grow organic garden vegetables.

At one end of the novel process in Europe's first "nutrient recovery reactor", the human waste is dark and "earthy" smelling. At the other end, bright white, odourless phosphorus-rich pellets drop into sacks. The sewage workers euphemistically say they are "harvesting pearls". Thames Water, which owns the facility, says it is making "Viagra for plants".



A cross-section of pipe from a Thames Water sewage works in which struvite, a nutrient compound containing phosphorous, has built up. If left unchecked, struvite blocks these pipes completely Photograph: Stewart Turkington/Thames Water

According to the water company, Slough's excreta has a "unique vintage", and contains more phosphorus than any other area in south-east England, possibly because of the quantity of meat eaten in the town or because it boasts several large food processing and pharmaceutical works. The company

expects to make £200,000 a year from the combination of selling 150 tonnes of its fertiliser to farmers and gardeners, and not having to spend as much money on chemicals to unblock pipes.

"We reckon using this technology Britain could save 20% of the 138,000 tonnes of phosphorus fertiliser that it imports a year," says Piers Clark, Thames Water's commercial director. "Phosphorus is a fast-depleting, non-renewable resource which we will run out of. Without it, all life on the planet will take a nosedive."

It is the key ingredient in fertiliser and essential for farming, says Peter Melchett, policy director of organic trade body the Soil Association. "Without fertilisation from phosphorus, wheat yields will fall by more than half. This

technology could offer a solution to securing global food supplies over the coming decades."

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NYC Converts All 250,000 Streetlights to LEDs

SustainableBusiness.com News

When many people think of New York City, beyond the crowds their image of the city is the lights.

Soon, the lit-up skyline will be much whiter because all 250,000 street lights are being switched to LEDs in the biggest retrofit project in the nation.

The switch-over is part of PlaNYC, the city's climate change mitigation plan. PlaNYC requires the city to cut emissions from government operations 30% by 2017.

Started in 2009 as a pilot, the retrofit is now rolling out across NYC with a completion date of 2017. LEDs already light key corridors, such as FDR Drive - the highway along its east side - and paths that wind through Central Park. They even adorn the city's bridges.

The \$76.5 million project is expected to save \$6 million a year in energy costs and \$8 million a year on maintenance costs (LEDs last for up to 20 years).

The Empire State Building's lights are also LEDs:

It is the first project to receive funding from the city's ACE

Program (Accelerated Conservation and Efficiency Initiative). The \$100 million competitive program launched this fall to expedite government projects that cut greenhouse gas emissions. It funds programs that can be quickly implemented on efficiency and clean heating. It awarded \$10 million toward the lighting retrofit.

"Using LEDs for street lighting is more than just a bright idea, it's a necessity for sustainable cities to operate more efficiently while also delivering clearer, better quality light for New Yorkers," says Transportation Commissioner Sadik-Khan.

NYC was the first large American city to use LED traffic signals, converting lights at all 12,700 intersections - they now use 81% less energy. Even the iconic ball that drops at New Year's is filled with LEDs.

Boston and Los Angeles both recently finished their own city-wide lighting retrofits.

It's estimated that the 35 million streetlights in the US consume about 1% of all electricity. If every city followed their lead, that would eliminate the need for 2.5 coal plants a year, notes former President Clinton.

Although clear, bright LEDs make city streets safer, not everyone likes their look. They are too bright they say, reminding them of floodlights. While there are soft light versions for use in homes, we wonder why they can't be applied to street lights.

Last year, the Department of Energy conducted a lifecycle analysis of LEDs and found while they have significantly lower environmental impact than incandescents, they only have a slight edge over compact fluorescents.

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Warsaw climate talks set 2015 target for plans to curb emissions

By Fiona Harvey, for theguardian.com



UN climate delegates during the closing session of the Warsaw talks.
Photograph: Czarek Sokolowski/AP

Governments around the world have just over a year in which to set out their targets on curbing greenhouse gas emissions from 2020, after marathon overnight climate change talks in Warsaw produced a partial deal.

Under the agreement, settled in the early hours of Sunday morning after more than 36 hours of non-stop negotiations, countries have until the first quarter of 2015 to publish their plans. This process is seen as essential to achieving a new global deal on emissions at a crunch conference in Paris in late 2015, for which the fortnight-long Warsaw conference was supposed to lay the groundwork.

"Warsaw has set a pathway for governments to work on a draft text of a new universal climate agreement, an essential step to reach a final agreement in Paris, in 2015," said Marcin Korolec, the Polish host of the conference, who was demoted from environment minister to climate envoy during the talks.

The talks were characterised by discord and acrimony, and by the emergence of a new and highly vocal negotiating bloc among developing countries that forced through the watering down of key aspects of the deal.

Christiana Figueres, the UN's leading climate official, said: "We have seen essential progress. But let us again be clear that we are witnessing ever more frequent, extreme weather events, and the poor and vulnerable are already paying the price. Now governments, and especially developed nations, must go back to do their homework so they can put their plans on the table ahead of the Paris conference."

The conference began with an impassioned plea by the Philippines representative, Yeb Sano, for a strong agreement after the devastation of typhoon Haiyan. Sano remained fasting throughout the talks, and afterwards expressed frustration that there had not been a "meaningful" outcome.

The emissions goals, to come into force from 2020, will be set at a national level, but after they are published there will be a chance for other countries to scrutinise them and assess whether they are fair and sufficiently ambitious. At the insistence of a small group of developing countries, they will take the form of "contributions" rather than the stronger "commitments" that most other countries wanted.

These were the self-styled "like-minded developing countries", a group that comprises several oil-rich nations, including Venezuela, Saudi Arabia, Bolivia and Malaysia. Several have large coal deposits and are heavily dependent on fossil fuels, such as China and India, and some countries with strong links to some of the others, including Cuba, Nicaragua, Ecuador and Thailand.

The "like-minded developing countries" group takes the view that the strict separation of nations into "developed" and "developing", which was set at the first international climate talks in 1992, and enshrined in the 1997 Kyoto protocol – in which developed countries were obliged to cut emissions but developing countries had no obligations – must remain as the bedrock of any future agreement. They argue that the "historical responsibilities" for climate change lie with the first nations to industrialise.

That view is firmly rejected by the US and the EU, both of which have agreed to take a lead in cutting emissions, but have also repeatedly pointed out that the tables have turned on historic responsibilities. Emissions from rapidly emerging economies such as China and India are growing so fast that by 2020, the date when any new agreement will come into force, the cumulative emissions from developing countries will overtake those of rich nations.

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Thin-Film Solar Efficiency Breaks Through Barrier

SustainableBusiness.com News

German researchers have broken the record for thin-film PV efficiency, achieving 20.8%.

This milestone is especially important because it is the first time thin-film has exceeded the efficiency of standard multicrystalline silicon solar, which currently reaches 20.4% for peak performance.

One of the reasons silicon-based PV still dominates the market is its greater ability to convert sunlight into electricity.

When thin-film PV first became viable, many thought it would overtake silicon-based technologies, but lower efficiency has held it back. Thin-film, popularized mostly by First Solar, has many advantages. Using a "thin film" instead of heavy glass panels requires less material and energy to manufacture - it can be printed on sheets - and the lack of silicon also cuts costs.



"Our new record shows that CIGS thin-film technology still has untapped technological and economic potential," says Michael Powalla, a professor who heads the photovoltaics division at the Centre for Solar Energy and Hydrogen Research.

Fraunhofer Institute for Solar Energy Systems duplicated the research and confirmed it.

"It may take a little time for the higher efficiency to be reflected in production," says Powalla, "but 16-18% in commercial modules is possible over the next few years." Even that would be a big boost because CIGS solar panels mostly attain efficiencies of 14-15% - a module always has lower efficiency than an individual solar cell.

First Solar, which has broken many records on thin-film efficiency, currently gets 16.1%.

[<Source>](#)

Caesars CEO: How a sustainability scorecard is creating value

By Gary Loveman

What is the most challenging part of integrating sustainability into a company's DNA? As sustainability professionals know, it takes more than a company's willingness to address environmental and social issues across its value chain. True integration takes champions to make it happen -- yet champions within corporations sometimes encounter roadblocks to executing a sustainability vision, and in some cases those initiatives hit a plateau.



At Caesars Entertainment, we view sustainability as a core part of our business strategy. To that end, we have developed a tool that is making sustainability stick at our company, from the top down and bottom up.



Caesars workers busy recycling
(Credit: Caesars Entertainment)

A scorecard strategy

Our CodeGreen Scorecard, first launched in 2010 and updated in 2012, has become an internal sustainability roadmap that has led to significant efficiency improvements across our global properties, as well as become a vehicle for employee engagement and community involvement.

The scorecard, part of our greater CodeGreen sustainability strategy, measures Caesars Entertainment's organizational, environmental and stakeholder engagement performance to help our organization meet ambitious sustainability goals through 2025. Energy, water, waste, customer impact and employee engagement data are measured

both at the corporate and individual property levels. At the local level, the scorecard empowers employees to drive sustainability initiatives in our 52 locations around the globe.

This is what I like to call a virtuous cycle: the synergy between people's individual actions and company-driven improvements. With a dose of friendly competitive spirit, our scorecard also has prompted individual property managers to bolster their green initiatives at their sites and become top performers on the annual CodeGreen Scorecard.

Top image by Evlakhov Valeriy via Shutterstock

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Who Is Driving Solar? It's the Middle Class

SustainableBusiness.com News

Rooftop solar has been growing so rapidly in the US over the past few years that the Center of American Progress (CAP) asked, "Who is buying all that solar?"

While wealthy people helped by being early adopters, the middle class is driving widespread installation, concludes CAP.

In fact, rooftop solar installations are overwhelmingly located in middle-class neighborhoods where median incomes range from \$40,000 to \$90,000.



They analyzed data from Arizona, California, and New Jersey from 2011-2012 - states that lead on solar deployment. It turns out that in Arizona and California, solar is growing the fastest in neighborhoods where median incomes are \$40,000 to \$50,000, and even lower in New Jersey - \$30,000 to \$40,000.

This counters what many utilities say these

days - that low and middle income customers that can't afford solar are subsidizing wealthy people who can. Those who sell electricity back to the grid through net-metering should pay a special, monthly charge or else everyone else pays for a utility's grid services, except them.

In at least six states - Arizona, California, Colorado, Idaho, Louisiana and Vermont - utilities are trying to scale back net-metering policies that pay homeowners and businesses for the energy they send to the grid.

"Net metering operates much like a regressive tax, where the customers who cannot afford to install solar generation pay more to subsidize those customers who are able to afford an investment in solar," commented Ronald Gerwatowski, senior vice president of National Grid, regarding Massachusetts' proposal to raise the solar carve-out in its Renewable Portfolio Standard.

"The oft-repeated utility-industry narrative is not only being used as a vehicle for solar policy scrutiny - it also serves as a distraction from the fact that solar technology provides the same benefits to the grid regardless of the homeowner's income level," says CAP.

"These benefits include avoided fuel costs, reduced transmission and distribution costs, emissions-free energy production, and generation capacity that can offset use during peak energy-consumption times during the day in certain regions. Some utilities have quantified those benefits and found that the value that solar technology brings to the grid in their service territory is actually higher than the retail electricity rate."

Read, Solar Power to the People: The Rise of Rooftop Solar Among the Middle Class:

Website: www.americanprogress.org/issues/green/report/2013/10/21/76013/solar-power-to-the-people-the-rise-of-rooftop-solar-among-the-middle-class/

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Can robots make solar power cheaper?

By Martin LaMonica



SunPower CEO Tom Werner has found a new friend in his quest to lower the cost of solar: a panel-cleaning robot.

The solar panel maker and project developer this week acquired a company called Greenbotics that has developed robots to wash rows of solar panels. Workers who normally use squeezes and buckets of water will

be equipped with a robot that drives across the surface of solar panels, wiping dirt and dust. When the robot reaches the end of the row, a worker picks it up and places it on the next row.

The robot, which looks like a briefcase on tank-like treads, allows a crew to wash panels three times faster than today, SunPower found in tests. That's a significant improvement for large-scale solar farms, particularly in dusty desert areas. With a cheaper way to clean panels, plant operators will clean more often and get more energy from their solar farm, says Werner. "By having more efficient cleaning, we can increase energy output by 15 percent," he says. "So having the ability to clean more frequently can make a huge difference."

High-volume manufacturing in China has slashed solar panel prices the last few years and hundreds of engineers are trying to boost the efficiency of solar cells. But technical improvements for

cells tend to be incremental. By

investing in robotics, SunPower is attacking the so-called balance of system costs, or the money spent outside actual hardware. In a big solar farm, actual assembly of the plant is more than half of the cost, Werner says.

The battery-powered robot also uses substantially less water, consuming a half of a cup of water per panel, or about 90 percent less than traditional methods. This is particularly significant in water-poor desert areas with solar potential.

An industry fixated on costs, the solar business is warming to the potential for automation that robots bring. German company Serbot also

makes a panel-cleaning robotic device. And

SunPower intends to expand the Greenbotics team to extend the existing product line so it can clean different types of panels and to develop robots for installation, Werners says. "Almost any ground-mounted solar application over time will be cleaned this way," Werner predicts.

Other companies are already doing robot-assisted solar panel installation at large-scale farms. Startup AlionEnergy has designed a system that lays down



A solar robot from Alion (Credit: Alion)



A solar robot from Qbotix (Credit: Qbotix)

a concrete base using convention construction machines and then, with a robot called Rover, installs solar panels that attach to the base structure with hooks and adhesives rather than nuts and bolts. It also has a second machine, called Spot that drives over the panels to clean them.

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Guide helps shift palm oil production to degraded land

By Anne Rosenbarger, Ariana Alisjahbana and James Anderson

Indonesia has the world's third-largest rainforest, which is a haven for biodiversity and an economic lifeline for many rural communities. However, Indonesian forests are in rapid decline and the country regularly tops deforestation hotspots lists.

The key to protecting Indonesia's forests remains reforming its massive forestry and agriculture sectors. By giving these industries the tools to produce commodities sustainably, such as palm oil and wood pulp, Indonesia can increase agricultural production without contributing to deforestation.



One of the most promising developments on this front is the use of degraded land for new palm oil and other agricultural plantations. This practice involves siting plantations on already-deforested or degraded land, as opposed to clearing valuable forest. Producers, however, face a complex web of regulations if they wish to shift their operations from forested to degraded land.

WRI has produced a new issue brief to address this challenge, "How to Change Legal Land Use Classifications to Support More Sustainable Palm Oil in Indonesia." This publication provides a "how-to guide" for companies to shift their palm oil operations from forested to degraded land, as well as recommendations on how Indonesian policymakers can make this process easier.

The complex system of legal land classifications

Indonesia's land classification system presents serious challenges for companies, project developers and communities seeking to avoid forest loss and social conflicts. As of 2011, approximately 70 percent of Indonesia's total land area was classified as "Forest Estate" (Kawasan Hutan) by the Ministry of Forestry. Forest Estate land may be legally designated for many uses, including biodiversity conservation, community benefit, selective logging or even non-forest uses, such as plantations. The remaining 30 percent of the country's land is classified as non-Forest Estate land (Areal Penggunaan Lain) and may be developed for agriculture, urban settlement or other purposes.

However, many of these classifications do not reflect the reality of land cover on the ground. For example, many Forest Estate lands are settled or degraded, while many non-Forest Estate lands host rich primary forests. As a result, much of the land that is legally available for palm oil and other development is unsuitable due to the presence of high-conservation value forests, peat or conflict with communities. And unfortunately, much of the already-degraded, low-carbon land that would be suitable for sustainable palm oil is legally off-limits to development.

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How Ontario is getting off coal

By Francesca Rheannon

Canada is often pilloried as a climate criminal these days, due in part to the environmental catastrophe unfolding at the Alberta tar sands mining operations, which are adding some of the most toxic forms of fossil fuel energy to the planet's atmosphere. The devastation from the operations is even visible from space.

But there is another side to Canada's energy story, a story about renewable



power that shows how government, business and local communities can work together to boost jobs, grow the economy and slash carbon emissions. It's happening on the provincial level, and Ontario is a showcase for the effort.

Phasing out coal-fired power is a big slice of Ontario's plan to cut carbon emissions. The province has committed to closing all coal-fired power plants by 2014, making it the first jurisdiction in North America to make that pledge.

It's no mean effort. At an estimated cost of \$4.4 billion (in U.S. dollars), getting off coal is shaping up to be "one of the largest single greenhouse gas reduction measures in North America," according to the Ontario Ministry of the Environment, and the effort is expected to reduce the province's carbon footprint from electricity by 75 percent. In 2011, coal supplied 13 percent of Ontario's installed generation capacity.

Although Canada has abundant wind resources, it already depends on hydroelectric power for 27 percent of its energy. The major challenge of renewables such as wind, solar and even hydro (during droughts) remains demand response, the ability to have the right amount of power whenever and wherever is needed.

Until the storage and transmission issues can be solved well enough to bring wind and solar to scale, cutting carbon emissions will depend on efficiency and on finding lower-carbon ways to generate power using existing infrastructure. Ontario's publicly owned power company, Ontario Power Generation (OPG), decided that biomass in the form of wood-waste pellets could supply a solution, providing "fully dispatchable" renewable energy by converting coal plants to the new fuel.

But could it be done sustainably?

Not all biomass is equal from a sustainability standpoint. Construction wood waste, for example, releases toxins into the atmosphere. Clearcutting forests and replacing them with industrial tree plantations endangers biodiversity. Stripping forests of all or most rotting material impoverishes the soil, preventing the healthy re-growth necessary to allow the forest to continue as a robust carbon sink.

OPG has pledged that all its biomass fuel sources must meet the United Nations Framework Convention on Climate Change definition of renewable. Once the conversion is completed, it will use sawmill waste, logging residue, low-grade biomass and forest fire salvage wood.

The company began a coal-to-biomass conversion project at the Atikokan Generating Station in Northwestern Ontario. Before September 2012, the station produced approximately 200 MW of electricity, using low-sulphur lignite coal from western Canada. On Sept. 11, 2012, Atikokan stopped using coal as fuel, and the unit was shut down so the biomass conversion could get underway.

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Can mushrooms replace plastic?

A company in New York uses mushrooms to turn agricultural biowaste into packaging. Will its market mushroom, too?

By Marc Gunther, *theguardian.com*

Mushrooms, as any cook knows, are versatile: they enhance soups, stews, pasta, salads and omelettes, and they can be stuffed, baked, fried or sautéed.

As it turns out, they are equally versatile outside of the food world. They can produce packaging, home insulation, fiberboard for furniture, even a surfboard.

So says Eben Bayer, the 28-year-old CEO and co-founder of Ecovative, a small company that's developing an array of environmentally friendly materials that perform like



plastics but are made by mushrooms – specifically, by their webs of thread-like roots, known as mycelium, which consume crop waste. These materials can be grown and recycled, as opposed to being drilled, pumped, refined and discarded.

'Mushroom packaging' is the company's first commercial offering. 'We're leveraging the power of biology,' says the company's CEO. Photograph: Ecovative

made by mushrooms – specifically, by their webs of thread-like roots, known as mycelium, which consume crop waste. These materials can be grown and recycled, as opposed to being drilled, pumped, refined and discarded.

"We're able to compete with an entrenched billion-dollar plastic industry because we're not extracting things," Bayer said last week, at the fall conference of the Social Venture Network (SVN) in Baltimore. "We're leveraging the power of biology."

Founded in 2007 in the aptly named village of Green Island, New York, near Albany, Ecovative is a small company with big ambitions. It already has generated a lot of buzz: It won the Dutch Postcode Lottery Green Challenge, a global \$750,000 sustainable business prize. The World Economic Forum named the company a technology pioneer in 2011. Bayer even delivered a TED talk. And Ecovative won grants by the US EPA, the National Science Foundation and the US Department of Agriculture.

All of which is nice, but not enough to make Ecovative a real business. More important, in that regard, is an agreement that Ecovative signed last year to license its packaging technology to Sealed Air, a \$7.6bn packaging and materials company that makes, among other things, Bubble Wrap. Sealed Air will market and sell Ecovative's Mushroom Packaging, and it has adapted a factory in Iowa to produce it, using corn stalks as feedstock. Customers include Dell, Steelcase and Crate & Barrel.

After Bayer's talk at the SVN event, we sat down to discuss the company. A lanky, easy-going guy, Bayer grew up on a maple syrup farm in Vermont, which is where he first noticed the magical power of mushroom roots to hold things together. At Rensselaer Polytechnic Institute, he studied mechanical engineering and met Gavin McIntyre, Ecovative's co-founder. Rensselaer has been an important supporter of the company, as well as an investor. Bayer, who loves the outdoors, lives with his wife in a cabin off the grid and not far from the company's headquarters.

Ecovative's technology sounds simple, but producing usable materials from mushrooms has taken an enormous amount of trial and error. "For the first two years, we suffered a tremendous number of failures," Bayer said. Essentially, Ecovative takes live mycelium and feeds them agricultural waste. Under the right conditions, the mycelium turns the waste into a material with similar properties as Styrofoam, the hard plastic foam invented by Dow in the 1930s, in just a few days. Like Styrofoam, Mushroom Packaging can be molded into any shape.

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Government targets to roll out subsidies for electric cars by April 2014

The ministry of heavy industries is targeting to roll out subsidies for electric vehicles - under the National Electric Mobility Mission Plan by April of 2014.

The policy unveiled by the Prime Minister Manmohan Singh earlier this year was stuck due to the slowdown in the economy. However, the senior government official on Thursday said, the heavy industry ministry is planning to get all the cabinet approvals before the 1st of April so that the incentives start flowing to electric vehicle makers from April 1.

Speaking at the SIAM's 4th Diesel conference in Mumbai on Thursday Ambuj Sharma, additional secretary, ministry of heavy industries said the main impediment in rolling out the electric vehicle policy has been the slowing economy.

"The government is hard pressed for cash. The level of incentives which we are thinking is to the tune of Rs 12,000 crore over the next seven years, till 2020. On an average about Rs 2,000 crore will be provided as incentive, which is a big sum. We are trying to tie-up with the finance ministry, as to how best we can tie-up on incentives. The first two years, it will be low, we have to manage with the budgetary provision, but in the years to come, once the Indian economy will grow faster and the incentive will be higher, government will be much more liberal in offering incentive," added Sharma.

Post the Booz Allen study commissioned by the government to study the future potential for electric vehicles, two years back, the ministry had over 100 interactions with the automotive industry to devise a suitable incentive policy to create a thriving electric vehicle market in India. Till 2020, the government foresees a penetration of 1.5 million four wheelers, 4.5 million two wheelers, which will have a share of about 17% of the total sales.

Sharma says if the electric vehicle market takes off, Rs 40,000 crore worth of fuel will be saved. The government is looking at the total cost of ownership model to offer the incentive to the vehicle maker. For instance, if the cost of internal combustion engine car is Rs 5 lakh and that of electric vehicle is Rs 6.5 lakh, the government intends to offer 35% of the differential cost. In case of two wheelers it could be higher.

On the possible interest and investment from the industry, Sharma said Mahindra Reva has already set up a capacity of 40,000 units per year and similarly even Tata Motors BSE 0.05 % and Maruti Suzuki BSE 1.14 % are working on both hybrid and pure electric models for India. So they are likely to bring in electric vehicles in the next two to three years.

"Mahindra is already working on a four seater and a seven seater electric vehicle. Kinetic is working on a three wheeler. TVS and Bajaj Auto BSE 1.23 % are working on hybrid motorcycles, which are at a homologation stage. 5-6 leading domestic manufacturers are already in the fray and we hope that foreign OEMs will also bring in their smaller cars at least," added Sharma.

[<Source>](#)

Large business opportunity for particulate emission technology to become a norm: Kamyotra –

"Leveraging automation for particulate emission trading", J S Kamyotra, secretary, Central Pollution Control Board, said India is trying out with an innovative market mechanism to deal with this-Particulate Emission Trading.

"It is being tried out as a pilot project in three states-Gujarat, Tamil Nadu and Maharashtra- where the 15 critically polluted areas in the country are located. About 1000 industries have been identified in these states for monitoring which attracts huge business opportunity for technology

and equipment for particulate emission abatement," said Kamyotra.

Kamyotra said this involves two aspects-first, measuring of emissions and the formulation of standards for emission for every industry and, second, ensuring that the industry complies with the standards.

For measuring and monitoring emission, especially particulate emission, Kamyotra laid particular emphasis on the need for innovation in developing technology and instruments in India suitable for Indian conditions. "The instruments manufactured by developed countries were not ideally suited for Indian ambient conditions and are costly," he said.

K Nandakumar, chairman, CII Instrumentation and Automation Division in his welcome address, referring to investment in emission technology and equipment, outlined the issue of finance for investment. The challenge is to create awareness and put this awareness into practice, he said. He noted that the ministry of environment and forests, the Central Pollution Control Board and the State Pollution Control Boards have put out a number of regulations and these need to be taken into account in setting up and operating industry.

The head of corporate support centre, SICK, Germany, Frank Hehl said that there are pollutants which is a worldwide concern, especially in industrialised countries. "Industries provide livelihood and development but they also harm the environment," he said.

He said there are "pollutants such as mercury, dioxins that create health problems over a period and have long term effects, but it is difficult in each case to find a direct link between these pollutants and their effect".

Laying stress on the need for controlling emissions, he said emission trading is one such mechanism which is market based. At present, it is only for carbon emissions and covers Green House Gases. "The particulate emission trading," he said, "holds a new business opportunity for your country."

[<Source>](#)

Demand for India Renewable Credits Doubles in November

Demand for renewable-energy credits in India doubled in November as regulators enforce clean-power targets for companies and state-run utilities.

There were 308,928 bids to buy wind, hydro and biomass credits, after 150,640 the previous month, according to data from trader REConnect Energy Solutions Pvt.

The government requires electricity distributors and large industrial companies such as Coal India Ltd. (COAL) and Tata Power Co. (TPWR) to get as much as 10 percent of their energy from renewables. Those unable to source enough locally must comply with the regulation by purchasing credits from clean-power plants.

Demand has surged more than sevenfold since a low in August as regulators in Punjab, Uttarakhand, Maharashtra, Chhattisgarh and Goa have begun to crack down on companies flouting rules. On Oct. 25, the electricity watchdog for Goa and the seven Indian union territories warned local state-run distributors, which have failed to meet their targets for the past three years, to comply by April or face penalties, according to REConnect.

In this month's session, wind, hydropower and biomass credits traded at their floor price of 1,500 rupees (\$24). Solar credits, which trade separately, also cleared at their minimum of 9,300 rupees. Each credit represents 1 megawatt-hour of electricity fed into the grid.

[<Source>](#)

4th International Conference *on* **Future Environment and Energy-ICFEE 2014** **January 4-5, 2014** **Melbourne, AUSTRALIA**

4th International Conference on Future Environment and Energy-ICFEE 2014 will be held during January 4-5, 2014 in Melbourne, Australia. ICFEE 2014 is to bring together innovative academics and industrial experts in the field of Future Environment and Energy to a common forum.

The primary goal of the conference is to promote research and developmental activities in Future Environment and Energy. Another goal is to promote scientific information interchange between researchers, developers, engineers, students, and practitioners working in Australia and abroad.

The conference will bring together leading researchers, engineers and scientists in the domain of interest from around the world. Broadly themes of the conference are: Energy & Environment, Renewable Energy, Advanced Energy Technologies and Fuels & Combustion.

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International Conference *on* **Renewable Energy and Sustainable Development [ICRES-2014]** **9-10 January, 2014** **Pune, India**

The **International Conference on Renewable Energy and Sustainable Development (ICRES-2014)** will be held at KJ Somaiya Institute of Engineering and Research, Pune on 9th and 10th January, 2014. The conference aims to bring together leading, interdisciplinary academicians, engineers and scientists around the world to exchange ideas of new advances and research in order to make world more energetic and sustainable. Topics are divided into two broad themes viz. Renewable Energy and Sustainable Development. The topics of interest under renewable energy include all types of renewable energies, their applications, storage and innovations. And under sustainable development topics like green infrastructure, waste management, green manufacturing, energy efficient systems, sustainable energy & environment are included.

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Forthcoming Events

2014 1st International Conference on Non Conventional Energy (ICONCE 2014)

16th to 17th January 2014

Kalyani, West Bengal

1st International Conference on Non Conventional Energy (ICONCE 2014) in field of Renewable Energy Source organized by JIS College of Engineering sponsored by Technical Education Quality Improvement Program (TEQIP), New Delhi, India with technical co-sponsored by IEEE Kolkata Section and IEEE Power and Energy Society Kolkata Chapter. The ICONCE'14 will be held in JIS College of Engineering, Kalyani, during January 16-17, 2014.

The primary objective of ICONCE 2014 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 information in relation to latest developments and development activities in Non Conventional Energy, as well as its related and enabling technologies regarding application of Renewable Energy Sources.

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. leading researchers, engineers and scientists in the domain of interest from around the world. The ICONCE 2014 covers main 8 major categories: Solar Energy, Hydro Energy, Bio Energy, Hydrogen Energy, Energy from Depth of Earth/Geothermal, Wind Energy, Energy & Architecture and Energy Conservation Measure.

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Harnessing Natural Resources for Sustainable Development

29th to 31st January 2014

Guwahati, Assam

The Cotton College of Guwahati is organizing a conference titled "**Harnessing Natural Resources for Sustainable Development**" during 29th to 31st January, 2014. The aim of the conference is to bring together researchers working in the area of preservation, protecting and harnessing natural resources for sustainable development and pollution free environment and to discuss the new trends and technologies in this area.

The sub themes of the conference include Managing Natural Resources in the changing World, Energy Conservation and Alternative Energy Sources, Global Climate change-Impact and Management Green Chemistry and sustainable development.

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National Conference on "Environment: Pollution & Protection"

30th Jan. to 1st Feb. 2014

Durgapur, WB

National Conference on Environment: Pollution & Protection is being organized by National Institute of Technology, Durgapur from 30th January to 1st February 2014. The conference is expected to bring together the scientists, engineers, industry personnel, students and professionals in the field of environmental science and technology to discuss emerging environmental issues in India. The conference aims to highlight scenario in industries on waste water and solid waste treatment and the research being done to solve the existing problems. It also aims to discuss the problem of increasing air pollution and find remedy in controlling the situation. The conference would deliberate on the emerging issues of environment and health and biomedical waste management.

The topics to be covered are of great importance as they are related to problems that are being faced all over the world i.e. air pollution, waste management, environmental management, ground water pollution, hazardous and biomedical waste management etc.

[<ReadMore>](#)

The Economic Times, Delhi dated October 26, 2013

CLIMATE CHANGE

Businesses must Innovate for Sustainability of our Planet



R K Pachauri

Today, our costing and pricing systems ignore the negative externalities that actions by human society impose on the environment and the state of our natural resources. We do not find the right market-based logic to take action that should be based on an inclusion of externalities, both positive and negative, that our actions impose on the environment and natural resources.

Any change would only come from knowledge and an understanding of how our actions are actually affecting the climate of this planet and its implications for society. It is only then that innovative policies and technological change will be devised.

The Intergovernmental Panel on Climate Change (IPCC), which I have the privilege of chairing, has brought out four assessment reports and several special reports. Recently, the IPCC's Fifth Assessment Report (AR5) has been published.

The AR5 deals with the physical science basis of climate change. It provides an assessment of the natu-

re and extent of climate change that has taken place so far and future projections. If human society is to deal with the challenge, then an understanding of the science behind climate change is a prerequisite.

Fortunately, knowledge in this area is spreading rapidly, and changes in attitudes around the world. A colleague of mine in Yale University carries out path-breaking surveys of public opinion on climate change, and the most recent one relates to the state of Ohio in the US.

Ohio is an industrial area, and, therefore, what the public believes would probably coincide with what corporate organisations located in Ohio would also believe. Significantly, 70% of the people in Ohio believe global warming is happening while only 16% believe it is not.

Half of the people believe that if

global warming is happening, it is mostly due to human activities, and among those who believe global warming is happening, 90% believe this has an influence on the severity of heat waves, 88% linked it with droughts and 80% with flooding of rivers or lakes in Ohio.

If such a set of perceptions was global, perhaps we would see innovation to deal with climate change worldwide.

India is particularly vulnerable to the impacts of climate change, which will not leave corporate organisations untouched.

Climate change would impact the operations of businesses and affect the lives of those associated with business activities. Two sets of extreme events have been found by the IPCC to be increasing in frequency and intensity, and these are ex-

treme precipitation events as well as heat waves.

The problem of sea-level rise is particularly relevant to business facilities and infrastructure located in coastal areas, because not only will storm surges and coastal flooding be relevant to some locations, but the intrusion of saline water due to sea-level rise would affect the quality of groundwater further onshore than has been the case so far.

The other aspect to consider is the range of benefits from mitigating emission of greenhouse gases through higher efficiency of energy use, greater use of renewable energy technologies and even lifestyle changes. All of these carry substantial associated benefits such as higher energy security, low levels of air pollution and, therefore, health benefits resulting from some mitigation activities.

It is absolutely relevant for the business sector in India to develop an understanding of climate change and the opportunities and risks associated with it, so that business decision-making can take full account of these for the benefit of any corporate organisation itself and that of society at large. Such knowledge will then inevitably foster innovation quite rapidly.

The writer is director general, The Energy and Resources Institute



The Times of India, Delhi dated October 26, 2013

Pollution up, smog and haze set in early

TIMES NEWS NETWORK

New Delhi: Delhi witnessed its first major spell of fog on Friday morning with visibility falling to 500-600m in some parts of the city. Between 7.30am and 9.30am, visibility at the IGI Airport was less than 700m, while the visibility at the runway ranged between 800m and

Between 7.30am and 9.30am, visibility at the IGI Airport was less than 700m, while the visibility at the runway ranged between 800m and 1,100m

1,100m. No disruptions were reported during this period.

According to Dr R K Jenamani, director in charge, IGI Met, the bigger concern was smog, which lasted through the day and kept visibility between 1,200m and 1,500m. "It is usual for the city to experience low visibility conditions at this time, but we are worried about the smog and haze levels. We are constantly moni-

toring them. Levels of particulate matter, a pollutant monitored by Delhi Pollution Control Committee, have been much higher than normal in the past few days," he said.

The low visibility conditions are a result of heavy rain in Orissa and Andhra Pradesh. Met officials said that a low pressure area exists over Telangana and adjoining areas of Rayalaseema. Due to this, easterly winds carrying high levels of moisture are blowing over northwest India. With temperatures having fallen, this creates an ideal situation for formation of smog or light fog.

Delhi's maximum temperature on Friday was 30 degrees celsius, two degrees below normal while the minimum was recorded at 17.5 degrees celsius. Humidity ranged between 46% and 92%. "The low visibility conditions are likely to persist for at least another couple of days as the low pressure area will remain almost stationary till Saturday. It may then move towards the northeast. Whether or not visibility worsens will depend on the nature of this low pressure area," said an official.

The Times of India, Delhi dated October 27, 2013

OKHLA BIRD SANCTUARY TURNS DRY, GOVT CAN'T ANSWER WHY

Photos: Sanjeev Rastogi



Covering an area of **4 sq km**, the Okhla bird sanctuary is among 15 bird sanctuaries in UP. Was notified in 1990



TIMES NEWS NETWORK

New Delhi: The Okhla Bird Sanctuary now looks like a desert with a cracked water bed and few birds of prey flying around. The Uttar Pradesh government's decision to release all water from the Okhla barrage has not just driven away birds but it may also be impacting other wetland flora and fauna. The UP irrigation department claims water has been released to carry out maintenance. The forest department says it was not consulted before releasing the water.

No forest ranger or guard was seen at the sanctuary on Friday and the sanctuary office remained closed. Birders, who visit the sanctuary regularly, say it is a bad idea to release water in October when migratory birds start arriving. "Earlier maintenance work was carried out between April and May. Why release water at a time when birds from Central Asia and Europe come to the sanctuary? A lot of local birds must also have flown away," says Anand Arya, photographer and birder. He adds that rampant encroachment around the sanctuary has degraded the eco-system. "The Sultanpur Bird Sanctuary in Haryana managed to notify its eco-sensitive zone (ESZ) unlike the UP government. It has taken them 10 years to decide on ESZ," he says.

The National Green Tribunal recently ordered all illegal construction work within a 10 km radius of the sanctuary to be stopped. Real estate projects had started construction activity within the sanctuary's potential eco-sensitive zone, in violation of the norms. The UP government is now considering an ESZ within 1 km of the sanctuary.

The UP forest department, however, was not consulted before releasing water, which will leave the sanctuary dry for almost a month. "The annual maintenance is being carried out. Water is always cleaned after monsoon and its level will be restored once the work is finished hopefully by next week," says Ashok Kumar, divisional forest officer.

The executive engineer of the UP irrigation department, R N S Yadav, said he doesn't know why the Okhla Bird Sanctuary has gone dry. "It is not under my jurisdiction," he says.



ALL'S NOT WELL HERE

- About 10 species of threatened birds—including critically endangered and nearly threatened ones—have been found here
- Over 320 bird species have been recorded, out of which 20 are common resident water bird species, 44 common resident woodland species and 43 migratory birds
- UP govt has diverted all water from Okhla barrage for maintenance work, leaving the sanctuary dry
- It has not only driven away birds but is likely to affect other wetland flora and fauna



THIS LOOKS LIKE A DESERT: Birds have started to abandon the sanctuary as it has dried up. Forest department says it was not consulted before irrigation department released all water from here

*The Times of India, Delhi dated
October 29, 2013*

Solar-powered aircraft on a global clean energy mission

Vishwa Mohan | TNN

New Delhi: The Solar Impulse — a revolutionary solar-powered airplane that had completed its first cross-country journey in the US in July — will make New Delhi and Varanasi its landing and departing destinations in 2015 as part of its round-the-world mission.

The Swiss-made airplane, which had completed its US mission without using a drop of fossil fuel on board, aims to demonstrate the capabilities of clean technology and renewable energy.

The move comes at a time when governments across the world are looking for alternatives to fossil fuel to not only fight the climate change menace by drastically cutting greenhouse gas emissions but also to pull themselves out of the vicious trap of oil economy.

Gregory Blatt, head of communication of the project, told TOI that the Solar Im-



GOING GREEN: The 72-metre-long wing of Swiss sun-powered aircraft Solar Impulse HB-SIB is made of carbon fibre

pulse is a kind of tool to tell the world about power and potential of clean energy.

Blatt said if a plane could fly for such a long hour without using a drop of fossil fuel, then why can't a car run on solar power for 50 or more miles at one go?

"Solar Impulse is not designed to carry passengers, but to convey a message. If we can do it in air, we can do it in our daily life using clean technology," he said, explaining

how this scientific marvel serves as "an ambassador for renewable energy".

The around-the-world mission flights will take place from beginning of March, 2014, to end of summer, 2015. Landing and departing destinations are being identified/finalized in Europe, West Asia and China, depending on technical and operational considerations. In India, New Delhi and Varanasi have,

however, been finalized for the mission.

Crossing the Pacific is expected to be the most difficult phase of the mission as pilot will have to fly five days non-stop during this leg of the trip. Solar Impulse — having wingspan of a 747 aircraft, weight of a car and power of a scooter — is constructed in such a way that its thousands of solar panels across its wings can harness power from the sun during the day and its lithium-polymer batteries can store that energy for overnight trips.

Bertrand Piccard and Andre Borschberg, co-founders and pilots of the Solar Impulse, will fly the airplane in different legs during around-the-world mission.

Since each pilot will have to fly for four-five days during circumnavigation, both of them will have to be trained in such a way that they can endure the arduous journey.

*Deccan Chronicle, Hyderabad
dated October 31, 2013*

Smoke from pyres melting glaciers

London, Oct. 30: Holy smoke arising from Hindu funeral pyres, Muslim cemeteries and Buddhist temples are responsible for almost a quarter of the greenhouse gases blamed for global warming on the Indian subcontinent and the melting of the Himalayan glaciers, a new study has claimed.

Researchers have long suspected that the rituals in India, Nepal and South Asia may be a factor in the level of brown carbon and soot that pollutes the air in the region, but until now little work has been done to quantify the size of the problem.

According to researchers from Nevada's Desert Research Institute and the Pandit Ravi Shankar Shukla University in Chhattisgarh, the impact is "huge" — 23 per cent of particles from human burnt fossil fuels in the atmosphere and a major source of carcinogenic volatile organic compounds, a report in the *Telegraph* said.

Between 2011 and 2012, the researchers measured emissions from marriage ceremonies, funeral cremations, incense sticks in



temples and graveyards, and found mango bark, cow dung, camphor, leaves, vermillion, and cow urine being burned.

They identified 14 "deadly" volatile organic compounds, including formaldehyde, benzene, styrene and butadiene, they told *Nature* magazine.

They discovered that funeral pyres emitted large amounts of 'brown carbon aerosol' gases, regarded as the second largest contributor to global warming, which absorb sunlight and give out heat. Their dark particles settle on snow and glaciers causing them to warm and melt.

Much of this pollution is overlooked as it is shrouded by human loss, religious worship and identity, but researchers have warned that the current scale of its green damage demands further study. — PTI

Draft plan 'dilutes' guards for eco-sensitive zones

Experts Say They Have No Idea Why Plan Is Being Revised

Jayashree Nandi | TNN

New Delhi: There is little hope for ecologically sensitive zones in the national capital region (NCR), including the Aravalis and the riverine ecosystems of Yamuna, Hindon, Sahibi and Kali.

National Capital Region Planning Board (NCRPB) is revising its Regional Plan 2021, but the new draft plan seems to be "diluting" the only environmental safeguards the plan had. Urban planners and environmental experts critiqued the draft plan on Thursday and made a set of recommendations to the board.

Most experts said they were not quite sure why the plan was being revised. "There are many new things in the draft like air and water quality standards but why are existing clauses being diluted?" asked Chetan Agarwal, environmental analyst who was one of the organizers of the revision meet.

There are many loopholes in the draft but what has irked experts the most is that it talks of "guidelines for development activities" in natural conservation zones, including Aravali range in Rajasthan, Haryana and Delhi, and river floodplains. "If they are mentioning guidelines, they must be considering develop-

GREENS SEE RED OVER PLAN

Why greens seeing red over NCRPB's regional plan 2021

- Earlier plan had 0.5% limit on construction in natural conservation areas; new plan makes no mention of it
- Plan mentions development guidelines, but environmentalists worry if this would affect green zones
- Previous plan empowered NCRPB to approve master plans of all cities in NCR; latest plan has deleted this clause. Does this mean NCRPB is trying to withdraw from
- overseeing city plans?
- Earlier plan required all towns to map open spaces, water channels and forest areas to see if any area is ecologically sensitive. Latest plan requires only new townships to do so
- Green areas included under forest cover. Does this mean even city parks come under forest cover?
- Only 12 lakes listed in NCR, but Wetland Atlas mentions over 5,000

ment in the region," he added.

Urban planners also felt that the time has come to merge environmental issues with other factors like rural development, transportation or land use. "All national environmental policies made after 2005 when the regional plan was first made should be incorporated. For instance there is a wetland conservation act now. There cannot be any construction in 50 metres around wetlands," said Aresh Maitra, former director of School of Planning and Architecture (SPA). He also stressed on inclusion of renewable energy use plans.

Other experts recommended that new regulations, including national environ-

ment policy, convention on biological diversity and disaster management act, be incorporated in the plan.

NCR falls under one of the 10 bio-geographical zones in India. "It's a semi-arid region with thorny forests and wetlands. These two dominant features of NCR, specially wetlands, need protection. We also need to identify keystone species of this region. For instance, in Sariska, the most important species is tiger and the entire habitat of the area revolves around it. Similarly we have to identify those extremely important species of NCR and incorporate these into the regional plan," said Meenakshi Dhote, professor of en-

vironmental planning, SPA.

But the draft plan doesn't factor in any of these biodiversity concerns. Dhote said the draft plan needed to look at People's Biodiversity Register that lists dominant biodiversity features of every region.

While the draft plan is extremely "weak", the existing plan has also not been implemented. Almost none of the master plans, including Gurgaon, has done land suitability analysis, said experts. "It's a basic process to see which area is suitable for what type of development," added Agarwal. There has been a 23% reduction in green areas and 35% increase in built-up areas in NCR from 1989 to 2002, according to an analysis of land-use change carried out by Agarwal. The 0.5% limit on construction for natural conservation zones has also not been implemented with a number of encroachments across Aravalis.

Manoj Misra of Yamuna Jiye Abhiyan pointed out, "The plan lists various types of waterbodies, including canals and lakes, but not *johads* (village ponds) which can play an important role in supplying water." He recommended that instead of focusing on dams, the idea should be to harness distributed reservoirs near rivers.

The Times of India, Delhi dated November 01, 2013

The Times of India, Delhi dated November 02, 2013

Notice to green body on Akshardham work

Ayaskant Das | TNN

ment notification of 2006.

New Delhi: The National Green Tribunal on Friday issued a notice to the State Environment Impact Assessment Authority of Delhi asking it to explain how it granted environmental clearance for 'expansion' of Akshardham cultural complex. The tribunal also issued notices to the union environment ministry and DDA on the petition filed by NGO Yamuna Jiye Abhiyan.

The notices were issued by the principal bench of the tribunal headed by chairperson Justice Swatanter Kumar. The NGO convener, Manoj Misra, has alleged in the petition that SEIAA, in granting post-facto environmental clearance to the project, has grossly contravened provisions of the Environment Impact Assess-

The SEIAA had granted clearance to the project on July 30. Misra has alleged that a substantial portion of the expansion project had already been constructed by the time it was granted clearance. The expansion work of the original Akshardham complex is being undertaken by its trust, Bochasanwasi Sri Akshar Purshottam Sanstha, at Rs 10 crore. The tribunal has issued a notice to the trust as well as Yamuna River Development Authority.

Misra has further contended that the clearance letter given on August 30 mentions that the temple trust went ahead with construction of additional structures because it was unaware of the requirement for an environment clearance.



CONTRVERSIAL NOD

TOI file photo

Bochasanwasi Sri Akshar Purshottam Sanstha, at Rs 10 crore. The tribunal has issued a notice to the trust as well as Yamuna River Development Authority.

The Times of India, Delhi dated
November 05, 2013

Diwali air quality worse than last year's

Experts Blame It On Type Of Crackers, Say Situation Critical

Jayashree Nandil/rnw

New Delhi: Many Delhiites felt that decibels levels on Diwali night were a shade lower than previous years, but the dense haze of near-choking pollution told a different story. Now the verdict is out. The PM 10 (coarse particles) levels this year were found to be higher compared to last year at all monitoring locations in the city, the Central Pollution Control Board said.

Levels of sulphur dioxide, associated with breathing difficulty and other respiratory ailments, were also higher, according to Delhi Pollution Control Committee data.

Interestingly, the noise levels were higher than last year in many east and north Delhi areas—Mayapuri Vihar, Dilshad Garden, Kamla Nagar and Pitampura—but were lower in south and central locations such as Anand Nagar near AIIMS, ITO and Lajpat Nagar.

Even though there isn't much of a difference in other parameters like nitrogen dioxide (NO₂), PM 2.5 and carbon monoxide (CO) as compared to 2012, the peaking levels of these pollutants were extremely high on Sunday evening.

Weather conditions also played a part. The average wind speed (0.36 m/sec) was lower compared to last year (0.43 m/sec) which meant that pollutants like PM 10 hung in the air instead of dispersing.

A lower mixing height (atmospheric zone of almost stable temperature and specific humidity) than last year also aggravated the condition by keeping pollutants trapped.

According to CPCB, PM 10 levels increased quite a bit from 2012, the maximum level rising by about 187 microgram per cubic metre. NO₂ levels decreased at most locations while SO₂ decreased at five locations but increased at two—Pitampura and Shahzadpur. But DPCC, which moni-

HOW CITY GASPED FOR BREATH

Delhi Pollution Control Committee data (in microgram per cubic metre)

Pollutant	2012	2013
Carbon monoxide	19-75	1.6 to 3.6
Oxides of nitrogen	65-117	67-110
Particulate matter (PM10)	528-560	363-663
PM2.5	293-337	233-370
Sulphur dioxide	35-114	20-88



PEAKS At Anand Vihar

PM10 concentration went up to 1,378 microgram per cubic metre

PM2.5 concentration went up to 533 microgram per cubic metre

Location	Noise pollution (dB)			
	Diwali		Normal day	
	2012	2013	2012	2013
Lajpat Nagar	81	79	58	56
East Arjun Nagar	74	72	57	59
ITO	71	69	70	67
Mayapuri Vihar II	73	83	48	60
Kamla Nagar	80	81	61	63
Dilshad Garden	78	80	58	59
CP	69	74	64	69

Air pollution data* on concentration range for 7 locations in Delhi (in microgram per cubic metre)

Diwali		Normal day	
2012	2013	2012	2013
SO₂			
13-63	5-56	4-24	4-5
NO₂			
44-85	26-87	53-130	55-137
PM10			
748-951	796-1138	452-648	163-441

*Source: Central Pollution Control Board

tors other locations in the city found that SO₂ levels were higher compared to 2012—the maximum level increasing by about 25 micrograms per cubic metre.

"It's a cause for concern. SO₂ is an extremely harmful pollutant. On normal days, SO₂ in Delhi is usually much

below the standard. The fact that it has increased so much on Diwali points to the kind of crackers that are being manufactured," said Anumita Roychowdhury, executive director, research and advocacy, Centre for Science and Environment (CSE).

In fact, there could be a

worrying trend hidden in the sudden peaks of certain pollutants measured real-time by DPCC. For instance, SO₂ levels went up to 945 microgram per cubic metre at 11pm in RK Puram on Sunday and to 570 microgram at IGI Airport around 12:30am. NO₂ levels spiked to 461 micrograms at 11:30pm in Purjeshi Bagh and the PM 2.5 level at R K Puram was recorded at a high 643 microgram. These peaks are not shown in the range given by DPCC for Diwali day.

At Anand Vihar, both PM 10 and PM 2.5 were exceedingly high. PM 10 level was 13 times the permissible limit. "The levels are high in Anand Vihar also because of heavy vehicular traffic because it's near the border with Ghaziabad," said MP George from air and water. At DPCC,



HAZY PICTURE: A view of India Gate on Monday

Deccan Chronicle, Hyderabad dated November 05, 2013

Deccan Chronicle, Hyderabad
dated November 06, 2013

HMR told to make Metro 'green'

DC CORRESPONDENT
HYDERABAD, NOV. 4

Hyderabad hopes to have the first green metro system in the country. The Indian Green Buildings Council (IGBC), which has its office in Hyderabad, is currently in talks with the L&T Hyderabad Metro Rail authorities to register the project as a green project and thereby make all the proposed 56 stations green.

This will require all the stations on the metro line to use green energy, rain water harvesting, green building material that can be recycled and

UNIQUE AND FIRST-OF-ITS-KIND PROJECTS IN HYDERABAD

- CIL-Sohrabji Godrej Green Business Centre - India's first Platinum rated green building
- Avani Residence - India's first IGBC (Indian Green Building Council) Platinum rated green home
- HUDA - First IGBC rated government building
- RGIA - India's first green airport passenger terminal building
- Hyderabad Institute of Technology and Management (HITAM) - India's first IGBC green educational institute
- PEBS Pennar - India's first IGBC green factory building



the maximum amount of natural lighting and ventilation.

Hyderabad has 125 green building projects, covering 91 million

square ft. including Shamshabad airport. Several IT offices, IT parks, hotels, residences, government offices and educational institutes meet the green requirement.

Hyderabad has been a pioneer in green projects.

"Different cities are currently on a different learning curve when it comes to the green buildings concept but Hyderabad has been a pioneer with many unique projects like the first airport to go green, first educational institute to go green etc," said a senior official from the Council.

Climate change will dry up farming water

DC CORRESPONDENT
HYDERABAD, NOV. 5

Climate change has once again come into focus with experts deliberating on its imminent effect on food security.

According to the experts, climate change was an important factor for reduced water availability and added that coupled with rapid urbanisation, it would leave little water for farming.

Delegates were speaking on the first day of the World Agriculture Forum Congress 2013 here on Tuesday.

They opined that modern food systems being propagated by food chains would displace crores of small and marginal farmers worldwide. They also predicted that at the current rate of degradation, the top soil would be totally lost in about 50 years.

The Times of India, Delhi dated
November 05, 2013The Economic Times, Delhi
dated November 06, 2013

Warming led to dwarfism in mammals

Washington: Mammal body size decreased significantly during at least two ancient global warming events millions of years ago, a new study has found. A similar outcome is possible in response to human-caused climate change, according to a University of Michigan paleontologist and his colleagues. Researchers have known for years that mammals such as primates and the groups that include horses and deer became much smaller during a period of warming, called the Paleocene-Eocene Thermal Maximum (PETM), about 55 million years ago.

Now, Philip Gingerich and his colleagues have found evidence that mammalian "dwarfing" also occurred during a separate, smaller global warming event that occurred about 2 million years after the PETM, around 53 million years ago.

"The fact that it happened twice significantly increases our confidence that we're seeing cause and effect, that one interesting response to global warming in the past was a substantial decrease in body size in mammalian species," said Gingerich, a professor of earth and environmental sciences.

Researchers concluded that decreased body size "seems to be a common evolutionary response" by mammals to extreme global warming events "and thus may be a predictable natural response for some lineages to future global warming".

Unchecked Climate Change to Lower Food Production

Inaction on climate change would create serious problems for India: Report

URMI GOSWAMI
NEW DELHI

Unchecked climate change, scientists warn, will slow down economic growth, impact poverty reduction, lower food production and drive up food prices.

A leaked copy of the draft report of the Working Group II of the Intergovernmental Panel on Climate Change (IPCC), reviewed by ET, sounds the most urgent warning till date on the adverse impacts of unchecked climate change.

While poor African countries stand out as the likely worst victims, inaction on climate change would create serious problems for developing countries like India and China, which are trying to pull out millions of their people from poverty.

The draft report, which could be revised before it is finalised in March 2014, states that throughout the 21st century, climate change will slow down economic growth and further erode food security, and trigger new poverty traps, particularly in urban areas.

Scientists say with "medium confidence" that the negative impacts of climate change on crops and terrestrial food production are more common than positive impacts. In the recent past there have been rapid increase in food and cereal prices, which scientists say points to the fact that key production re-



gions are sensitive to climate extremes.

The draft report stresses that without corrective measures, temperature increases of 1 degree or more would "negatively impact" yield for crops like rice, wheat and maize. Projections suggest that unchecked climate change will reduce yields by as much as 2% every decade.

At the same time, demand for food grains is expected to rise by 14% every decade till 2050, resulting in a situation of spiralling food prices.

Tropical countries would be the worst affected, especially because they are home to the world's poorest people.

While a 2 degrees rise in temperature can be countered through effective measures to adapt to climate change, scientists warn such efforts will have no impact if local temperature increases by 4 degrees or more.

It could make the gap between crop production and rising demand "increasingly large" in many regions, and pose significant threats to food security.

For India, such a situation will endanger the government's food security programme that seeks to provide food grains at a low cost to 67% of the population.

urmi.goswami@timesgroup.com

The Economic Times, Delhi dated November 06, 2013

Funding for Tackling Climate Change to Top Warsaw Agenda

A ministerial dialogue will be held at the summit to devise a strategy that will ensure funding from private and public sources for tackling climate change

URMI GOSWAMI
NEW DELHI

An effort to provide developing countries with funds to tackle climate change and its adverse impacts will be on top of the agenda at the UN-sponsored climate change meeting in Warsaw.

A ministerial dialogue will be held at the summit to devise a strategy that will ensure funding, from private and public sources, for tackling climate change.

Funding to counter and limit climate change is a hot-button issue between industrialised countries and developing countries in climate change negotiations. A satisfactory and workable solution on finance could help break the logjam.

The Warsaw round of negotiations, slated to begin in mid-November, has a dedicated ministerial session to address climate finance. Ministers will consider the efforts made so far to provide for predictable and assured funding to developing countries.

The UN Framework Convention for Climate Change, the international body tasked with formulating a global response to address the issue, has said that it would like the minister-level dialogue to "provide a vision and strategy on how to make further progress on mobilising long-term finance" as well as "take forward strategies and approaches for mobilising scaled up climate finance to \$100



billion per year by 2020".

There has been a vacuum in ensuring predictable funding ever since the \$30 billion—known as fast start finance—pledged by industrialised countries over a three-year period came to an end in 2012. Industrialised countries have said that they would garner funds to the tune of \$100 billion per year by 2020. However, there has been no firm commitment on providing finance for the period up to 2020.

The ministerial will take up the issue of providing money for climate change efforts up to 2020. This period is seen as crucial to fill the gap between efforts being made to reduce emissions and the amount of emissions required to

be reduced, as determined by scientific studies, to prevent dangerous levels of climate change.

Finance has been one of the contentious issues of climate change negotiations, making it difficult to craft a comprehensive global approach on the issue of climate change.

Besides commitments by industrialised countries to provide finance, industrialised and developing countries are at logger heads over issues such as identifying reliable and new sources of funds, a bigger role for the private sector in climate finance, role of public funding and money for efforts to help countries adjust to the changes on account of global warming.

The ministerial meeting at Warsaw to set out a strategy to provide climate finance will be chaired by Martin Lidegaard, Denmark's minister for climate energy and buildings, and Maria Kiwanuka, Uganda's minister for finance, planning and development.

The day-long consultation will consider the "challenges in mobilising and deploying climate finance and the ways and means to overcome them", according to the programme for the ministerial dialogue.

Providing money for adaptation, or helping countries adjust to the impacts of climate change that has already taken place, is high on the dialogue's agenda.

The ministerial will also take up

the contentious issue of accessing private sector in mobilising climate finance.

Advanced developing countries such as India and China have stressed that public funding should be the mainstay of climate finance. However, the inability of governments to allocate higher levels of exchequer's money, coupled with the enormous magnitude of fund requirement, has made it impossible to ignore the idea of tapping private sources.

The ministerial will seek to provide answers on the regulatory interventions required to ensure that private finance moves to technologies that are climate friendly.

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The Times of India, Delhi dated
November 06, 2013

Air quality in NCR on green radar


Agencies To Track Conditions And File Weekly Reports On Steps For Preventing Smog

TIMES NEWS NETWORK

New Delhi: Transport, municipal and pollution control bodies in the NCR will now have to prepare a report on the steps to prevent smog in keeping with the directions of Environment Pollution Prevention and Control Authority (EPCA). The action taken report (ATR), followed by weekly reports on the progress made.

EPCA chairman Bhure Lal, along with member Sunita Narain, is said to have held a high-level meeting with bosses and representatives of the UP Pollution Control Board (UPPCB), Delhi Pollution Control Committee (DPCC) Haryana State Pollution Control Board (HSPCB), Ghaziabad Municipal Corporation (GMC), Noida Pollution, GNCTD and other agencies.

The agencies are trying to prevent smog-like conditions



ACTION POINTS

Delhi Pollution Control Committee (DPCC), Uttar Pradesh Pollution Control Board (UPPCB), Haryana State Pollution Control Board (HSPCB) to check generators in industrial and commercial establishments compliance with emission and noise norms

Delhi government to expedite development and implementation of air quality index and health advisory system

Traffic police, corporations and toll contractors to enforce the Supreme Court order restricting entry of goods vehicles not bound for Delhi

DPCC/UPPCB/HSPCB to control dust generated at construction sites

Depute officials to take complaints from public

Civic agencies, in association with DPCC/UPPCB/HSPCB, to have special teams that keep an eye out for burning of leaf and garbage

Surprise visits by DPCC/UPPCB/HSPCB in industrial areas

Teams by transport departments of Delhi, UP and Haryana to check visibly polluting vehicles

The agencies are trying to prevent smog-like conditions in the capital by curbing emissions from diesel generators, industries, vehicles and construction activity

in the capital by curbing emissions from diesel generators, industries, vehicles and construction activity. The air quality is being closely monitored.

"With the winter fast approaching all the agencies concerned will have to conduct special drives to check pollution due to burning of garbage and emissions from vehicles and industries. This year, with the visibility already dropping and haze thickening we need all agencies to be prepared in advance and check their working periodically," said Bhure Lal, chairman, EPCA.

The meeting was held on October 18 in view of the dense haze that has already descended on not only the capital but areas adjoining it with winters yet to reach their peak.

"I don't think we have received the circular from EPCA. But we will follow all the measures we had taken last winter, like installing sprinklers at construction sites to control dust or checking if emissions from diesel generators," said Sandeep Mishra, member secretary, Delhi Pollution Control Committee (DPCC). But there has been no progress on developing health based pollution index for Delhiites so that they understand the health impacts of various pollutants. "Not much work has started on that. It will take us more time to develop such an advisory," he added.

The Economic Times, Delhi dated November 06, 2013

Young Ventures Riding the Green Building Bandwagon

RADHIKA PAIR & VISHAL DUTTA
BANGALORE/AHMEDABAD

The rising trend of constructing green buildings and the scarcity of traditional materials have opened up a sizeable market for young ventures producing alternatives that are cost efficient and eco-friendly.

These ventures offer solutions that range from masonry products that do not use cement or sand to online platforms that improve efficiency by linking builders with suppliers of construction materials.

"Builders are now increasingly focusing on raising efficiency," said Sourabh Bansal, 29, co-founder of Magicrete, a manufacturer of autoclave aerated concrete blocks, which are nearly nine times larger than bricks but lighter. These blocks require lesser steel and concrete during construction.

They are also environment friendly as they use fly ash, a by-product of thermal power generation, as a key ingredient. An alumnus of IIT-Kharagpur, Bansal said builders using his blocks saved about 10% in costs.

The company, set up in 2008, counts Larsen & Toubro, K Raheja Corp, Lodha Group, Shapoorji Pallonji & Co and Reliance Industries

among its clients. It earned revenue of ₹100 crore in fiscal 2013.

"Products that solve issues of availability of raw material and price fluctuations will find quick acceptance," said Anup Naik, director at Singapore-based architecture and design firm Space Matrix.

In Pune, Green Build Products uses recycled waste to develop a range of ready-to-apply wet-mix masonry mortars and plasters. The company—launched in 2005, by husband-and-wife duo Pradeep and Shilpa Joshi—has patented its products in Australia, Switzerland, India and Singapore.

Another company, Pericon Premix in Ahmedabad, introduced 12 sand-free eco-friendly products like plasters, mortars, wall putties and special plasters in August.

It is the large construction market in India, which is estimated to grow to \$1 trillion (₹61.7 lakh crore) per year by 2025, that is drawing these entrepreneurs.

"Three years ago when we used to put up stalls at trade shows, people used to ask us how will paper work for interiors and furniture," said Abhijeet Makhijani, 31, co-founder of Bangalore-based Lsquare Eco-Products, which manufactures a recycled paper based construction product. "Now, they come with specific

product queries or direct orders."

The company, which expects to earn over ₹11 crore in revenue next fiscal, makes paper honeycomb core and doors, panels and furniture using recycled paper that is strengthened and made into a honeycomb structure.

Architects said such innovations offer multiple benefits. "Earlier we used to take over a month to do up a 1,200 square feet store, now with paper honeycomb we take just 15 days," said Kaushik Thangamani, an architect who designs stores at Levi Strauss & Co.

It is not just raw materials that are witnessing innovations. Procurement is now moving online. Vikram Patel, 39, runs a year-old online platform eConstruction-Mart that links builders with suppliers. Currently, Patel handles 10 major products and plans to add over 200 more categories to his portfolio.

This is Ahmedabad-based Patel's second attempt at an online construction materials platform. His first venture, launched over a decade ago in 2001, failed. "Then broadband and internet penetration was negligible," said Patel, whose company clocks a monthly turnover of ₹5 crore. "Now most organised construction companies, and even some unorganised players, use internet."



The Times of India, Delhi dated November 06, 2013

Post-Diwali smog smothers city as cool weather traps pollutants

Rain Expected For Two Days, May Clear Air

Neha Lakhandani | TNN

New Delhi: A sudden drop in temperature and an equally sudden calming of winds on Tuesday exposed Delhiites to the capital's unhealthy air quality. Two days after Diwali,

FULL COVERAGE: P 4

a thick smog of pollutants hung over the city through the day as weather conditions prevented its escape.

Delhiites forced to inhale



NOW YOU SEE IT... A barely visible Akshardham temple at 1.30pm on Tuesday

the noxious mix of gases could take comfort from the Met department's forecast of rain on Wednesday and Thursday, which is expected

to clear the air.

At Mandir Marg, oxides of nitrogen (NOx) levels touched a high of 165 micrograms per cubic metre against a stan-

dard of 80. At Punjabi Bagh, it touched 245 micrograms at 6.30pm while at RK Puram, it shot up to an alarming 919 micrograms at 7pm. Levels of fine particulate matter (PM 2.5) too were higher than the standard through the day across the city.

Experts said the pollution spillover from Diwali night made the smog worse. Initially, there were reports that farm fires in Punjab were responsible for the sudden spike in pollution but the Met department said the wind conditions were highly unfavourable for particulate matter to travel from Punjab.

The Times of India, Delhi dated November 06, 2013

Farm fires in Punjab not to blame for smog

► Continued from P1

The Met department has ruled out farm fires in Punjab as being responsible for smog in the capital.

"Had farm fires been the reason for the smog, cities between Delhi and Punjab would have also witnessed low visibility conditions, but that was not the case," said IGI Met director-in-charge R K Jenamani.

While NASA images showed large scale farm fires over Punjab between November 3 and 5, experts said the fires would not explain the rise in pollutants such as NOx.

"A fire will explain a rise in PM levels and some amount of pollution might have travelled to Delhi over the past few days from Punjab, but a similar rise in levels of NOx is a result of local

vehicular combustion," said Anumita Roychowdhury, associate director, Centre for Science and Environment.

On Tuesday, wind speed had come down to barely 2 kmph and with a drop in temperature — the minimum was three degrees below normal at 12.3 degrees Celsius, and the maximum five below normal at 25.4 degrees — the mixing height of pollutants reduced.

"Post Diwali, some amount of pollution had remained in the atmosphere. We thought it had dispersed by Monday night, but had actually settled down due to a favourable wind pattern."

"To this was added some pollution from cracker burning on Monday night. Once meteorological conditions became favourable,

this pollution and the local pollution in Delhi due to vehicular combustion formed the smog," said sources.

The city recorded high levels of PM 2.5, PM 10 and NOx, all of which were

much above the prescribed limits.

"The city needs a winter pollution action plan. Each winter, Delhi has several of these smog episodes and each time a favourable wind

pattern cannot bail us out.

Tuesday's episode is a classic example of pollution levels zooming suddenly with a change in weather conditions," said Roychowdhury. O P Singh, deputy direc-

tor-general, Delhi regional meteorological centre, said a western disturbance was expected to hit the western Himalayan region and adjoining plains of northwest India between November 6 and 8. "Rain and snow will occur at many places over Jammu and Kashmir during this period. Rain and snow will also occur at a few places over Himachal Pradesh and Uttarakhand. Rain is expected at one or two places in Rajasthan, Punjab and Haryana and Delhi."

Over Delhi, rain is expected between Wednesday and Thursday evening. The day temperature is likely to fall by 2-4 degree Celsius and will remain below normal. By November 9, longer duration fog is expected over the northwestern plains for a few days, Singh said.

SMOGGY CAPITAL

PM 2.5 LEVELS ON TUESDAY
(Between 10.30am and 5pm)

Standard | 60

Anand Vihar	462—643
Mandir Marg	376—493
Punjabi Bagh	325—545
RK Puram	281—517
IGI Airport	386—677

60

(Values in micrograms per cubic metre)

Max temp | 25.4
degrees Celsius
(5 degrees below
normal)

Min temp | 12.3
degrees Celsius
(3 degrees below
normal)

Forecast | Rain and thundershowers expected till Wednesday evening. Day temperature may fall by 2-4 degrees and remain below normal. Shallow fog will occur till Saturday after which it will intensify for the next few days



The Economic Times, Delhi dated November 06, 2013

Time is Running Out to Counter Adverse Impact of Climate Change, Says Christiana Figueres

ET Q&A

Time to take action to counter the adverse impacts of climate change is running out, and countries must scale up their efforts to reduce emissions and adapt to the phenomenon, says Christiana Figueres, who heads the United Nations Framework Convention on Climate Change (UNFCCC). In an interview with ET's Urmil A Goswami, Figueres says she expects the upcoming meet in Warsaw this month to register key progress on issues such as finance for policies aimed at arresting climate change. Edited excerpts:

What are the key areas in which you expect progress at Warsaw meet?

We expect progress on three fronts. First, on finance, we expect more clarity on the path towards mobilisation of climate finance. Countries have pledged to raise \$100 billion a year by 2020. How are we going to get there? How are we going to mobilise funding from private resources? How to utilise scarce public funding to shore up private investment? These are the key areas within finance where we expect progress. Second, a mechanism for loss and damage, which will address the issue of addressing the negative effects of climate change, particularly slow onset events. Governments at Doha considered the idea of a mechanism, now

they will have further discussions to have clarity on what the mechanism entails. Third, we expect that governments will move forward with the new agreement that was agreed at Durban.

With the Intergovernmental Panel on Climate Change, are you certain now that global warming is largely induced by human practices, do you expect countries to increase their targets to curb greenhouse gas emissions?

There is growing awareness of the impacts of climate change. In addition to scientific projection, there is a great deal of experiential evidence, as witnessed in the increasing number of extreme events across the world.

Curbing greenhouse gas emissions is among the top issues. We expect countries are conducting domestic analysis to identify the level of effort that needs to be made and can be made by each country.

The United States has suggested that instead of setting a global goal each country be left to decide its own targets to reduce emissions. Do you think this undermines efforts by the UNFCCC to craft a global approach to climate change?

Both approaches — bottom-up and top-down — are necessary. These are not mutually exclusive. The sum total of all the current efforts by governments is not enough to close the gap between what has been pledged so



Christiana Figueres

far in terms of emission reductions and what is needed for the world to stay below the internationally agreed two degrees temperature rise. What is required is the maximum level of contribution from all. At Warsaw, we expect countries will work with each other to close the gap.

Finance continues to be the big trust issue between developed and developing countries and it is crucial for moving ahead. How do you expect to attract private finance for climate change, particularly for adaptation to climate change? What are the efforts being made to address finance in the run-up to 2020?

How to attract private funds is work

in progress. There is a realisation now that public funding is not enough. The IEA puts the total requirement of climate finance at \$1 trillion a year. Public funds can't fill this requirement. However, public funds can be the critical component to bring down risk and leverage private finance. We have to strategically use private funds to move away from old climate vulnerable technologies to climate resilient ones. As for funding for adaptation, the first capitalisation effort for the Green Climate Fund is underway. The fund is committed to provide finance for adaptation. However, that money may not be enough for adaptation requirements and we have to tap many other sources. We have to find a way to incentivise direct investment into adaptation. Providing adequate and predictable finance in the pre-2020 period is being discussed. The issue of how to ramp up from the fast start finance to the \$100 billion from 2020 is being carefully considered.

What is the progress on addressing loss and damage owing to climate change?

The discussion on loss and damage is an ongoing one. Countries have more clarity on it and there is an interest in creating a mechanism to deal with loss and damage. The scope, operation and capitalisation of this mechanism are issues that will be discussed at Warsaw.

The Times of India, Delhi dated
November 07, 2013

No faraway sources, pollutants at home behind smog

High Levels Of Particulate Matter, Nitrogen Dioxide & Carbon Monoxide Behind Recent Dense Smog In Capital: Study

TIMESNEWS NETWORK

New Delhi: The Delhi government's usual excuse of faraway sources causing pollution in Delhi may not work this time. Centre for Science and Environment's assessment of the dense smog on Monday and Tuesday suggests that calm weather and severe vehicular emissions may have caused it.

It's not just high levels of tiny particles (PM2.5) but also other toxic pollutants like nitrogen dioxide (NO2) and carbon monoxide (CO) that are ringing the alarm bells.

"The early onset of cool weather, along with pollution

have caused severe smog in NCR," says Anumita Roychowdhury, executive director, research and advocacy, Centre for Science and Environment (CSE).

CSE's monitoring of smog highlights that levels of NO2, Benzene and CO have gone up. Most of these pollutants are released in vehicular emissions. On Wednesday, benzene level at Anand Vihar was around 10.5 microgram per cubic metre at 8pm. The prescribed limit is 5. NO2 level at Mandir Marg at the same time was 148.5 microgram per cubic metre, when the standard is only 80.

Last year, Delhi govern-

CSE's monitoring of smog highlights that levels of NO2, Benzene and CO have gone up. Most of these pollutants are released in vehicular emissions

ment had said the cause of smog was farm fires in Punjab, Haryana and Uttar Pradesh. This year too, they released NASA images of farm fires in Punjab.

"With the wind nearly gone, the pollution - mainly from vehicles - built up very close to the ground level and enveloped the city in a thick

blanket of smog. Every winter, the calm and cool weather makes pollution hang heavy, but the severity of the smog depends on the actual pollution level that is already unacceptably high and rising in Delhi," adds Anumita.

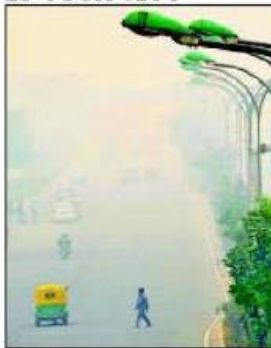
CSE's analysis found that PM2.5 levels often exceed the standard by five to six times. Carbon monoxide, which causes dizziness and nausea and comes almost entirely from vehicles, exceeds the one hour standard by 1.8 times.

CSE called on Delhi government to put in place short-term and long-term pollution control measures. They had initiated a plan to meet clean air standard by 2017 but haven't completed it.

"The Delhi government needs to expedite the process of finalizing the daily public information system on severity of air pollution and give a health advisory to people who are vulnerable to respiratory and cardiac problems," it said.

CSE gave examples of other governments that have successfully done it. During high pollution episodes, Paris authorities recommended drivers to postpone trips to Paris; or bypass Paris city; use public transport; organize carpooling; minimize combustion of high sulphur fuels in industry and so on.

HOW POLLUTED IS YOUR CITY



RISE IN SEVERAL POLLUTANTS | Nitrogen dioxide (NO2) levels worsen; daily peak carbon monoxide (CO) and benzene levels very high. Vehicles main source of some pollutants

PARTICULATE POLLUTION Levels of PM2.5 (fine particles) 5-6 times higher than the limit. High exposure to PM2.5 can cause complications related to asthma, lung diseases, chronic bronchitis and heart damage. Long-term exposure can even cause lung cancer

SEVERE POLLUTION DURING PEAK HOURS | CO pollution,

caused almost entirely by traffic, exceeds the one-hour standard by 1.8 times. PM2.5 peak-hour values range from 379 (morning) to 751 (evening). The evening peak is three times higher than non-peak levels. NO2 peak-hour values range from 118 in morning to 185 in evening

HIGH NIGHT-TIME POLLUTION PM2.5 levels at night rise to about 680 microgramme per cubic metre, while NO2 stands at 140 microgramme per cubic metre. Goods traffic and conditions suited to trapping pollutants mainly responsible

Warning bell: Greenhouse gas levels hit new high

Concentrations Of Carbon Dioxide, Methane And Nitrous Oxide Broke Fresh Records In 2012, Says UN

Geneva: The amount of greenhouse gases in Earth's atmosphere hit a new record high in 2012, continuing an ever-faster rise that is driving climate change, the UN weather agency said on Wednesday. "The concentrations are reaching once again record levels," Michel Jarraud, who heads the World Meteorological Organization (WMO), told reporters in Geneva.

His organization released its annual report on greenhouse gases on Wednesday, showing that concentrations of carbon dioxide (CO2), methane and nitrous oxide all broke fresh records in 2012.

Global concentrations of CO2, the main culprit in global warming, for instance reached



HEAT IS ON

32% increase in warming effect on climate between 1990 and 2012, due to heat-trapping gases such as CO2, methane & nitrous oxide

MAIN GREENHOUSE GASES

CO2 | Accounts for 80% of increase; emitted through fossil fuel burning, deforestation. Remains in air for hundreds of years
Level in 2012 | 393.1ppm. 141% of pre-industrial level of 278ppm. Global annual mean CO2 level set to cross 400ppm in 2015-16. The last time CO2 levels were this high was 3-5 million years ago

Nitrous oxide | Impact on climate 298 times greater than CO2
40% emissions through human activities
Level in 2012 | 325.1 parts/billion, 120% of pre-industrial level

Methane | 40% emissions by natural sources, 60% through human activities like cattle breeding, agriculture and biomass burning
Level in 2012 | 1,819 parts/billion, 260% of pre-industrial level

393.1 parts per million last year, or 141% of pre-industrial levels — defined as before 1750.

The report was released a day after the UN Environment Programme warned the chances of limiting the global temperature rise to 2°C over pre-industrial levels were swiftly diminishing, and ahead of UN climate talks that open in Warsaw next week.

The UN's two-degree target is being chased through efforts to curb Earth-warming greenhouse gas emissions, mainly caused by fossil-fuel burning to power industry, transport and farming. "The observations from WMO's extensive Global Atmosphere Watch network highlight yet again how heat-trapping gases from human ac-

tivities have upset the natural balance of our atmosphere and are a major contribution to climate change," Jarraud said.

Dave Reay, a carbon management expert at the University of Edinburgh, said that stabilizing greenhouse gas concentrations was the key to successful climate negotiations, emissions regulations, and carbon markets rests.

"Despite the financial crash, and reduced emissions from some nations, the global picture is one of carbon dioxide concentrations in our atmosphere reaching a record-breaking high year after year," Reay added.

Experts warn that unless more is done to rein in emissions, the world faces potentially devastating effects such as more

frequent megastorms, species extinctions, water shortages, crop die-offs, loss of land to the rising seas as glaciers and polar ice melt, and spreading disease.

"CO2 has a ratchet effect," said Peter Wadhams, professor of ocean physics at the University of Cambridge.

"Its influence on the climate system lasts for about 100 years, so we will be paying for our profligate use of fossil fuels for a long time to come — so long, in fact, that we may well have now made it impossible for the planet to avoid catastrophic global warming effects." The atmospheric increase of CO2 from 2011 to 2012 was higher than the average growth rate over the past 10 years, WMO said. AFP

*Deccan Chronicle, Hyderabad dated
November 07, 2013*

Greenhouse gases at record high: UN

Geneva, Nov. 6: The amount of greenhouse gases in Earth's atmosphere hit a new record high in 2012, continuing an ever-faster rise that is driving climate change, the UN weather agency said on Wednesday.

"The concentrations are reaching once again record levels," Michel Jarraud, who heads the World Meteorological Organization (WMO), told reporters in Geneva. His organisation released its annual report on greenhouse gases Wednesday, showing that concentrations of carbon dioxide (CO₂), methane and nitrous oxide all broke fresh records in 2012. Global concentrations of CO₂ reached 393.1 parts per million last year which is 141 per cent higher than permissible limits. — AFP

*The Times of India, Delhi dated
November 07, 2013*

Milk may protect us from pollution

London: Scottish scientists are exploring the pollution-protecting powers of milk produced by cows in the 48 hours after giving birth. Researchers at Edinburgh Napier University in Scotland want to find out whether drinking the milk produced by cows in the 48 hours after giving birth could protect athletes' lungs from the effects of air pollution. Known as bovine colostrum, the early-milk which is rich in antioxidants has already been found to aid gut problems like diarrhoea and boost athletic performance.

Now, it is hoped it could be used to protect athletes in the 2016 Olympic Games in Rio — a city known for its elevated levels of air pollution. Dr Elisa Gomes, who is leading the study, said, "We are testing competitive cyclists, who will be given bovine colostrum every day for 2 weeks. We will then monitor their performance as they cycle in a special environmental chamber which is able to replicate the hot, humid and ozone-polluted environment athletes will face in Rio." PTI

*The Times of India, Delhi dated
November 11, 2013*

Sustainability is Still More Talk Than Action



Last week was a week of surveys on how companies are taking - or not taking - to sustainability. Three surveys - one Indian and two global - were released. The message was consistent: companies in general, including from the set of top 200 listed companies in India, are quick and eager to announce policies on corporate responsibility, but are woeful laggards in executing what they profess. Naren Karunakaran compiles the talking points

EXECUTION: Gap Between Intent and Action

INDIA

92%
Have policy statement on 'ethics, transparency and accountability' in their 'code of conduct'

72%
Have it backed by a board resolution

40%
Have stated commitments in the form of clear objectives

Source: Business Responsibility - India Survey 2013, a survey of the top 200 listed companies in India by the C-HIT Centre of Excellence for Sustainable Development and the Indian Institute of Corporate Affairs

GLOBALLY

65%
Signatories committed to sustainability at the CEO level

35%
Training managers to integrate sustainability into strategy and operations

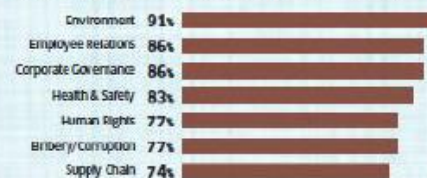
Source: 2013 study by United Nations Global Compact



Illustration: ARNDIM

CONCERNS: Human Rights, Supply Chain and Corruption Low on Indian Agenda

Given the current situation of protests and heightened governmental scrutiny, Indian firms are alive to the risks associated with green issues. Low on the agenda are human rights, supply chain and corruption - areas that are poorly regulated in India and with a potential to quickly turn into issues of deep concern, as is beginning to happen (see graphic). By comparison, The Business for Social Responsibility/GlobeScan's State of Sustainable Business Survey of 2013, which tapped into the opinions of over 700 sustainability professionals, differs from the Indian view and places human rights as top priority for firms in their sustainability efforts over next 12 months.



Source: Business Responsibility India Survey 2013

BARRIERS: Convincing Leadership

The GlobeScan Survey states the principal barrier in integrating sustainability into biz strategy & processes is convincing leadership and altering management mindsets



One of the reasons why sustainability has been unable to gain traction is the low level of engagement between sustainability functions and other critical functional areas within companies, the exception being corporate communications

Source: BSR/GlobeScan Survey 2013

DISCLOSURES: Regulations Lead to Action

The third survey released by Corporate Knights Capital, Aviva Investors and Standard & Poor's Rating Services deals with trends in sustainability disclosures and benchmarks stock exchanges on the extent to which their large listed companies disclose a set of sustainability indicators. Nine of the top 10 ranked exchanges are in countries with sustainability disclosure policies that are mandatory, prescriptive and broad. India's NSE is ranked 34 out of 45 exchanges surveyed, and a laudatory mention is made of the recent Seoi move to mandate annual business responsibility reporting for the top 100 listed firms

Rank 2013	Rank 2012	Stock Exchange	Country
1	4	BME Spanish Exchanges	Spain
2	3	Helsinki Stock Exchange	Finland
3	-	Tokyo Stock Exchange	Japan
4	7	Oslo Stock Exchange	Norway
5	5	Johannesburg Stock Exchange	South Africa
6	10	Euronext Paris	France
7	2	Copenhagen Stock Exchange	Denmark
8	15	SIX Swiss Exchange	Switzerland
9	-	Athens Stock Exchange	Greece
10	1	Euronext Amsterdam	Netherlands
34	30	National Stock Exchange	India



AMRIT

Deccan Chronicle, Hyderabad dated November 12, 2013

Climate meet to focus on emissions

■ UN climate chief warns of severe natural disasters in future

Warsaw, Nov. 11: Nations launched a new round of talks on Monday for a 2015 deal to cut Earth-warming greenhouse gas emissions in the aftermath of a deadly Philippines typhoon the UN's climate chief labelled "sobering".

The 12-day United Nations talks opened amid a slew of warnings about potentially disastrous warming with increasingly extreme weather phenomena unless humankind changes its atmosphere-polluting, fossil-fuel burning ways.

"What happens in this stadium is not a game. There are not two sides but the whole of humanity. There are no winners and losers, we all either win or lose in the future we make for ourselves," UN climate chief Christiana Figueres told climate negotiators.

"We gather today under the weight of many sobering realities," she added — the first being the new record of 400 parts per million of carbon dioxide (CO₂) in the atmosphere that was reached earlier this year.

"The second is the devastating impact of Typhoon Haiyan, one of the most powerful typhoons to ever make landfall. Our thoughts and our prayers are with the people of the Philippines, Vietnam and South-East Asia."

The UN has set a target of limiting global average warming to two



People walk amongst debris next to a ship washed ashore in the aftermath of Super Typhoon Haiyan at Anibong in Tacloban, eastern island of Leyte on Monday. Hundreds of Philippine soldiers and police poured into a city devastated by Super Typhoon Haiyan to try to contain looting that threatens an emergency relief effort. — AFP

degrees Celsius over pre-Industrial Revolution levels — at which scientists believe we can avoid the worst effects of climate change.

The world seeks to reach that goal by curbing emissions of invisible, heat-trapping gases from burning fossil fuels which provide the backbone of the world's energy supply standards.

— Agencies



Residents loot water-damaged sacks of rice from a warehouse in the aftermath of Super Typhoon Haiyan in Tacloban in the eastern Philippine island of Leyte on Monday. The US, Australia and the United Nations also mobilised emergency aid to the Philippines to tackle the devastation. — AFP

Deccan Chronicle, Hyderabad dated November 13, 2013

India lost \$591m to disasters

India stands at 46 out of 195 nations, says UN report

PRAMILA KRISHNAN | DC
WARSAW, NOVEMBER 12

India stands 46th among the 195 countries which were assessed for global climate change risk. The rankings were released on Tuesday at the UNFCCC (United Nations Framework Convention on Climate Change) in Warsaw.

According to this global report, India has suffered losses to the tune of \$591.28 millions in terms of purchasing power parity (PPP) in 2012 alone due to climate change problems.

The report highlights that all the top 10 worst affected countries were the least developed countries. The top three were island nation Haiti, the Philippines and Pakistan.

The index was calculated based on the impacts of weather-related loss events from 1993 to 2012 in all countries. For example, losses in tragedies like the tsunami and cyclone Thane that affected Puducherry and the recent Uttarakhand flash floods have been computed using the adjusted value.

PPP is a mathematical formula, which economists use to create parity between two currencies to make them compared. In simple terms, purchasing power parity could be called as adjusted value.

Releasing the report, Sonke Kreft and David Eckstein said, "This index is an analysis based on one of the most reliable data sets available on the impacts of extreme weather events and associated socio economic data. More than 5,30,000 people have died as a direct result of almost 15,000 extreme weather events."

They mentioned that many developing countries are already taking measures in preparation for climate related disasters, promoting as well as implementing adaptation.



A US Marine carries an injured woman who survived the Super Typhoon Haiyan in the central coastal city of Tacloban, as they disembark from a military cargo plane on Tuesday. The UN launched an appeal for a third of a billion dollars on November 12 as US and UK warships steamed towards the typhoon-ravaged Philippines where well over 10,000 people are feared dead.

— AFP

DECODING CLIMATE RISKS FOR 2014

What is Purchasing Power Parity (PPP)?

Economists use a mathematical formula to create parity between two currencies to make them compared. Such value is called as purchasing power parity or adjusted value.



GLOBAL CLIMATE RISK INDEX 2014, RELEASED BY U.N.

Top 10 nations in global climate risk index

Country	Rank	Losses in \$ millions
Haiti	1	1,220.66
Philippines	2	1,205.48
Pakistan	3	6,087.82
Madagascar	4	356.98
Fiji	5	135.55
Serbia	6	1,325.06
Samoa	7	220.91
Bosnia & Herzegovina	8	920.21
Russia	9	1,365.20
Nigeria	10	837.45

Risk index 2014 for South Asian countries

Country	Rank	Losses in \$ millions
India	46	591.28
Sri Lanka	29	54.56
Nepal	28	10.13
Pakistan	3	6,087.82
Bangladesh	13	2,012.00

Inmates escape from Tacloban

A PHILIPPINE general says that inmates have escaped from a provincial jail in the typhoon-hit city of Tacloban after breaking down a jail wall.

Army Brig. Gen. Virgilio Espineli, the deputy regional military commander, said Tuesday that guards fired shots to try to stop the prisoners from fleeing, and some returned. He didn't have a clear number for those who escaped. "Where will they go? What will they eat?" Gen. Espineli said. The jail held about 600 prisoners. He says the military was trying to help the public while also dealing with other problems.

— AP

*The Times of India,
Delhi dated
November 14, 2013*

Most parts of city in grip of noise pollution

Recent Case Of Panchsheel Park Highlights Worrying Trend

Jayashree Nandi | TNN

New Delhi: While smog and air pollution worry Delhiites, a rather loud aspect of pollution is being overlooked. A recent case in the National Green Tribunal shows that noise exceeds the safety standard in most parts of the capital. Roadside noise levels near Panchsheel Park are found to be higher than the permissible limit. Delhi Pollution Control Committee (DPCC) told the green body recently.

While the noise level on the road is about 73 leq dBA (linear equivalent decibel on A scale), the permissible limit is only 55 leq dBA. The tribunal was hearing a plea filed by one Umesh Saigal — a resident of the colony — after he alleged that noise pollution arising out of heavy traffic on Outer Ring Road is affecting the health of area residents.

Sources, however, say that Panchsheel Park is not the only place with this worrying trend. Sandeep Mishra, member secretary, DPCC, said that most residential and commercial areas in Delhi have noise levels higher than the permissible limit. "The noise pollution trends are upwards in almost all locations, so it would be difficult to say which areas are worst affected," he added.

In 1998, DPCC had done an extensive study of 102 locations in Delhi, 56 of which were residential areas. "Only two or three locations had met the standards then. The levels have obviously increased now," another DPCC official said, adding that day-time noise levels are around or

CITY TOO LOUD FOR ANYONE'S COMFORT

Noise pollution range at 5 monitoring stations between November 1 and 7 this year (in leq dBA)

NSIT
51.4-59.5

ITO
72.6-73.7

DCE
46.2-53.1

Delhi CPB
52.1-64.4

Dilshad Garden
45.8-57.0

Limit for residential areas:
55 leq dBA in daytime,
45 leq dBA at night

* linear equivalent noise decibel on A scale



HEALTH IMPACTS

Chronic exposure to sound beyond 85 dBA for 8 hours can cause irreversible hearing loss

A 140-decibel sound impulse next to ear can tear eardrum

Many suffer from low hearing with problems like diabetes enhanced by exposure to noise

Autistic kids are worse off as some hear sound louder than it is

Heart diseases and cognitive impairment problems in children

more than 70 leq dBA in most residential areas.

This month's Central Pollution Control Board (CPCB) data shows that noise levels are quite high near ITO and CPCB office in east Arjun Nagar. The levels near Dilshad garden and NSIT campus, Dwarka were slightly above the prescribed limit. In 2011, Centre for Science and Environment had found extremely high noise levels in areas like marble market in Keerti Nagar — 125 leq dBA; Meena Bazar, Jama Masjid — 103 leq dBA; Anand Vihar — 108 leq dBA; Sangam Vihar — 114 leq dBA. These areas are not monitored by CPCB or DPCC.

Saigal's petition has sought installation of screens

along both sides of the road to block the noise. Following this, the bench directed DPCC to file a report on noise levels in Panchsheel Park and asked the traffic police to find out if there is a way to regulate movement of heavy vehicles there. It has also directed PWD to provide sound barriers on the road adjoining the colony.

Experts say that noise pollution needs immediate attention but our policies do not focus on regulating noise. "Our monitoring or actions cater to specific events like festivals or events. Noise leads to a range of health impacts starting from hearing issues to cardiovascular conditions. Unfortunately, our

urban design also doesn't factor in the need for noise barriers," said Anamita Roy Chowdhary, executive director, research and advocacy, Centre for Science and Environment (CSE).

At present, DPCC doesn't have the infrastructure to monitor data in real time. "We will upgrade our infrastructure in a few months so that even noise pollution can be assessed in real-time. The best way to deal with this pollution is to use good double-glazed glass for windows or sound barriers. The levels are higher at Panchsheel Park probably because of its proximity to the flyover," said M P George, senior scientist, air and water lab, DPCC.

37% of Western Ghats now no-go zone for industry

MoEF Notifies 60,000 Sq Km 'Ecologically Sensitive Area'

Vishwa Mohan | TNN

New Delhi: The ministry of environment and forests (MoEF) has finally notified nearly 60,000 sq km area of the Western Ghats across six states as an Ecologically Sensitive Area (ESA), making it a no-go zone where activities like mining, quarrying and setting up thermal power plants and other heavily polluting industries will be banned with immediate effect.

Building and construction projects of 20,000 sq m area and above and township and area development projects with an area of 50 hectares and above, or with built up area of 1,50,000 sq m and above, will be prohibited. Hydroelectric power projects and windmills will, however, be allowed under strict green norms and monitoring.

The ministry, in its notification issued on Wednesday, annexed a comprehensive list of state-wise, district-wise and taluka-wise villages



GREEN PUSH: Hydroelectric power projects and windmills will be allowed under strict green norms and monitoring

in the ESA and posted the details on its website while asking the six states — Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu — to implement the order strictly. "In case of any violation, appropriate legal action under the Environment (Protection) Act, 1986 will be taken," said the notification.

The ESA — roughly 37% (59,940 sq km) of the ghats — has been earmarked on the basis of the recommendation

of a committee, headed by K Kasturirangan (Planning Commission member), which had submitted its report to the government on April 15. The MoEF will soon constitute a panel to monitor the implementation of the report in a time-bound manner.

Though any new project or expansion will be banned with immediate effect, the applications for getting various environmental clearances submitted before April 17

will, however, be processed as per earlier rules. April 17 is fixed as the cut-off date because the panel had made its report public on that date. The panel had identified the more or less contiguous area as natural landscape having high biological richness, low forest fragmentation and low population density. It also found that this area also has World Heritage sites and tiger and elephant corridors.

The notification asked the states to follow the "non-tolerance" policy towards prohibiting "highly interventionist and environmentally damaging activities", specifically the Red (high-polluting) category of industries like thermal power, oil refinery, petrochemical, cement, sugar, pesticide, zinc smelting, leather and integrated steel plants among others.

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

The Times of India,
Delhi dated
November 15, 2013

The Economic Times,
Delhi dated
November 15, 2013

Deccan Chronicle, Hyderabad dated November 16, 2013

Japan backs down on GHG emission cuts

PRAMILA KRISHNAN | DC
WARSAW, NOVEMBER 15

Japan, the fifth largest emitter of greenhouse gases in the world, declared in the middle of Thursday night at the UN climate change convention in Poland that it would reduce its carbon dioxide emissions by 3.8 per cent by 2020. By dawn, however, it had to face the wrath of green activists who congregated at the conference stadium to demonstrate and accuse Japan of manipulating figures to make its announcement, which they dismissed as "no big deal".

This announcement replaces Japan's earlier commitment that it would reduce 25 per cent of its



● Fukushima nuclear accident forces Japan to turn to fossil fuel which is why it has scaled down its greenhouse gases emissions cut.

emissions from 1990 levels. The declaration gains significance as Japan has been phasing out its nuclear facilities and was increasingly depending on fossil fuel for its energy needs.

Climate Meet Won't Talk Farm in Ongoing Session

India, others claim victory, experts feel it could prove counterproductive

URMIA GOSWAMI
WARSAW

India and other developing countries have succeeded in ensuring that there will be no discussion on agriculture in the ongoing climate change negotiations in Warsaw, a development that could well prove a pyrrhic victory.

Discussion on ways to deal with the impact of climate change on agriculture, such as variations in rainfall and temperature, has now been pushed for talks scheduled for mid-2014. The discussions, which will be taken up by the United Nations' climate change technical committee, will focus on adapting to climate change and emission reduction that such measures are likely to entail.

India, China and several other developing countries are of the view that postponing the discussion on agriculture has effectively stymied efforts by industrialised countries, particularly the European Union and New Zealand, to focus on emission reduction in agriculture.

Analysts are, however, concerned that this latest move by the developing countries could prove counterproductive. For now, the group of developing countries, G-77 and China, are unified in their approach to agriculture and climate change. However, there are concerns that delaying the discussions could weaken the alli-



Developing nations feel that postponing has stymied efforts by industrialised countries to focus on emission reduction in agriculture

ance. In the past, not all developing countries have agreed with the view that the focus on agriculture should be limited to adapting to the impacts of climate change. At the Doha round of negotiations in December last year,

least developed countries such as Bangladesh and Malawi supported the idea of discussing the impact of agriculture on climate change, which would include emission reduction measures.

The differences that came to the fore at the Doha round of negotiations last year were bridged at the Bonn talks earlier this year. This happened as India and other developing countries agreed to ex-

pand the ambit of discussions to include emission reduction benefits that could accrue from adapting to climate change. Experts say India and other developing countries have already managed to limit the ambit of the discussion on agriculture at Doha and Bonn. So refusing to take forward the talks at Warsaw is unlikely to prove beneficial. Instead, it is feared that delaying the talks could reopen differences within developing countries.

"India says that it faces a huge adaptation challenge. Why doesn't it begin talks on adaptation, instead of refusing to talk?" a person involved in the negotiations asked. "Yes, there are concerns about emission reduction but India can clarify that issues like soil carbon and carbon offsets are not on the table. The least developed countries have shelved their discontent — but for how long? That is the key question."

There is also concern that the Food and Agriculture Organisation-sponsored Climate Smart Agriculture Alliance could impact the way in which many developing countries view agriculture and climate change. The alliance includes the United States, the Netherlands and South Africa among other countries. The forum will meet in South Africa next and formulate its position on climate change and agriculture.

*The Times of India, Delhi dated
November 16, 2013*

The Lalit first warned in Feb, says DPCC

Charged With Many Violations

Jayashree Nandi | TNN

New Delhi: The Delhi Pollution Control Committee (DPCC) has ordered The Lalit to close with immediate effect due to various violations. The order quotes violations like not constructing an effluent treatment plant on site and no rainwater harvesting for re-charging of groundwater. The outlet connection to the sewer can also not be accessed, and the DPCC inspection team has found the filter press (to separate liquid waste) defunct.

"It's been almost a year that we have been giving them warnings. But they are not serious at all, they have not even shown an urge to improve. There is no sewage treatment plant (STP). The staff there couldn't even show us the outlet through which sewage is discharged," said a DPCC official who inspected the hotel.

DPCC had issued a show-cause notice to the hotel on February 12.

Pollution control officials also had a meeting with the hotel's staff on April 3, 2013. On June 11, DPCC chairman decided to carry out another inspection to check if there is any progress. This was done on August 1 and it was found that an effluent treatment plant was installed but it was not functioning properly.

The inspection also found that rainwater harvesting was

not being done, there were three borewells for extracting groundwater, and a solar water heating system order was placed but not installed and some such discrepancies.

DPCC gave them time till 30 September to rectify its deficiencies and get back on the progress. The Lalit replied to DPCC and submitted purchase orders of a STP on the basis of which DPCC conducted a final inspection on October 23.

'There is no sewage treatment plant. The staff there couldn't even show us the outlet through which sewage is discharged,' said a DPCC official who inspected the hotel

"But we did not see any progress. We had to give them a closure order because the violations are quite serious and as a five-star hotel with more than 500 rooms, they should be responsible for the pollution," the DPCC member added.

The closure order states that the hotel has failed to honor the MoU signed with Delhi's environment department, which envisaged the installation of a STP for treating the entire waste water generated by the hotel by September 30.

Deccan Chronicle, Hyderabad dated November 17, 2013

Climate shifts get storms to the Bay

AMAR TEJASWI | DC
HYDERABAD, NOV. 16

Climate change leading to alterations in the wind systems of the Pacific Ocean could be causing tropical cyclones in the Bay of Bengal.

Scientists believe that changes in the wind systems of the Pacific Ocean, due to the 'La Nina' effect are actually causing cyclonic systems to move towards the Bay of Bengal.

Most of the cyclones that have hit the coast over the last couple of months have had their genesis in the Pacific Ocean.

Experts also say that there is evidence that the Pacific Ocean is getting warmer in recent years, and this is also a factor in increased activity.

Cyclones Phailin, Nari

and Haiyan originated in the Pacific Ocean and weakened after hitting the Philippines and Vietnam.

However, the weakened systems continued to move into the Andaman Sea and Bay of Bengal and then were reinvigorated by the moisture and temperature they encountered there.

Notably, it is also quite easy for weakened cyclonic systems to move into the Andaman Sea owing to the extremely Malay Peninsula that needs to be crossed. Scientists say that the primary reason

behind Pacific cyclonic systems moving towards the Bay of Bengal is La Nina, the other extreme of El Niño Southern Oscillations.

■ Page 2: Scientists: Pacific is warming up

LIST OF STORMS IN 2013

Month	Name	Landfall
May	Cyclone Mahasen	Bangladesh
May	Depression BoB 2	West Bengal
July	Depression BoB 3	West Bengal
August	Land depression 1	West Bengal
October	Storm Phailin	Odisha
November	Depression BoB 3	Tamil Nadu

Deccan Chronicle, Hyderabad dated
November 17, 2013

Scientists: Pacific is warming up

DC CORRESPONDENT
HYDERABAD, NOV. 16

Moisture, vorticity and sea surface temperature are the major factors aiding cyclones in the Bay of Bengal.

Research conducted by scientists suggests that changed wind patterns due to La Nina favour moisture accumulation over the Bay of Bengal which supports enhanced convection. Prof. V.S.N. Murthy, chief scientist, CSIR, National Institute of Oceanography, said, "This time we have seen three big Pacific cyclones enter the Bay of Bengal and re-energise. Changes in the wind systems of the Pacific Ocean are creating favourable conditions for cyclones to shift towards Bay of Bengal."

Scientists also say that Pacific Ocean warming up is another factor. Prof. S.S.V.S. Ramakrishna, head of department, meteorology and oceanography, Andhra University, said, "It has been noted that the Pacific Ocean is getting warmer in recent years, which is giving rise to a lot of cyclonic activity which is then pushed towards the Bay of Bengal. This is due to a change in currents there and plate tectonic activity."

● The depression to be named Helen, however, fizzled out and wasn't categorised as a cyclone by the Indian Met Department although the US Navy Typhoon Warning Centre did.

The intensity of cyclones in the Bay of Bengal is increasing due to this. Last year, Cyclone Nilam had its origins in the Pacific Ocean.

The NASA also noted the reawakening of the Haiyan storm. "The former tropical storm known as 30W that moved from the western North Pacific Ocean basin into the northern Indian Ocean appears to be ramping up for a short stint at depression status again," the professor added.

The depression to be named Helen, however, fizzled out and wasn't categorised as a cyclone by the Indian Meteorological Department although the US Navy Typhoon Warning Centre did.

Deccan Chronicle, Hyderabad
dated November 19, 2013



The Times of India, Delhi dated
November 18, 2013

India skips mention of disasters at climate meet

No Reference To Odisha, U'khand At Warsaw Conference

Vishwa Mohan | TNN

Warsaw: The world may be looking at India for its response to what happened recently in Odisha and Uttarakhand due to natural disasters which were results of climatic extremes, but there was not a word on these two incidents from the Indian side, comprising official negotiators, here at the UN climate change conference during the first week of this mega event that will culminate in a global climate deal in Paris in 2015.

Neither the Indian government's open statement nor the negotiators' remarks during various rounds of discussions mentioned how the country was vulnerable to such climate disasters caused by global warming.

The Philippines delegation had left participants from 195 countries stunned on the opening day of the conference on November 11 when the delegation head, Yab Sano, broke into tears while putting across his government's



Observers don't know whether it was a result of negotiators' disinterest or a ploy to keep the sensitive issue of natural disasters on hold

point of view referring to Typhoon Haiyan. Typhoon Haiyan, which struck the country two days before the start of the conference, has left over 10,000 dead.

Observers who have been tracking developments during the 19th edition of the Conference of Parties (COP) at the National Stadium in the heart of Poland's capital are puzzled. They don't know whether the Indian move

was a result of negotiators' disinterest or a ploy to keep the sensitive issue on hold till environment minister Jayanthi Natarajan arrives to take part in the high-level ministerial round. It is learnt that Natarajan, who is expected to arrive on Tuesday, may mention Odisha and Uttarakhand in her formal statement a day later while asking the developed countries to look at various concerns of the developing world. The issues may be raised to tell the world that New Delhi is conscious of how climate change due to global warming is causing disasters beyond boundaries.

The silence of Indian negotiators, so far, on the disasters which left over 5,000 dead in Uttarakhand and lakhs homeless in Odisha left Indian NGOs both intrigued and nervous. They said the Indian side could have told the world that the country too was a victim of serious natural disasters.

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

Green funds worry nations

■ India in favour of quick release of money to tackle emission cuts

PRAMILA KRISHNAN | DC
WARSAW, NOV. 18

Developing countries including India have asked developed nations to come out with a timeline to provide the green climate fund (GCF) without any delay.

There are expectations that they will urge the rich countries to provide at least a small percentage of the allotment before winding up the UN climate change summit in Warsaw.

Negotiators said that they do not want the Warsaw summit to end like yet another talk game. They said they would push developed nations to finalise the roadmap for issuance of the GCF so that actions relating to cutting down of emissions can be taken soon.

Speaking to DC, one of the negotiators for India said, "The whole game of providing \$100 as GCF by developed countries to developing nations before 2020 should not go on and on. We want them to arrive at a roadmap to give the money. We will

urge them to talk clearly about the allotment during this week." When asked about the proceedings in the last one week, negotiators said that the talks were not concrete.

"We have spent almost three to four hours every day in seminars without result. As ministers from all countries will arrive in a day or two, we expect things to fall in place soon," they said.

Ravind Shankar Prasad, key negotiator for India and joint secretary in the union environment ministry said, "Developed countries want to delay the flow of funds for the loss and damage due to environmental calamities in developing countries."

"They want a separate window for the loss and damage funds. But the developing nations are very particular that there is no need for a new window. The funds can be given along with the GCF," he said. He added that opening a new window is a time consuming process and there is no need for this.



Green activists from different countries stage a protest in front of the ministry of economy building in Warsaw, Poland, against the World Summit on Coal on Monday.

— DC

The Times of India, Delhi dated November 19, 2013

Negotiators pin hopes on rich nations' bounty at climate talks

Vishwa Mohan | TNN

Warsaw: Though the ongoing climate talks has failed to bring cheer to developing countries as rich nations have, so far, not made any commitment to set aside a corpus to battle global warming, hopes spring eternal for the negotiators. They are expecting that the high-level ministerial round may throw up a pleasant surprise, where

developed countries would finally pledge a sum — \$20-\$30 billion annually — for assisting poor nations towards their adaptation and mitigation efforts. Ministers from various countries start arriving here from Wednesday.

The United States' stand to link assistance to market-based mechanism, where it wants private players must play a key role without depend-

ing on public funding, continues to dominate the space, but inclination of other developed countries — largely from Europe — to provide aid is fuelling the hope.

Indian negotiators got a hint that some of the developed countries may try to impress upon the US so that the talks would not send a negative signal before the crucial climate pact that is slated to be final-

ized in Paris in 2015. "There have been discussions on enhanced action in the field of adaptation, mitigation, finance and technology transfer during structured dialogue. But in terms of action, we have not seen much coming further. We have not seen much movement on the implementations of the earlier decisions," said an Indian negotiator. He rued that though the participants gath-

ered here to work on implementing the Kyoto Protocol.

There is a growing belief that the developed nations may not be inclined towards a breakdown of talks. The pledge for \$100 billion per annum beginning 2020 — meant for reduction of emissions by developing countries — has caused heartburns among the rich nations who want a market-based mechanism that advo-

cates private players to take the lead without government's direct role.

Participants from developing countries, however, believe that the instead of settling for \$100 billion annual fund, developed countries like the UK, France, Canada, Japan and Germany may commit \$20-\$30 billion for next couple of years.

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

The Times of India, Delhi dated November 19, 2013

India, US not on same page over fate of refrigerant gas

Warsaw: Controversial issue of handling Hydrofluorocarbon (HFCs), or climate-damaging refrigerant gas, is unlikely to get resolved in near future as both India and the US stuck to their respective positions on Monday, making a strong pitch for support from other nations. While India insisted that the issue must be kept out of the Montreal Protocol as HFC is not an ozone-depleting gas, the US opposed it. Seeking to clarify the issue, US special envoy for climate change Todd Stern said, "The institution that is born to do this and has jurisdiction over HFCs is the Montreal Protocol. Our view is let's not stand on ceremony. There are some countries that are to some extent standing on ceremony when they say no should be done under the UNFCCC."

Vishwa Moha

*The Economic Times,
Mumbai dated
November 20, 2013*

Hyundai's Hydrogen-Powered SUV in 2014

Tom Krisher

For years, the joke in the auto industry was that a mass-produced car that runs on hydrogen was always a decade away. That will change next year when Hyundai starts selling a Tucson SUV powered by a hydrogen fuel cell. It will be the first mass-market vehicle of its type to be sold or leased in the US.

"These things are now ready for prime time," John Krafcik, Hyundai's North American CEO, said last week. His company plans to

announce details of the new Tucson on Wednesday at the Los Angeles Auto Show.

Automakers have been dabbling in hydrogen-powered cars since the 1960s. General Motors announced a test fleet of hydrogen-powered Chevy Equinoxes in the mid-2000s, and Honda leased about two-dozen FCX Clarity models for \$600 per month starting in 2005.

President George W. Bush had allocated \$1.2 billion for hydrogen research. But the programme was largely scrapped by the Obama administration, which focused more on

battery-powered vehicles.

Hyundai now is making Bush's forecast come true, beating other auto companies to the mass market with Tucsons that have electric motors powered by a stack of hydrogen fuel cells. Hyundai plans to start selling the vehicles in Southern California and eventually spread to other areas as filling stations are built. As for filling stations, there currently are nine open to the public in the state. Legislators recently allocated about \$200 million per year for 100 more, to be built by 2023.

Associated Press



Hyundai Tucson

Deccan Chronicle, Hyderabad dated November 21, 2013

China, G-77 nations stage walk out

■ Countries boycotted the meet to put pressure on developed nations to support them

PRAMILA KRISHNAN | DC
with agency inputs
WARSAW, NOV. 20

India on Wednesday asked developed nations to immediately start supporting developing countries facing "loss and damage" due to global warming, after officials from G-77+China staged a walkout from negotiations over funding at the ongoing UN Climate Change talks here.

Placing things in black and white, Indian environment minister Jayanthi Natarajan said the demand of the developed bloc to postpone the dialogue on loss and damage was nothing but an excuse to delay justice. "There is no need for any delay. Loss and damage funds should be worked out here in Warsaw. The developed countries should step up their talks in loss and damage instead of postponing," she said.

Interestingly, India is not completely on the same page with G-77+China on the issue. While the G77+China says that a UN mechanism should be set up to oversee compensation, India suggests that for the time being the issue can be addressed through

Green minister of Poland sacked

DC CORRESPONDENT
WARSAW, NOVEMBER 20

Even as the prestigious UN climate change conference is underway here, Polish government sacked its environment minister Marcin Korolec on Wednesday.

Mr Korolec, who acted as the president of the UN climate change convention for the last one week, announced that he would continue to carry out his duty in the UN summit as directed by the Polish Prime Minister Donald Tusk.

Mr Korolec's dismissal has caused a big excitement at the UN



Marcin Korolec

meet. When Mr Korolec called for a press briefing on Wednesday afternoon media persons gathered in large number waiting to shoot questions. But his talk did not last even for five minutes. In his brief speech he said he wanted to reassure that his responsibilities "remain unchanged" and he would work for the success of the summit.

Indian official said.

The intransigence of the developed nations attracted all round criticism. Philippines commissioner for climate change commission Yes Saro tweeted, "It is the developed country that is stalling. We have had



United Nations Secretary General Ban Ki-moon, right, and Christiana Figueres, left, Executive Secretary of the United Nations Framework Convention on Climate Change present bamboo bicycles, made by Evelyn Ohenewaa Gyasi, centre, in Ghana during a session of United Nations Climate Change Conference. — AFP

enough, so we walked out".

International coordinator Harjeet Singh of Disaster Risk Reduction & Climate Adaptation, ActionAid International, argued that USA, EU and Australia "remain blind to the climate reality

that's hitting us all and poor people and countries much harder".

"They continue to derail negotiations in Warsaw that can create a new system to deal with new types of loss and damage such as sea level rise, loss of territory, bio-

diversity and other non-economic losses more systematically," he said.

The Indian officials were not present when the walk out happened but Indian green minister Ms Natarajan said that India fully supported the walk out.

The Economic Times, Delhi dated November 21, 2013

Consuming Responsibly

About 70% of Unilever's carbon footprint is related to consumer use, and its hold over their behaviour is weak. It now wants to change that, reports **Naren Karunakaran**

Companies & Social Movements



Patagonia

Leverages social movements to its benefit. Its 'don't buy this jacket' campaign gives the water used to make its popular jacket and its carbon footprint. The message: buy it you must, use for long and recycle

Unilever's Project Sunlight

Through films and other mechanisms, it hopes to spark and motivate consumers to change the way they consume



Nike+ campaign

An online, fitness-inspired movement, dubbed as the world's largest running club. Flaunts a membership of over 7 million



Three years after launching its Sustainable Living Plan (SLP), a celebrated blueprint to double its business by reducing its environmental footprint by 2020, Anglo-Dutch FMCG giant Unilever is now taking a studied leap into the enticing, yet seemingly treacherous, realm of creating and fostering an entire social movement. Its 'Project Sunlight', launched simultaneously across five international markets—India, Indonesia, US, UK and Brazil—yesterday, hopes to induce mass behaviour change and nudge consumers towards responsible consumption.

It has all the ingredients to spark and motivate consumers: for example, a 4-minute film made by award-winning director Errol Morris that subtly, without being preachy or loud, conveys the need to push for change, through couples expecting their first child; or, a host of mechanisms to engage, spur action and proliferate advocates.

It's in keeping with a new 'purpose' integrated into the company's business strategy last year. "We are striving to make sustainable living commonplace," explains Hemant Bakshi, executive director-home & personal care, Hindustan Unilever.

Importantly, the endeavour also seeks to address a deep value chain conundrum faced by Unilever. Only about 3% of the company's carbon footprint can be attributed to its manufacturing processes; the bulk, or 68%, is directly related to con-

sumer use, over whom its hold is nebulous, at least in terms of, for instance, how and how much of water or energy they use.

Project Sunlight, therefore, is seen as a mould-breaking as businesses, especially multinationals, have just about started flirting with the idea of seeding and driving social movements. John Elkington, corporate sustainability guru, has been debating this topic, on his blog, for a few weeks, and asking the question: can businesses build legitimate social movements? The answer, yes, but with caveats.

Brands And Belief

Trust and legitimacy are, expectedly, pre-requisites, as Bakshi also likes to emphasise. Movements engineered by companies, or brands, that don't find a trust resonance among audiences can founder.

Unilever has had a tradition in trust building, even going back to the time of founder William Lever 130 years ago, when he wanted to make 'cleanliness commonplace' with Sunlight soap. Lever even built an entire village, Port Sunlight, to show it was possible to provide factory workers with good living standards and also make money as a company.

While Project Sunlight is a tribute to the founder, Unilever's present CEO Paul Polman has been building on the foundation with more sophistication. Unilever's SLP addresses the more complex challenges of today, be it in improving hygiene habits (224 million reached by 2012) or in supply chain transformation (100% palm oil already sourced sustainably).

The big challenge now is to coax consumers to behave in a certain manner. There are a few companies that have taken

the social movement route to engineer change and also foster brand loyalty, notable sports good major Nike and clothing company Patagonia (See graphic).

In a recent report titled 'To Tweet or not to Tweet: What Business Can Learn from Social Movements?', Paula Goldman, an anthropologist with Omidyar Network, an impact investing firm, explains how brands like Patagonia tap into social movements and weave collective action directly into their brand experience. The report talks about the changing consumption trends, and how more and more people are demanding more than mere products or services. "They want a brand they can believe in," it says.

'Cool Thing To Do'

Project Sunlight, therefore, weaves in Unilever brands into the campaign—Lifebuoy and hand washing, for instance. Helping people make more conscious brand choices is integral to it. "We want to leverage our brands too," says Bakshi.

It is also significant that a new global study—The 2013 Aspirational Consumer

A 4-minute film subtly makes a case for change through couples expecting their first child

Index, by BBMG, GlobeScan and Sustainability—spy the aspirational consumer, defined by their love of shopping, looking anew at consumption.

For this category of consumers—the aspirational, amounting to 2.5 billion or one-third

of global consumers—the sustainability proposition is changing from being "the right thing to do" to being "the cool thing to do". Brands, therefore, it is indicated, are now in a position to harness this trend and usher change in value systems. And that precisely is what Project Sunlight is attempting to do.

Unilever's in-house research, conducted in August 2013, also threw up similar, interesting results. It was revealed there are inflection points when people are more open to change. "Child birth is one such inflection moment," says Bakshi.

At this juncture, the start of a new family, parents are at their thinking best and more likely to re-evaluate how they live and bring in changes that benefit their children, and future generations. The survey revealed 92% of parents were motivated to change some aspects of their lives when their first child arrived.

Seven of 10 parents also agreed that, unlike adults who tend to see problems, children look at the brighter side. About 81% of parents were also surprised at how much their children knew and cared about the environment. Errol's film therefore maintains this vein—about seeing the future in a more positive and optimistic way.

The community of Unilever changemakers is being built at www.projectsunlight.co.in. "Our survey told us a majority wanted to alter the way they live but didn't know how to. To make sustainability commonplace, we thought it necessary to create this forum," says Bakshi. "It's one way of tying up consumer aspirations with responsible conduct."

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The Times of India, Delhi
dated November 21, 2013

Developing nations walk out over climate fund pledge

Support Protest, Says Jayanthi

Vishwa Mohan | TNN

Warsaw: In a rare show of strength against rich nations, the G77+China Group, comprising almost all developing countries, walked out of the negotiations on the crucial Loss and Damage (L&D) issue on early Wednesday. The move sent a strong message that poor nations are not going to give elbow space to the US-led group unless they get commitment over financial aid.

Though the Indian representative was not there in the contact group meeting where the discussion on L&D was held through the night at the National Stadium here, New Delhi, accepted the decision taken by the G77+China Group.

The BASIC (Brazil, South Africa, India and China) Group presented a united stand over all the critical issues during the negotiations, ranging from L&D mechanism to the Green Climate Fund. They also supported the move of G-77+China over L&D and the bloc's walkout early Wednesday morning.

"We totally agree with the G-77 position. This is a very weak draft and we support the walkout. It is extremely diluted and makes no commitment to the



UN secretary-general Ban Ki-moon (right) and executive secretary of the UNFCCC Christiana Figueres at the UN climate meet in Warsaw

loss and damage. This is not something that we can accept. We are part of the G-77," Indian environment and forest minister Jayanthi Natarajan said.

Meanwhile, in a surprising move, the Polish government on Wednesday sacked its environment minister Marcin Korolec, who heads the country's delegation at the climate talks. Though Korolec will remain the country's representative at the talks, the move has put question marks over Poland's commitment to negotiations.

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

India sticks to stand on refrigerant gas

Vishwa Mohan | TNN

Warsaw: India is not going to dilute its stand over the controversial HFC (climate-damaging refrigerant gas) issue and will strongly oppose any move by US or other developed countries during the ongoing climate talks in view of domestic concerns. New Delhi is clear that any change in its position will not only affect the common consumers but also several critical sectors, including defence.

Visiting environment minister Jayanthi Natarajan reiterated India's stand, saying, "Any move to shift HFCs to Montreal Protocol from the UNFCCC will call for an amendment." She also emphasized that the decision would be taken only by consensus under the UNFCCC convention, signaling that any move by handful of rich nations, led by the US, is not acceptable to India. Her remarks came barely two days after the US special envoy for climate change Todd Stern claimed here that the Montreal Protocol had jurisdiction over the HFCs.

Using the same platform here on Wednesday, Natarajan told the international press that though HFCs are greenhouse gases; these are not ozone-depleting substances.

For the full report, log on to



Deccan Chronicle, Hyderabad dated
November 22, 2013

Arctic ice melt can affect climate in India, say experts

AMAR TEJASWI | DC
HYDERABAD, NOV. 21

India and France will lead a collaborative study of 10 countries into the adverse effects of Arctic polar ice melting on the Southwest monsoon.

It has long been speculated that the rapid melting of ice in the Arctic Circle could change the dynamics of the monsoon system in the country, but specific knowledge still remains elusive due to lack of proper scientific studies.

Scientists say that the troposphere could be acting as a bridge between the Arctic region and the Indian subcontinent to affect the monsoon. The Southwest monsoon contributes most of the rainfall in the state.

India had prepared a concept note on the subject earlier this year, which was discussed with



This is the first image of the Earth taken by the Mars Orbiter Spacecraft on November 19 from an altitude of 67,975 km with a resolution of 3.53km. The image was released by the Isro

th other countries.

Dr Shailesh Nayak, secretary, ministry of earth sciences, said on Thursday that India and France would spearhead the 10-country mission to explore the climate anole

of the polar ice caps melting. Dr Nayak was speaking at the International Workshop on Geospatial Mapping and Risk Reduction at the Indian National Centre for Ocean Information

Services (INCOIS). He added, "The Arctic directly affects us and if there is heavy melting of ice there, there is a direct affect on our climate."

Dr Sathesh C. Shenoy, director, INCOIS, further explained that the melting of ice in the Arctic region was leading to warming of the troposphere, which is the lowest portion of the Earth's atmospheric systems.

"Warming of the North Atlantic supports the convection system which transfer the heat anomalies to the troposphere. The upper air circulation then gets perturbed. That perturbation generates waves in the atmosphere which can travel thousands of kilometres," said Dr Shenoy.

Scientists observed that the decadal cycle of the Southwest monsoon system correlated with the North Atlantic current

The Times of India, Delhi dated
November 21, 2013

The Times of India, Delhi dated
November 22, 2013

Green groups walk out of summit over funds deadlock UN alarm over nitrous oxide

Warsaw, Nov. 21: Levels of nitrous oxide, a gas that both depletes the ozone layer and stokes global warming, could nearly double by mid-century, the UN warned on Thursday.

"We need all hands on deck to combat the serious and significant increases in N₂O (nitrous oxide) levels in the atmosphere," UN Environment Programme (UNEP) chief Achim Steiner said in a report coinciding with the world climate talks in Warsaw.

Analysis by scientists from 35 organisations found that NO₂ is now the most important ozone-depleting gas and the third most powerful greenhouse gas being emitted into the atmosphere, UNEP said.

On current trends, NO₂ concentrations will rise by 83 per cent by 2050 compared to 2005, the experts found.

Meanwhile, six green groups walked out of UN climate negotiations on Thursday, declaring



Greenpeace activists hang a yellow banner calling for the release of their members held in Russia following a protest in the Arctic, in Warsaw on Thursday during the UN Climate summit.

— AFP

the ailing talks were "on track to deliver virtually nothing". The negotiations, which opened on November 11, entered their penultimate day on Thursday with the two sides still squabbling over funding for poor nations to deal with climate change. — AFP

India urges nations for climate change funds

PRAMILA KRISHNAN | DC
WARSAW, NOV. 21

Environment minister Jayanthi Natarajan on Thursday urged the UN climate talks high-level segment in Warsaw to deliver on climate change funds, while reminding the delegates that climate change takes a heavy toll on the food security of any developing country and its poverty alleviation goals. And the farmers — most of them are subsistence farmers — bear the brunt, she said.

Ms Natarajan said it was not enough for the Warsaw meet to "simply create" institutional arrangements like the Green Climate Fund (GCF) and leave them with empty coffers. And it was also not right to point fingers to private funding



because public finance should be the primary source. "There is need for a clear road map on provision of finance for 2013-15, 2015-17 and then up to 2020. We have called for creating a new window in the GCF for funding Intellectual Property Rights (IPR) protected technology to developing countries by paying the difference in cost," she said.

'Delink business from global warming issues'

Jayanthi Slams Rich Nations For Bid To Lower Emission Targets

Vishva Mohan | IAN

Warsaw: Hitting out at developed countries for backtracking on their commitments to fight climate change, India on Thursday used the UN climate talks platform to tell the rich nations not to treat global warming issues with a "business perspective of providing markets to domestic

New Delhi also expressed dismay at decision of some of the rich nations like Japan, Canada and Australia to scale down ambition and lowering of targets of emissions of greenhouse gases.

Articulating the country's stand over climate change, environment minister Jayanthi Natarajan appealed to rich nations to take lead in fighting climate change, specifically when nothing concrete has emerged so far from the ongoing talks. "Warsaw must

India backs protesting NGOs in Warsaw

India on Thursday expressed its solidarity with the NGOs who walked out from the ongoing climate conference and said it was a matter of deep concern for New Delhi that there has been absolutely no progress in any of the issues of interest of developing countries. Reacting to an episode where most of the NGOs, including from India, walked out protesting against inaction of the developed countries in combating climate change and blocking progress in many important areas, environment minister Jayanthi Natarajan said, "Discussions on crucial issues of direct importance to developing countries like Finance, Technology and Loss and Damage have remained deadlocked due to lack of will by developed country Parties". — IAN

act... we must act and deliver here and now," said Natarajan, going beyond her written speech while addressing a gathering of ministers' representatives from 186 countries at the National Stadium here.

Though her speech stuck to what has been New Delhi's stated position for long, she chose the platform to raise the controversial issue of climate-damaging HFC gases and let the gathering know what India thinks about it and put it out as part of her formal written speech. In a remark that may not go down well with the US, particularly on HFCs' issue, Natarajan said, "The issue should not be seen from a business perspective of providing markets to domestic companies."

For the full report, log onto www.timesofindia.com



The Economic
Times, Mumbai
dated
November 23,
2013

Protesters Seek Logjam at Warsaw Climate Negotiations to End Soon

URMI A GOSWAMI
WARSAW

The two-week long climate negotiations at Warsaw are in the final stretch, with ministers working to beat the clock and build a consensus on the road to take. Along the way, the Warsaw talks have seen their fair share of protests — some big and noticeable, and the other, small reminders that the world must act now, for climate change is real.

The talks started off with Philippines climate commissioner and negotiator Nadev "Yeb" Sano's announcement that he was "fasting" for the duration of the Warsaw talks in "solidarity" with his countrymen who are now struggling for food back home. Sano's dramatic gesture was an attempt to remind the world about the devastation that Typhoon Haiyan, aggravated by unchecked climate change, had caused.

"What my country is going through as a result of this extreme climate event is madness. The climate crisis is madness... we can stop this madness, right here in

Warsaw," he said.

As the days unfolded, it became clear that Sano's call to "stop this madness" was for all practical purposes falling on deaf ears. Sano called for "concrete pledges" to the Green Climate Fund, a dedicated UN-sponsored fund that will channel funding from developed countries to developing ones to reduce their climate change emissions and adapt to the impacts of climate change and for "real ambition on climate action in accordance with the principles of the convention". Irony, given that industrialised countries are yet to commit any specific amounts or timelines on capitalising the Fund and since Sano's fast, Japan and Australia have moved back from their commitments to reduce emissions.

The Philippine negotiator may not have moved negotiators, but his call echoed among civil society representatives. Soon, many young volunteers and activists stepped up showing solidarity with the Philippine negotiator.

If there was the drama of Sano and his fast at one end of the spectrum then there

were the quotidian protests. The daily reminders from civil society — The Change Chocolate that volunteers handed out to delegates, a small nudge that time was running out and governments needed to step up the pace of their talks to small demonstrations near key meeting rooms asking negotiators to "stop going around in circles" instead to "lead the way".

From the fasting Philippines negotiator to civil society groups, everyone is angry at lack of commitment from corporates, developed countries

government. The high level of business engagement at the current round of nego-

tiations, and the Polish government's decision to allow the World Coal Association to hold its two-day conference coincidentally as the climate change conference was underway.

Nearly 3,000 activists and supporters marched through Warsaw showing concerns about the level of business engagement with the talks, the slow pace of progress, and the decision by UN climate chief Christiana Figueres to attend the World Coal Summit. Greenpeace activists hoisted banners protesting the use of coal on top of Poland's economy ministry in Warsaw, even as the coal summit got underway. Large banners that read "Who rules the world? Fossil industry or the people?" and "Who rules Poland? Coal industry or the people?" adorned the government building as the coal summit began. Nearby, another set of activists, put up a massive set of pumped up blackened plastic lungs, a grim reminder of the pollution caused by the coal industry.

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*The Times of India, Delhi
dated November 23, 2013*

Bhutan's taxis, govt cars set to make way for electric vehicles

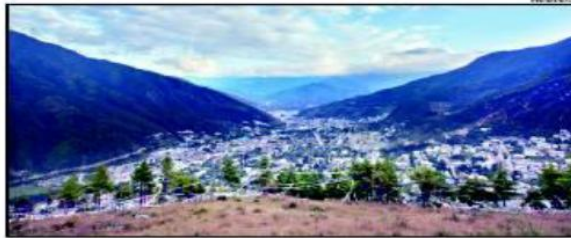
Surojit Gupta TNN

Thimphu: Bhutan has drawn up ambitious plans to replace its taxis and government vehicles with electric cars in a bid to make the national capital Thimphu an electric vehicles hotspot and emerge as a global centre for development of green technology.

It will replace the 2,500 taxis in Thimphu with electric cars and also phase out fuel-powered government vehicles used by senior cabinet ministers and officials.

The government has held talks with Japanese car maker Nissan and leading United States electric vehicle manufacturer Tesla.

"Everywhere in the world it has been difficult because distances are longer and price of electricity is not cheap and there is lack of political will. Here in thimpu distances are very short, price of electricity is the cheapest in the world and political will is unto us. So we are confident that electric vehicles can take off here,"



Tshering Tobgay, PM told a group of visiting journalists.

"We want all government vehicles to become electric. We want the cabinet to start driving electric vehicles. We want tourists to start using electric vehicles whether they are cars or they are buses. And then if it works here we want to become a hotspot for electric vehicles so that we attract R&D here for cars, batteries, motors and the also for transforming transport cargo trucks into electric

vehicles. A whole industry opens up. A whole spectrum of possibilities open and it begins with being environmentally conscious and accepting that electric vehicles are good not just as an alternative but as a preferred choice," Tobgay said detailing the roadmap for the plan.

The aim is to kick off the programme by replacing 100 taxis and some government vehicles by February 21.

Tobgay has met Nissan CEO Carlos

Gohn and a top executive from Tesla. The PM also extended an invitation to Mahindra & Mahindra chairman Anand Mahindra to partner and help Bhutan in its ambitious bid.

Mahindra does good business here. In India there isn't the incentive (for electric vehicles) in Bhutan there is. So, Mahindra is welcome. Tell him he has an open red carpet invitation," Tobgay said. Officials said that talks are on with Nissan for replacing some government vehicles in the first phase.

The bold experiment by the new government in Bhutan which took office in July is an attempt to reduce its costly fuel import bill and generate surplus funds to take care of its desperate development needs.

A taxi on an average uses 800 ngultrum (800) worth of fuel but on electric vehicle the cost will come down to 7 to 10 ngultrum.

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

*Deccan Chronicle, Hyderabad dated
November 24, 2013*

WARSAW MEET

UN climate talks clear hurdle

■ Envoys finally reached consensus after talks went into extra time

Warsaw, Nov. 23: UN negotiators reached consensus on Saturday on some of the foundations for an ambitious, global climate pact, modifying wording in a document that had threatened to derail talks in Warsaw.

In an open meeting, delegates adopted an altered text thrashed out during an hour-long emergency huddle in the Warsaw National Stadium where the talks were rapidly approaching their 24th hour of extra time.

The revised text, yet to be ratified by a joint plenary meeting of all parties, notably changed the word "commitments" for nationally-determined greenhouse gas emissions cuts, to "contributions". Developed and developing nations have butted heads in the



With melting Arctic ice opening up new shipping routes and making once inaccessible mineral resources easier to exploit, the US military is now examining how to prepare for the new environment

— CHUCK HAGEL, US defence secretary

Polish capital ever since the annual round of talks started on November 11, aimed at laying the groundwork for the new pact to be signed in Paris by December 2015. — AFP



FROM RIGHT: Activists wearing masks featuring France's President Francois Hollande, Germany's Chancellor Angela Merkel, United States President Barack Obama and Japanese Prime Minister Shinzo Abe discuss which climate option to take in front of the National Stadium hosting the United Nations Climate Change Conference COP 19 in Warsaw.

— AFP

Deccan Chronicle, Hyderabad dated
November 25, 2013



FIRST GREEN COPTER TESTED IN GERMANY

THE WORLD'S first green helicopter, which is noiseless and emission-free, has been successfully tested in Germany.

The two-seat prototype of the "Volocopter", by the company e-vo, made its maiden voyage on November 17 in Karlsruhe, Germany. The Volocopter is an environmentally friendly and emission-free private helicopter. Instead of one combustion engine, 18 electrically driven rotors propel it.

The flying machine looks something like a helicopter but it is quite different and is intended to be an answer to the green-ling of noisy, vibration-heavy helicopters. The emission-free Volocopter is a vertical take-off and landing manned aircraft.

— Gizmog.com

VANISHING ACT

Acid rain caused extinction

■ Ozone depletion added to the ancient mass disappearance

Washington, Nov. 24: Acid rain and ozone depletion fuelled extinction of 90 per cent of marine species and 70 per cent terrestrial species around 250 million years ago, a new study has found.

At the end of the Permian period, there was a mass extinction so severe that it remains the most traumatic known species die-off in Earth's history.

Some researchers have suggested that this extinction was triggered by contemporaneous volcanic eruptions in Siberia. New results from a team, including director of Carnegie Institution's department of terrestrial magnetism Linda Elkins-Tanton, show that the atmospheric effects of these eruptions could have been devastating.

The mass extinction set the stage for the rise of dinosaurs. The fossil record suggests that ecological diversity did not fully recover until several million years after the main pulse of the extinction.

One leading candidate for the cause of this event is gas released from a large swath of volcanic rock in Russia called the Siberian Traps.

Using advanced 3-D modelling techniques, the team, led by Benjamin Black of the Massachusetts Institute of Technology, was able to predict the impacts of gas released from the Siberian Traps.

Their results indicate that volcanic releases of both carbon dioxide and sulphur dioxide could have created highly acidic rain, potentially leaching the soil of nutrients and damaging plants and other vulnerable terrestrial organisms.

Releases of halogen-bearing compounds such as methyl chloride could also have resulted in global ozone collapse.

The volcanic activity was likely episodic, producing pulses of acid rain and ozone depletion.

The team concluded that the resulting drastic fluctuations in pH and ultraviolet radiation, combined with an



A villager travels on a motorbike as Sinabung volcano spews volcanic ash in Karo on Sunday. Sinabung volcano in western Indonesia has erupted eight times in just a few hours, "raining down rocks" over a large area and forcing thousands to flee their homes.

— AFP

India wants work on green funds

PRAMILA
KRISHNAN | DC
WARSAW, NOV. 24

Moments after the final proceedings of the UN climate change summit in Warsaw, thanking the UN chair, Indian environment minister Jayanthi Natarajan reminded the world that all the green deals would come true only if the developed nations kept their promises.

Promising that India would keep to the spring-2015 deadline, agreed to at CoP-19, to reveal its emission targets, the minister called upon the rich nations to quickly start their homework on providing their pledged funds to the vulnerable countries.

The Warsaw meeting was seen as a preparatory step to the 194 participating countries signing a legally binding agreement in Paris in 2015 to limit greenhouse gas emissions and also a vehicle for

providing developing nations with finance for losses. India was a major force that pushed the loss and damage finance issues to the fore.

"Unless the rich nations meet their ambitious goals in providing finance, the Warsaw talks would not be a success. If they do not take the lead, the ambitions will stand compromised. The future generation will be happy only if we start to work on the goals which we have set in this summit", Ms Natarajan said.

She said the rich countries should partner with the poorer nations in the vital task of saving earth by sharing technology transfer, capacity building, adaptation strategies. Chief negotiator for India, Ravi Shankar Prasad said India was happy that Warsaw has put in place the loss and damage mechanism.

could have contributed to the end-Permian mass extinction on land.

— PTI

Calm solar cycle causes Earth worries

Washington, Nov. 24: The surface of the sun has been surprisingly calm of late — with fewer sunspots than anytime in the last century — prompting scientists to wonder just what it might mean here on Earth.

Sunspots have been observed for millennia — first by Chinese astronomers and then, for the first time with a telescope, by Galileo in 1610. The sunspots appear in 11-year cycles — increasing to a daily flurry and then subsiding drastically, before amping up again.

But this cycle — dubbed cycle 24 — has surprised scientists with its sluggishness. The number of spots counted since it kicked off in December 2008 is well below the average observed over the last 250 years. In fact, it's less than half.

"It is the weakest cycle the sun has been in for all the space age, for 50 years," National Oceanic and Atmospheric Association physicist Doug Biesecker said. The electromagnetic energy from sunspots impacts the sun's ultraviolet and X-ray emissions. — AFP

*The Economic Times,
Delhi dated
November 25, 2013*

Climate Deal Moves a Step Forward, But Fails to Resolve Major Issues

Warsaw sets a pathway for govts to work on a draft text of a universal climate pact

URMIA GOSWAMI
WARSAW

After almost 30 hours of overtime, the United Nations-sponsored Warsaw climate change talks came to a close with a deal that failed to resolve key contentious issues but managed to keep every country at the table.

The intense-and-sometimes-acrimonious negotiations yielded modest agreement on an international mechanism to address extreme and adverse impacts of climate change in vulnerable developing countries, a way forward on financing for developing countries and a deal to move ahead on fashioning a new global regime to address climate change.

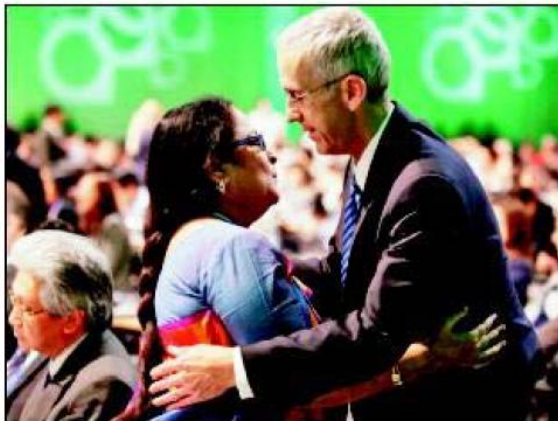
"Warsaw has set a pathway for governments to work on a draft text of a new universal climate agreement so it appears on the table at the next UN climate change conference in Peru. This is an essential step to reach a final agreement in Paris in 2015," said Marcin Korolec, former Polish environment minister, who presided over the talks.

Alluding to the high intensity live wire nature of the talks, Korolec said he is "keeping his fingers crossed for the Peruvian and French ministers" who will preside over the next two rounds of negotiations leading up to a new agreement.

Through Friday night and Saturday, there were moments when it seemed that the Warsaw talks would end in a stalemate or fail to keep everyone on the table as countries remained entrenched in their positions.

The deal, called Warsaw International Mechanism on Loss and Damage, was hammered out after nearly 48 hours of straight non-stop negotiations that saw the use of the now familiar "huddle" and culminated in a compromise that protected the red-lines or non-negotiable positions of all countries, and disappointed many, particularly those from the civil society.

The most contentious negotiations were on the road map to the new global regime. India and its partners in BASIC, along with other developing countries, stressed on the need for ensuring differentia-



Environment minister Jayanthi Natarajan with US climate envoy Todd Stern at UN climate convention in Warsaw on Saturday

tion between developed and developing countries. The industrialised countries opposed tooth and nail, retaining the firewall between developing and developed countries that has formed the basis of climate negotiations for the last 20 years.

China and India, backed by a group of developing nations, stressed on the need for retaining the differentiation that exists. The matter was resolved over two huddles spanning nearly 30 hours of back and forth talks. For both set of countries this was a non-negotiable position.

"It is astonishing that China says that commitments should apply only to developed countries. I feel like I am going into a time warp. That is folly," US lead negotiator Todd Stern said. The US opposed differentiation and pushed for a global regime that is "applicable to all". This view found support of the European Union as well.

A long huddle later, a compromise was found, which "invites" all countries to do "domestic preparations" to put forward their "intended nationally determined contributions, without prejudice to the legal nature" latest by 2015, when the talks will take place in Paris.

The wording papers over the existing differences and allows countries to resume the discussions on issues of how developing and developed countries will be treated under the new regime when negotiations resume next year.

While the EU and US viewed the use of the word "contributions" as against "commitments" (which is the language used in the Convention Framework) as a signal of the "way forward" and a "step away from the Kyoto language", India argued that "the language doesn't make any judgments and the specifics would be discussed next year".

"In my understanding the firewall exists and it will continue to exist," Union environment minister Jayanthi Natarajan said.

But the European Union has a different view. "I hope Warsaw has put the issue to rest. The future regime will include all countries. It is high time to

work on addressing the issue of climate change and not spend all the time addressing issues of the past," EU climate commissioner Connie Hedegaard said.

South African minister Edna Molewa, whose country oversaw the understanding for a new global regime in Durban in 2011, said, "We have not diluted the convention, even a contribution helps us somehow ascertain that those countries who stayed out will now be part of the efforts to tackle climate change. We are going forward."

Coming in the backdrop of the devastating Typhoon Haiyan in the Philippines that claimed the lives of more than 3,000 people and destroyed several towns and habitations, a decision on providing most vulnerable populations with better protection against loss and damage caused by extreme weather events and slow onset events such as rising sea levels was something that the world couldn't afford to put off.

The United States wanted the issue to be part of the efforts to adapt to impacts of climate change, but this was not what the developing countries led by the most vulnerable and least developed countries wanted. The matter was resolved in a "huddle".

The final outcome was a midway point. It put the new mechanism under the Cancun Adaptation Framework but also put a provision for a review in three years' time. Though it fell short of the demands made by the developing countries, it was accepted with the hope that the review would give it teeth and the access to a financial window.

Philippines negotiator Yeb Sano, who announced a fast on the opening day of Warsaw talks, said, "The agreement was undertaken in the spirit of constructive engagement and flexibility. We have moved so far from where we stood originally as a delegation."

He, however, was disappointed at "not have secured resources, or a timeline reflecting urgency of the situation".

Civil society, which had been pushing for such a mechanism since Doha, too was left disappointed.

"Typhoons are increasing. Sea levels are rising. Species are dying. Establishing the Warsaw International mechanism merely upholds the commitment made in Doha last year. It is the barest minimum that was supposed to be achieved at Warsaw on loss and damage anyway. A few rich countries including the US held it hostage till the very end," Harjeet Singh, international coordinator at Action Aid, said.

There has also been some progress on providing long-term finance, although no clear timelines are in place.

The final outcome puts the new mechanism under the Cancun Adaptation Framework, with a provision for a review in three years

*The Economic Times, Delhi
dated November 25, 2013*

Govt Proposes 15,000-km Green Energy Highway

Gas grid to connect consumers in Asia with producers; could be extension of \$7.6b TAPI pipeline

RAJEEV JAYASWAL
NEW DELHI

India is keen to build a 15,000-km gas grid across Asia to connect producers such as Iran, Myanmar, Bangladesh and central Asian nations with big consumers including itself, China and Pakistan, government officials said.

The proposal, which revives prospects of India importing gas from Iran and seeks to extend the proposed pipeline from Turkmenistan, already has the backing of oil minister Veerappa Moily. It was scheduled to be discussed at the SAARC Energy Ministers Meet that was expected early December but was postponed as some ministers were not available, officials said.

Moily has argued that the proposed Green Energy Highway would improve the competitiveness of gas consumers as they will be able to cut energy costs. "This would also be beneficial for the gas suppliers as they would get access to such a large and growing market," he said in a note reviewed by ET.

In the Pipeline

India keen on 15,000-km Green Energy Highway in Asia

Gas grid to link gas-rich CIS countries and Iran with India and China

Grid may subsume the 1,735-km TAPI pipeline project

Discussions are on to revive Myanmar-Bangladesh-India pipeline

Gail willing to build 110-km India-Pakistan pipeline



The proposed grid could be an extension of the \$7.6-billion Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline, which has made significant progress as most of the crucial inter-governmental agreements have been signed, officials said.

State-run gas utility Gail India is already in discussion with Pakistan to supply imported gas across the border through a 110-km pipeline from Jalandhar. The matter is

being discussed with the government of Pakistan because Gail wants sovereign guarantees for the supply, officials added.

"Pakistan is interested in taking about 15 million tonnes of liquefied natural gas. We will supply it from our terminal in Gujarat. We have existing pipelines up to Punjab and the last-mile connectivity can be provided by laying new pipeline," a company executive said.

India is also interested in tap-

ping gas-rich eastern neighbours such as Bangladesh and Myanmar for natural gas supply. It plans to revive a 16-year-old proposal for a 900-km Myanmar-Bangladesh-India pipeline after renewed interest in the project by the two neighbours, officials said.

"The external affairs minister also had a very positive meeting with Myanmar in June about laying the pipeline project that will accelerate economic development of the Northeast," an official said.

Bangladesh, which initially resisted the transnational pipeline project for political reasons, informally expressed its interest in joining the 1,735-km TAPI pipeline. "The project is in an advanced stage of development as the three gas buyers have signed gas sale-purchase agreements with Turkmenistan separately and they have finalised all other commercial terms last month," a senior oil ministry official said.

Government and industry officials say the TAPI project could be extended to rope in several other gas producers and consumers in the region.

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