

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

Business Sustainability News

International

Airports Launch Carbon Certification System

SustainableBusiness.com News

The first emissions program in the US aviation industry is taking off, starting with airports.

At this week's annual conference, *Airport Carbon Accreditation in North America* launched at a ceremony with over 1600 aviation experts in attendance.

Trade association Airports Council International launched the first such certification in Europe in 2009 and has been since expanded into Asia-Pacific and Africa, in 2011 and 2012, respectively.

Airport efforts to track and cut carbon emissions are independently verified and certified on four levels of accreditation: Mapping, Reduction, Optimization and Neutrality.

As the hub for aircraft, airports can address carbon emissions in a variety of ways:

- implement green building practices and renewable energy;
- invest in hybrid and electric service vehicles; providing public transport options;
- work with airlines & air traffic management to reduce runway taxiing times and implement green landing and takeoff processes.

An electric TaxiBot tugs an airplane so it doesn't have to use engines:



Over the past year, 107 airports in Europe, Asia Pacific and Africa have earned Carbon Accreditation, representing 24.2% of annual global passenger traffic.

"Many industries talk about their commitments. We are getting on with the job and delivering genuine, independently-verified carbon reduction year-on-year," note Olivier Jankovec, Director General of ACI EUROPE, Patti Chau, Regional Director of ACI Asia-Pacific and Ali Tounsi, Regional Director of ACI Africa.

Sea-Tac Certified in North America

Seattle-Tacoma International Airport (Sea-Tac) is the first to be certified in North America. Other early adopters that plan to get certified include Aéroports de Montreal, Denver International Airport, San Francisco International Airport, and Portland International Airport.

In the past three years, Sea-Tac reduced carbon emissions 8%, with a goal of 25% at the airport and 50% at the Port of Seattle. They are moving to electric vehicles with substantial investments in charging infrastructure, and have switched to centralized heating and cooling - where air is piped into airplanes parked at the gate, allowing auxiliary engines to be turned off.

These two programs alone will lower carbon emissions by 50,000 tons a year.

Massachusetts' Department of Transportation is developing an in-state "Carbon Neutral Airport Program," starting with Nantucket Airport as a pilot. Based on an energy audit, more than 25 improvements are planned from using solar PV to building retrofits that upgrade the envelope mechanical systems and lighting.

The aviation industry currently accounts for 2-3% of global carbon emissions and air traffic is expected to double by 2020. In 2007, the global airport industry committed to reduce its carbon emissions in a resolution passed at the ACI WORLD Annual Congress & Assembly.

Airlines fought back vociferously when the EU included the industry in its cap-and-trade program a couple years ago. Instead, they voted to have a carbon trading system in effect in 2020 - the first worldwide industry program. But what happens until then and what if the industry doesn't deliver? The EPA may regulate aircraft emissions under the Clean Air Act and has proposed new air pollution standards for large aircraft engines.

Trends are toward all-electric aircraft and those that run on biofuels.

[<ReadMore>](#)

Algae will power Electric Grand Prix

By Will Nichols

The world's first electric Grand Prix series will power its cars with electricity derived from algae as part of its promise to showcase the best in cutting edge zero emission technologies.

Formula E's sustainability manager Julia Pallé told BusinessGreen the championship organizers have signed a deal with U.K. startup Aquafuel to supply generators powered by glycerine, a byproduct of biodiesel that also can be produced from saltwater algae. The fuel is biodegradable, nontoxic and can be used in modified diesel generators to produce power.

"It's a very innovative compound," Pallé said at an event at Donington Park last week to unveil some new technologies used by Formula E. "It comes from algae so it's a first generation compound and it uses glycerine so it has no CO2 emissions, no smoke, no noise, no smell. It's something that isn't harmful at all. It's super-efficient and we're really happy to be working with [Aquafuel] on that."

Aquafuel chief executive Paul Day told BusinessGreen in 2011 that glycerine could power everything from generators to ships, calculating that a saltwater algal pond the size of Switzerland would meet global energy demand.

Algae is considered a better option for producing greener fuels than many other energy crops, as unlike those biofuel feedstocks grown on land, it does not compete with agricultural land. Algae-derived fuels are being trialled by the U.S. military, which sees it as a secure alternative to kerosene, and algal oil has also been used by Ecover to replace palm oil in selected products.

However, the technology is still in its infancy, which means the Formula E generators will have to be moved around the world to the nine cities hosting races. The season kicks off with the curtain raiser in Beijing on Sept. 13, taking in iconic locations such as Miami, Buenos Aires, Monte Carlo and Berlin before concluding in London's Battersea Park on June 27.

"We can't implement it in the country so we have to ship and transport it," Pallé said of the new algae-based generators. "But since we're starting from scratch the first year we have to deal with what we have and in future seasons we hope to be able to produce on site."

Formula E is designed to showcase electric cars to a new urban audience, with research by consultancy EY suggesting it will help drive 77 million additional electric vehicle sales over the next 25 years.

Organizers had hoped to have 10 teams compete in 10 "ePrix" in the first season, but planned events in Rio and Mexico City have fallen through.

Jaume Sallares, chief communications officer at Formula E, said that the championship would continue to look at options for a 10th race, possibly in key markets such as Japan, India or the Middle East. But he added organizers were "comfortable" launching the inaugural season with nine races.

"We still have some options to incorporate a 10th race in season one — if not we'll go for nine," he said. "There are a lot of cities in the pipeline that are interested."

This article originally appeared at Business Green. Image courtesy of FIA Formula E Championship.

[<ReadMore>](#)

Antarctic sea ice set for record high as Arctic heads for sixth lowest extent

Antarctica poised for record high as figures show Arctic sea ice was millions of square kilometres below long-term average

By Adam Vaughan, *theguardian.com*



Ringed seals outside their breathing holes on multi-layered Arctic sea ice Photograph: Design Pics Inc/Rex

we've never seen from space before."

The conundrum of why Antarctic sea ice appears to be expanding as the Arctic decreases had puzzled polar observers, but scientists have suggested that the reason Antarctic ice extent appears to be increasing is due to changing wind patterns.

Figures released by the National Snow and Ice Data Centre in Boulder, Colorado, show that the so-called Arctic sea ice minimum – the point where the extent of sea ice there is at its lowest after the summer, before it begins to refreeze for winter – is expected to be confirmed imminently and would be millions of square kilometres below the long-term average.

At 5.09m sq km, the extent of Arctic sea ice this year would be the sixth lowest on record, slightly worse than last year, though not as extreme as the record set in 2012 when it plunged to less than 3.5 million square kilometres.

However, the centre noted that there had been a particularly strong retreat of sea ice in the Laptev Sea and although the reasons for that were not yet clear, sea temperatures there had been up to 5C higher than average.

The amount of sea ice cover in the Arctic has been showing a long-term decline as climate change takes hold, with temperatures rising more rapidly in the Arctic than the rest of the planet.

[<Source>](#)

Boris Johnson's diesel car scrappage scheme could cost £300m



London mayor Boris Johnson talks about Action on Air Quality to the MPs on the environment audit committee. Credits: Parliament TV Photograph: Parliament TV

By Adam Vaughan, *for The Guardian*

Boris Johnson has said his plan to cut air pollution by paying diesel car owners up to £2,000 each to switch to cleaner models would cost as much as £300m. The scheme would mean taking more than 150,000 polluting models off London's roads.

Giving evidence to MPs on Wednesday on his plans to tackle air pollution in London just months after it was revealed Oxford Street has the highest levels of nitrogen dioxide (NO₂), the mayor said that he felt very sorry for people who had been seduced into buying diesel cars in the belief that they were more environmentally friendly.

Diesel vehicles are particularly bad for the emission of tiny particles of dust, PM_{2.5}s and PM₁₀s, named after their diameter in microns, which have been linked to thousands of premature deaths. Diesel cars have been promoted as a low carbon and cheap-to-run alternative to petrol, and now make up half of the new car market.

Johnson told the environmental audit committee: "You could do a diesel scrappage scheme that would stimulate the market for cleaner vehicles. I think we're saying it should be £1-2,000 for people who have been seduced into buying a diesel vehicle and I feel very sorry for them.

"Everyone should be very clear this has been a massive failure of policy, millions were told they were doing the right thing, the environmentally-friendly thing, by buying a diesel. They now feel very hacked off now they're told they are more polluting." He said the scheme would cost around £300m in total implying that he plans to take between 150,000 and 300,000 cars off the road.

The mayor's office released further details of his proposed national diesel scrappage scheme, saying the government should pay a £1-2,000 grant to motorists of the "most polluting diesels" that are more than 12 months old.

An estimated 4,300 people a year die prematurely as a result of bad air in London, and the capital, along with much of southern England and Wales, was hit by a dramatic pollution episode in the spring during which vulnerable people were warned to stay indoors.

Johnson said that for the UK to comply with European laws on air pollution, which it has been in breach of since 2010, London would "need more financial support" from central government. "There are great things we could do with low carbon vehicles, with stimulating the market for low carbon vehicles," he said. London is not expected to meet the EU standards on NO₂ pollution until 2030.

Asked why he had "laughably" missed targets he laid out in 2009 to encourage the take-up of electric cars, he agreed he had missed a target of 25,000 electric car chargers by 2015, with 1,400 installed instead, but blamed the market.

"The reality is the market has not developed in the way we had hoped ... They are still priced pretty uncompetitively. It's a great shame they're not thought of as reliable, because of range anxiety [over the limited distance drivers can expect from one battery charge]."

He added: "There is no market in any big city in Europe that has made the leap to electric as successfully as we'd like to have seen. It does depend on an emotional psychological tipping point in favour of electric vehicles."

[<Source>](#)

Tips:

We wish you all **Happy Diwali!** Hope you will celebrate **Green Diwali.** That means you will plan to celebrate Diwali in a way, which does not contribute to pollution. It has been experienced in the past that level of air pollution and noise pollution increased considerably during the festival of Diwali. The concentration of Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Carbon Monoxide (CO) and Particulate matters increased manifold during festival season of Diwali. We all know this leads to several health hazards like Blood Pressure, heart attack, kidney troubles, mental impairment, problems related to nervous system and respiratory problems etc.

We do not mean to say that one should stop celebrating Diwali festival. But it is desired that there should be some changes to effect least possible adverse impact on environment and people around us including ourselves. You might be having some brilliant ideas to make your Diwali a Green Diwali. However here are some tips that might help you celebrating Diwali in a greener way. We humbly request all to celebrate a greener, pollution free, environment friendly and safer Diwali.

- The festival of Diwali is not to show your spending capacity but to enjoy. We should opt for community celebration Instead of individual celebration. With the rise in gated community all the families living in that community can celebrate Diwali in the common space. This will save money spent on celebration, also it will cause paper pollution in a smaller area and community celebration will cause less air and noise pollution.
- You can limit the time period of firecracker display this will reduce the amount of firecrackers used for celebration.
- The choice of venue for community Diwali celebration should be made keeping in mind that it is not near any hospital or any residence where seriously sick person is lodged. The chosen place is not in crowded area but most preferably in an open area.
- While selecting fire crackers please ensure that the sound produced by it is in permissible decibel limit prescribed by Pollution Board. Go for eco friendly crackers in place of traditional chemical cracker. These crackers produce paper fluffers and different color lights instead of sound on bursting.
- Light earthen lamps or Diyas for decoration this will reduce consumption of electricity which is not necessarily renewable energy. Above all this will enhance the beauty of your house.
- The excess consumerism leads to very high consumption of raw materials used to manufacture those products, this automatically results in increased pressure on the natural resources. Therefore slash your shopping list and as far as possible buy recyclable products.
- It would be a great idea that items that you intend to dispose off, be given to poor people or others in charity. Thus those things will be reused.
- Do not burn old used papers, posters, calendars etc this causes double impact, on one hand it releases gases polluting environment and on the other which is equally important that by not recycling and destroying paper we lose lot of trees and water.
- Always bear in mind the pillars of sustainability are: Reduce, Recycle, Reuse and refuse articles that is not needed.

Let us take pledge that in the year 2014 we will celebrate Diwali in a greener and environmentally safer way.

Banning food waste: companies in Massachusetts get ready to compost

By Clare Leschin-Hoar, for *theguardian.com*



In the United States, 40% of food goes to waste. Photograph: Murdo MacLeod

America's trash stream is stuffed with squandered food – 36m tons of it. According to the federal government, tossed food reaches more landfills and incinerators in America than any other municipal solid waste, and it's a problem that Massachusetts officials are taking seriously.

Starting 1 October, approximately 1,700 of the state's biggest food waste generators – think hospitals, colleges, supermarkets, hotels, nursing homes, prisons and other facilities that produce at least one ton of food waste per week – must divert it away from landfills.

The state's new commercial food waste ban will require table scraps, withered fruits, tired vegetables, and expired packaged foods to flow toward food pantries, compost facilities, local farms – or to newly established anaerobic digestion facilities that can transform it into clean energy.

It's the most aggressive mandatory food recycling program on the books. While Vermont and Connecticut also have both enacted commercial food waste bans, they have a higher threshold of two tons of food waste per week.

Organic waste, meaning anything that comes from a plant or animal source and is biodegradable, makes up 25% of the Massachusetts' current waste stream. Some of that is shipped out of state, but much of it ends up in landfills at a hefty \$60-80 per ton, where it decomposes, creating harmful and unwanted methane gas.

"It's expensive to get rid of; there's a whole suite of environmental problems associated with it, and we're leaving economic opportunity on the table," says David Cash, commissioner of the Department of Environmental Protection, which will regulate the new law. "That banana peel can be turned into compost. It can be turned into energy. Not-quite-expired food can be directed to food pantries or used to feed agricultural animals."

Cash calls the new ban "a win six ways": it reduces the need for landfills, saves money on disposal costs, reduces greenhouse gases, provides a source for clean renewable energy, creates clean energy jobs, and produces useful products like fertilizer and compost.

Indeed, there seems to be little resistance to the ban. Individual households and small businesses are excluded. Very few restaurants reach the one-ton-per-week threshold, and many food-centric businesses like supermarkets have had food waste reduction policies on their radar for years.

Companies adapt

Implementing change in a large facility is no piece of leftover cake, and there are a myriad ways to slice it.

Boston Medical Center is starting with food service first. Using a program called TrimTrax, the 496-bed medical center weighs food waste in their kitchens prior to disposal, creating awareness around what is being wasted.

"The team is also being diligent on food in the door and assuring that we are bringing in just what we need," says David Maffeo, senior director of support services. "We are also in the process of transitioning to a biodigester, which will allow us to eliminate any excess food waste without sending it to a landfill."

If you have to carry your own food, you're less likely to overload. University of Massachusetts dining service has gone trayless across the campus. They've introduced "Just-in-Time" cooking, which means meals are prepared every 30 minutes, making it easier to adjust for demand. Compost bins are being installed in all retail dining rooms, and the university hosts an annual vermicompost workshop to encourage students to compost at home. An anaerobic digester is also under construction at UMass-Amherst's wastewater treatment plant.

The efforts have paid off. According to the UMass website, "organic waste is now the largest stream of recycling on campus with over 1,000 tons diverted per year."

Supermarket chain Hannaford's has 26 stores in Massachusetts that will be impacted, but spokesman Michael Norton says the company's existing sustainability strategy and a 2011 zero-waste pilot program in 11 Maine stores means the focus on diverting food waste isn't new.

[<Source>](#)

Barack Obama welcomes report saying fighting climate change can be low cost

World can cut greenhouse gas emissions, grow economy and improve lives, says study before UN summit in New York

By Fiona Harvey, environment correspondent, *theguardian.com*



Barack Obama said on Twitter that the study showed it was unnecessary to 'choose between fighting climate change and growing the economy'. Photograph: John Bazemore/AP

Barack Obama has welcomed a report finding that reducing greenhouse gas emissions can be achieved at a low cost and with added benefits in the form of a better quality of life for people around the world.

In remarks on Twitter, Obama said: "This study concludes that no one has to choose between fighting climate change and growing the economy." The reaction is significant in advance of key talks next week convened by the United Nations, when world leaders will meet in New York to discuss climate change for the first time since 2009.

Ban Ki-moon, the UN secretary-general, who will convene next week's meeting, said: "We can no longer afford to burn our way to prosperity. We must manage climate risk for sustained – and sustainable – economic progress. We need a structural transformation in the global economy. This report argues for a new model where economic growth and climate action are mutually reinforcing – and it shows how we can build it. There is no time to lose."

The report, on the New Climate Economy, was co-authored by leading economist Lord Stern and involved a roll-call of international institutions including the World Bank, the International Energy Agency and the OECD group of rich countries. It concluded that tackling climate change would add only a small amount – about \$240bn – to the trillions of dollars of investment that will take place around the world in the next decade and a half, in order to accommodate a growing population.

But the authors warned that if the growth takes place along current, high-carbon lines then the world will be locked in to high carbon emissions for decades to come. For only a small amount of extra investment, businesses and governments can achieve economic growth alongside lower carbon dioxide emissions, which could halt climate change and lead to a better quality of life for citizens, through cleaner air and water and a better environment.

The report is the most significant intervention in climate politics by Lord Stern since his 2006 review of the economics of climate change found that the short-term costs of tackling emissions were far outweighed by the benefits.

Ed Miliband, leader of the UK's Labour party, said: "Better Growth, Better Climate, is a hugely important report for those who care both about safeguarding our environment for our children and creating a successful, fairer future for us all."

"This report shows there is no contradiction between tackling climate change and growing our economies. However, it is clear a lack of political leadership is undermining the opportunity to act on climate change and secure the jobs of the future. That is why we need a Labour government that will champion a low carbon economy both in the UK and overseas."

Natalie Bennett, leader of the Green party, said: "Lord Stern is showing the kind of joined-up, evidence-based thinking that's sadly been entirely lacking in British policymaking to date. As he points out, providing warm, comfortable, affordable-to-heat homes, would not only tackle fuel poverty and stress, but also cut excess winter fuel deaths and demands on the NHS, as well as carbon emissions."

She highlighted investments in public transport as a key measure.

Sandrine Dixon Declève, director of the Prince of Wales's Corporate Leaders Group, which includes a variety of large UK businesses, said: "The good news is that economic growth and action on climate are not incompatible. On the contrary, there are myriad possibilities for all sectors to get involved in driving low-carbon growth and economic transformation."

"But we must not wait: the longer we leave it, the higher the costs. Governments and business must act together to ensure the decisions we make today are the right ones to deliver a safe and sustainable future for all."

[<Source>](#)

ConAgra joins movement for deforestation-free palm oil

By Robert Kropp

The destructive effects of global deforestation have been well-documented. The leveling of rainforest in order to build plantations for the production of palm oil — the world's most widely used vegetable oil, found in thousands of the most commonly used consumer products — threatens the way of life of indigenous communities and the very existence of many of the most endangered species as well.



Deforestation is also a significant contributor to climate change. "Tropical forests play a crucial role in stabilizing the earth's climate, storing vastly more carbon dioxide than forests in the world's temperate

regions, according to the Union of Concerned Scientists: "A 2011 study estimated total carbon stored by the earth's tropical forests at 271 billion tons — that's about seven times the total carbon emissions from fossil fuel use in the year 2008."

Currently, about 11 percent of global greenhouse gases are emitted through deforestation and other land use. The dire state of the world's rainforests may be most pronounced in Indonesia, which "ranks third in total global greenhouse emissions — behind China and the United States — due to the uncontrolled clearing and burning of its rainforests and peatlands," according to the Rainforest Action Network.

The high price of convenience food

The failure of large corporations in the packaged food, personal products and fast food industry sectors was documented earlier this year. Its Palm Oil Scorecard awarded only five of 30 corporations with a positive score. Not one of the 10 leading fast food companies received a positive score.

But the Scorecard was published before this year's proxy season got underway. Last week, reported that "20 major international corporations have committed to set goals to reduce greenhouse gas emissions or sustainably source palm oil."

The most recent corporation to join the growing movement toward deforestation-free palm oil sourcing is ConAgra, whose brands, the company stated, can be found in 99 percent of American households. Engagement following a shareowner resolution filed by Green Century Capital Management and the New York State Common Retirement Fund resulted in the company agreeing to eliminate from its supply chain any palm oil supplier engaged in deforestation.

"The rampant deforestation for palm oil has captured public attention, creating real reputational risks for companies that use the ingredient in their branded products," Lucia von Reusner, Shareholder Advocate at Green Century, said. "With this commitment, ConAgra has sent a strong signal to its investors, suppliers and the market at large that destroying tropical forests for palm oil is unacceptable business practice."

Cargill ups its commitment to better palm oil

Shortly before the investors' engagement with ConAgra ended successfully, Greenpeace International announced that Cargill — the largest importer of palm oil into the U.S. — announced

its commitment "to break the link between its palm oil and deforestation, peat destruction and social exploitation." Cargill's policy, which is effective immediately, comes on the heels of the Manifesto announcement last week," Greenpeace reported. "But while a number of the big palm oil producers that are part of SPOM held off on real actions, Cargill's policy is explicit in its pledge to implement the existing High Carbon Stock Approach (PDF). This is a critical step to ensure that Cargill's supply chain will break its links to deforestation, as it adds carbon stocks as one of the criteria that must be considered when planning the use of the land."



This 2011 photo shows rainforest deforestation on a palm oil plantation. (Credit: David Gilbert/RAN via Flickr)"

Noting that Cargill's agreement "lacks clearer targets for compliance, along with plans for independent verification," Greenpeace stated that it would continue to monitor the company's progress.

Top image of Swiss Miss hot chocolate mix by m01229 via Flickr. This article first appeared at Social Funds.

[<Source>](#)

Grim warning from the IPCC: No turning back from climate change?

By Will Nichols

Climate change is already affecting the global economy and is likely to become irreversible without rapid action to limit fossil fuel emissions, a draft of a major new U.N. study reportedly has warned.

A 127-page final draft of the latest Intergovernmental Panel on Climate Change report sent to governments Monday warned the effects of global warming already are felt across all the continents and oceans and further emissions will increase the likelihood of "severe, pervasive and irreversible impacts for people and ecosystems."

According to the report, which follows a series of comprehensive reports from the IPCC in the past year on climate science and impacts, temperatures already have increased by 0.85 degrees Celsius since 1880, a more rapid shift in the climate than that which heralded the end of the last ice age about 10,000 years ago.



The draft paper holds out little hope that countries will be able to limit global warming to the agreed goal of 2 degrees Celsius, with temperatures likely to rise by almost 4 degrees by the end of the century if the world continues to pump out emissions at the current rate.

The dangers of rising temperatures include damage to crop production, rising sea levels, melting glaciers and more prevalent heat waves. However, the report also raises the prospect of climate change exacerbating societal issues such as conflicts and refugee crises. Separately, the World Health Organisation warned Tuesday that climate change is already causing tens of thousands of deaths every year through shifting patterns of disease, extreme weather events, the degradation of water supplies and sanitation and impacts on agriculture, all of which could be alleviated by taking swift action to tackle climate risks.

The IPCC study, which has been leaked to a number of news agencies, reportedly added that the potential economic losses following average global temperature rise of 2.5 degrees Celsius could reach 2 percent of global income, but delaying action will increase both risks and costs. Putting off action until 2030 could raise the cost of tackling climate change to 2050 by 44 percent, the IPCC calculates.

While there appears to be little new in the report that has not been covered in a slew of papers published by the IPCC over the past year, the warnings and language are increasingly stark. "Without additional mitigation, and even with adaptation, warming by the end of the 21st century will lead to high to very high risk of severe, widespread, and irreversible impacts globally," it stated.

The paper, due to be released in November, will aim to focus minds ahead of global UN climate talks that month in Lima, Peru, which aims to lay the groundwork for the crucial Paris Summit in late 2015, where countries have agreed to finalize an international emission reduction deal.

However, while the U.N. talks have delivered some encouraging progress in recent years on issues such as limiting emissions from deforestation, deadlock remains over how countries ultimately will share responsibility for emissions reductions.

This week The New York Times reported that President Obama is looking to break the deadlock through a new non-formal accord that "obligates" countries to meet goals on reducing emissions and sending aid to poorer nations to help them combat climate change.

Under this proposed format, the only legally binding consequence of not meeting the targets would be publishing periodic progress reports and politically embarrassing meetings designed to "name and shame" countries that have not met their goals.

The mooted plan likely would spark fierce opposition from many developing nations, who consistently have argued that industrialized nations should face legally binding emission reduction targets and steep penalties for failing to meet them.

However, successive U.S. governments, as well as governments from large emerging economies such as China and India, repeatedly have rejected calls for legally binding targets. The United States has been particularly vocal in its opposition to such conditions, not least because it would require two-thirds Senate approval to ratify any treaty — a scenario that is all but impossible to envisage given staunch Republican opposition to cutting emissions.

[<ReadMore>](#)

Are students getting the sustainability skills they need?

By Joel Makower

2014 BUSINESS AS UNUSUAL
The social & environmental impact guide to graduate programs – for students by students



Today, Net Impact publishes its ninth annual survey of social and environmental graduate school programs, called “Business As UNusual” ([download](#)). The title notwithstanding, it reveals that such programs have become woven into the fabric of many college and university curricula — that teaching sustainability is, indeed, business as usual on campuses these days.

That doesn’t necessarily mean

these programs are equipping today’s students for tomorrow’s challenges.

Net Impact, a membership group of students and young professionals seeking “to work within and beyond business for a sustainable future,” has chapters on more than 300 college campuses around the world, the bulk in North America. It also has a large and vibrant professional network of alumni, a high percentage of whom are working in sustainability-related jobs in the private, nonprofit and public sectors.

Each year since 2006, the organization has surveyed students about college and university social and environmental graduate programs, including each school’s offerings, students’ assessments of its strengths and weaknesses, a sampling of courses, annual program costs, key faculty and other information. The resulting report rates nearly 100 different schools.

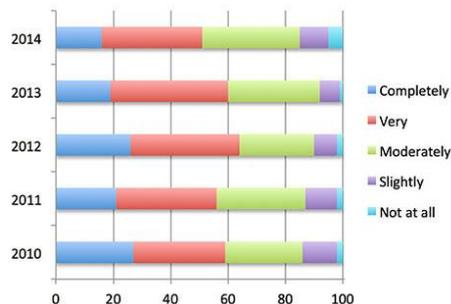
In this year’s edition, top-rated schools for environmental programs include University of California, Santa Barbara; Presidio Graduate School; Pinchot Bainbridge Graduate Institute; the University of Michigan; and MIT.

A separate ranking of schools for social impact programs is led by Presidio Graduate School; Yale; Pinchot Bainbridge Graduate Institute; the University of Michigan; Colorado State and Duke tied for fifth.

All good, but that’s not necessarily what interests me about the report. For the past several years, Net Impact also has surveyed student attitudes about whether their schools are meeting their needs, as well as the overall importance of corporate sustainability to the world of business.

The survey results suggest that graduate programs aren’t keeping pace with student interest in social and environmental issues. When asked to describe their satisfaction with the sustainability curriculum at their school, the percentage of students who say they are “completely” satisfied has dropped, from 27 percent in 2010 to just 16 percent in 2014, the lowest level in the five years Net Impact has asked this question. “Not at all” satisfied jumped from 1 or 2 percent the past four years, to 5 percent this year. This, despite the overall growth of social and environmental course offerings.

How satisfied are you with the number of courses on social/environmental issues?



Student sophistication about these issues seems to be growing faster than what schools are offering, said Linda Gerard, Net Impact’s VP Brand Marketing and Innovation. “There is no doubt that the mainstreaming of social and environmental impact across business schools is continuing to grow,” she told me. “The majority are increasing the integration of those issues in exciting and innovative ways, both because the market demands it and the students demand it.”

However, she added, “Schools are doing more than ever but student satisfaction ratings are lower than ever. The bar is rising in terms of student expectations.”

This is not the first time Net Impact has noted the disconnect between business schools and the business world. A study three years ago conducted with the World Environment Center found that companies do a lot of internal training and preparation because grad school sustainability curricula is much too narrowly focused.

It’s not that schools aren’t innovating. According to Gerard, over half the schools have found new ways to integrate social or environmental themes into business education. Trends, she said, include increasing cross-club, cross-school and cross-discipline approaches, infusion of design thinking to create social innovation and more experiential learning offerings.

Among the innovations are the Haas Socially Responsible Investment Fund, offered at the UC Berkeley graduate business school. The program recently completed an oversubscribed

crowdfunding campaign, raising \$100,000 to enable students to invest real money, not merely trade in hypothetical accounts. Another innovation is at Cornell University’s S.C. Johnson Graduate School of Management, which offers students customized, one-on-one coaching and mentorship through a dedicated sustainability counselor at the school’s career center.

It’s progress, to be sure, but is it enough? Arguably, not. When Net Impact asked about the top areas where graduate programs could improve, impact career and experiential learning support topped the list.



I was a little put off by one survey question. It asked whether students would be willing to earn a salary that was “15 percent lower than you might otherwise make” in order to land a job that seeks to make a social or environmental difference in the world (83 percent said they would be willing) or to work for a company committed to corporate and environmental responsibility (71 percent). Both numbers were up slightly over the previous year.

But simply asking this question helps perpetuate a myth: that aligning your career with your values requires a financial cost in the form of lower earnings. That’s sometimes true, especially for those who take a nonprofit or public-service career path, but not necessarily in the corporate sector. Moreover, it’s unclear whether the increase in students agreeing with such statements reflects the growth of new metrics for success or merely the desperate state of the job market, particularly in corporate responsibility jobs, which aren’t necessarily growing.

“It’s important to note that many of our members choose to enter the nonprofit or social enterprise fields, where monetary trade-offs are often a reality,” explained Gerard, when I asked her about this. “Coveted CSR roles in business are harder for students to access early in their careers.”

Perhaps most telling was the growth in the percentage of students saying, “At this point, I feel pressure to take any role,” up nearly a third from 2013, rising from 27 percent to 35 percent. The percentage of students expressing confidence that “I’ll find a job aligned with my values, interests and passions” has declined steadily since 2012, from 91 percent that year to 83 percent in 2014. And students agreeing that finding an impact job was a top priority for students in their program declined 9 percent in just one year, the largest one-year change in any results.

Clearly, more needs to be done to ensure that students don’t perceive corporate responsibility and “impact jobs” as merely a luxury for good economic times.

Report cover and infographic from “Business as UNusual” report; bar chart by GreenBiz group.

[<ReadMore>](#)

Footsteps Will Soon Generate Electricity in Washington DC

SustainableBusiness.com News

Sustainable DC is experimenting with kinetically-powered pavers, where pedestrians create electricity as they walk along the road.

100 kinetic pavers scattered along the road will generate 456 kilowatts of energy a year, enough to light the new 850 square foot Connecticut Avenue Overlook Parklet, south of Dupont Circle.

At a cost of \$200,000, it “will provide both a new park and an interesting new amenity in pedestrian-rich Dupont Circle that will showcase a fun, innovative way to generate renewable energy,” says Sustainable DC. ZGF Architects, which is designing the park expects about 30,000 people to walk through daily.



The Golden Triangle Business Improvement District’s website will display real time updates on the energy generated.

Construction is scheduled for October.

Manufactured by Pavegen from recycled rubber, they instantly convert the kinetic energy of a footstep into electricity. Each paver is connected to a battery that stores energy via a single cable. The tiles have also been installed at Heathrow Airport and on London Bridge, at schools in England and New York, a train station in France, and London’s 2012 Olympics.

Eventually, the tiles are seen as a way to light up everything from subways to parts of the developing world that are off-grid.

Learn more: Website: <http://pavegen.com>

[<Source>](#)

Corn Waste to Gasoline: First Commercial Plant Operating in Iowa

SustainableBusiness.com News

The first biofuel plant that runs on corn waste has begun commercial production in Iowa - Project LIBERTY.

POET - one of the big corn ethanol companies - will produce 25 million gallons of cellulosic ethanol a year from the plant for use in transportation fuels. Yeast and enzymes convert corn cobs, leaves, husks and stalk into fuel. Corn waste will be sourced from 450 farmers that are within 30-40 miles of the plant and it runs on a biogas anaerobic digester and solid fuel boiler.

Farmers typically regard corn stover as waste and have to pay for it to be removed. Now they will get paid instead and still have plenty to mulch the soil.

To come up with locally sourced, sustainable processes that can turn agricultural products into fuel, the Department of Energy (DOE) has invested \$100 million in research and development (since 2007) in the cost-shared project with POET and Dutch enzyme-maker DSM Royal.

Most important, they developed a cost-effective process for producing cellulosic ethanol with biochemical conversion technologies, which now serves as a test bed for the industry.



POET says it will incorporate the technology in its 27 grain ethanol plants. Its goal is to produce 3.5 billion gallons of cellulosic ethanol by 2022 from wood, grass and agricultural waste. It expects the fuel to sell for around \$3 a gallon.

This is only the second commercial-scale biorefinery in the US. A much smaller 8 million gallon a year facility came online last year in Florida, running on grass, wood chips and municipal solid waste - INEOS Bio's Indian River BioEnergy Center.

Also supported by DOE, biomass is converted using a hybrid gasification/fermentation technology. It produces energy for heat as well as transportation fuel.

In 2012, DOE's National Renewable Energy Lab demonstrated how cellulosic ethanol could cost \$2.15 a gallon, down from \$9 a decade ago.

DOE finds that lifecycle greenhouse gas emissions for cellulosic ethanol are 60% lower than petroleum-based fuel and could eventually replace about 30% of it, but others seriously question that.

Research also shows that using E15 blends in gas would reduce cancer-causing pollutants and smog from vehicle exhaust and evaporative emissions.

Read our articles, Cellulosic Biofuels Finally Gaining Ground and Can Biofuels Make a Dent in Replacing Petroleum?

Municipal Solid Waste for Jet Fuel

The first biofuel plant for the aviation industry got a boost from the Department of Agriculture's Biorefinery Assistance Program, which closed on a \$105 million loan guarantee to Fulcrum Sierra Biofuels.

The feedstock - municipal solid waste - is considered a key waste stream if we hope to replace significant amounts of petroleum. Everything that can be recycled or composted is removed before processing begins.

Fulcrum's \$266 million project will convert 147,000 tons of waste a year into 11 million gallons of biodiesel at a facility in Nevada.

Cathay Pacific Airways is investing in the parent company, Fulcrum Bioenergy, and has contracted for 375 million gallons of fuel over 10 years - about 2% of its annual consumption.

Not surprisingly, the oil industry (with ALEC's help) is working hard to repeal the Renewables Fuel Standard, which requires certain amounts of biofuels to be blended into fuels. Republicans plan to vote soon on bills that would repeal the policy, which is largely responsible for the emergence of the industry. The EPA now allows natural gas from landfills, biogas from wastewater treatment facilities and farms and separated municipal waste to qualify as renewable fuels. The mandate for incorporating ethanol from corn was eliminated this year.

Learn more about DOE's biofuel efforts:

Website: www.energy.gov/eere/bioenergy/bioenergy-technologies-office

[<Source>](#)

France promises \$1bn for climate change fund at UN summit

By Suzanne Goldenberg, *The Guardian*,



An activist dressed as a polar bear at a rally in New York as the world leaders gathered. Photograph: Andy Katz/Demotix/Corbis

France promised \$1bn to a near-empty climate change fund for poor countries on Tuesday and called for the establishment of a new green economy in the first concrete result of a milestone United Nations summit.

The pledge came on a day of impassioned speeches from some 120 presidents and prime ministers - as well as a cameo by the actor and now UN ambassador Leonardo DiCaprio - telling the summit they had wasted precious time and now needed to deal urgently with climate change.

Both China and America, the world's two biggest emitters, pledged their support for a climate deal, without offering specifics.

Chinese vice-premier Zhang Gaoli said his country's emissions would peak "as soon as possible", and pledged \$6m to help developing countries fight climate change. Barack Obama, in a stirring address, said America would lead efforts to reach a global compact on climate change. "We are the first generation to feel the impact of climate change and the last to be able to do anything about it," he told the summit.

David Cameron touted his government's environmental policies. "As prime minister I pledged to lead the greenest government ever and I believe we have kept that promise," he said.

But leaders from Africa and the Pacific islands threatened by rising seas said rich countries needed to do more.

"We must get away from the 'wait and see who is doing what' style of leadership before deciding what needs to be done," said Anote Tong, the president of Kiribati, which could be drowned by rising seas.

The summit - the first such gathering of world leaders in five years - was convened to move countries towards an international agreement in Paris to fight climate change by the end of next year.

The French leader, François Hollande, said it would be impossible to reach such a deal without laying the foundations of a new green economy. "We need to define a new economy for the world." "You can't fight climate change without development," he said, pledging \$1bn (£600m) to a fund to help poor countries deal with climate change.

The Green Climate Fund was founded in 2010. UN officials and developing-country diplomats have said repeatedly it will not be possible to reach a deal in Paris without a significant fund for the countries which did the least to cause climate change but will bear the brunt of its effects.

Officials had been hoping to raise \$10bn to \$15bn by the end of the year. The German chancellor, Angela Merkel, made the first significant pledge last July, committing \$1bn. South Korea, which hosts the fund, also committed \$100m yesterday. But the fund remains well below its goal.

The shortfall matched the plaintive calls from presidents and prime ministers who said the United Nations and world leaders had been talking about the threat of climate change for years - without actually following through on action.

"Why today are we still so passive and so dispersed that we do not have a common strategy for the fight against climate change? Why can we not agree on a pragmatic strategy in the fight against climate change?" Ali Bongo Ondimba, the president of Gabon, told the summit.

The summit did produce other agreements - in addition to cash - but these too were relatively modest.

[<ReadMore>](#)

The house made from 4,000 video cassettes and two tonnes of jeans

The Brighton Waste House is Britain's first house made almost entirely from rubbish, including chalk, coffee cups and lights en route to Bangladesh

By Hannah Gould, Guardian Professional



House made from rubbish Photograph: University of Brighton

Remember video cassettes, those big black boxes that played pictures? Rendered useless by DVDs, they've found a new purpose. Some 4,000 of them have built a house, along with two tonnes of denim jeans, 2,000 used carpet tiles and 20,000 toothbrushes.

The result is Britain's first house made almost entirely from rubbish. Based at the University of

Brighton, the house opened its doors in June and is a live research project, acting as a test-bed for new windows, solar panels, insulation and construction materials.

The 20,000 toothbrushes were sourced from a company that cleans planes after long-haul flights and represent just four days worth of work. According to the 2006

Greenpeace report, Plastic Debris in the World's Oceans, plastic has been found floating in all the world's oceans, from polar regions to the equator.

Toothbrushes, lighters, bottle caps and syringes are among the ingredients making up the "plastic soup" floating in the Pacific Ocean.



Toothbrushes diverted from landfill and oceans. Photograph: University of Brighton

that for every five houses built enough waste is generated to build one extra house. The aim of the project, led by University of Brighton senior lecturer Duncan Baker-Brown and endorsed by Grand Designs TV show presenter Kevin McCloud, is to show how low-carbon homes can be built cheaply and quickly using waste and surplus material.

Students, apprentices, local builders, school children and volunteers were all involved in building the house using concrete blocks, timber, ply, vinyl banners, pieces of polystyrene and bicycle inner tubes.



Cassettes being tested for insulation properties. Photograph: University of Brighton

Toothbrushes, along with video cassettes are being tested for their insulation qualities. Chalk is also being tested after a lorry-load of it heading for landfill was rescued.

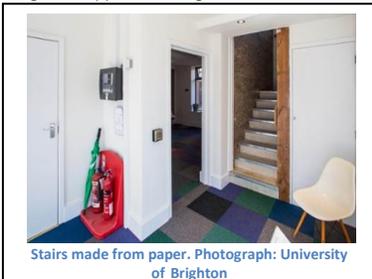
The construction industry currently discards 20% of everything it uses, meaning

Its kitchen worktop is made from old coffee cups and grinds, its staircase from compressed thrown away paper and the lights were on board an old ship being sent to get scrapped in Bangladesh.



Kitchen top made from coffee cups. Photograph: University of Brighton

As the cost of raw materials continues to rise, the UK's first A rated energy-efficient building made from waste, may be the first of many.



Stairs made from paper. Photograph: University of Brighton

London to get hybrid buses that could charge wirelessly

By James Murray for Business Green, for theguardian.com



TfL announced it will test four specially designed hybrid buses that would soak up power wirelessly at bus stops. Photograph: Peter Macdiarmid/Getty Images

London's fast-expanding green bus fleet is to receive a further boost, after Transport for London (TfL) announced on Wednesday the launch of a new trial to test four specially designed hybrid buses capable of wirelessly charging their batteries at bus stops.

The Alexander Dennis Enviro400H E400 buses feature a diesel-electric hybrid engine and have been fitted with technology that will enable to batteries to receive a charging boost when stationary at specially equipped bus stops.

Four buses will operate from next year on the Stagecoach-operated route 69 between Canning Town and Walthamstow bus stations, both of which will be fitted with inductive wireless charging technology.

TfL didn't disclose the projected carbon emission, air pollution, and fuel cost savings expected from the trial, but said the technology will allow the buses to operate in pure electric mode for "a significant period of the time they are in passenger service".

"The buses have a diesel engine that will be used when the battery power on the bus is depleted, but it is anticipated this will only be a small amount of the time, meaning emissions on these vehicles are greatly reduced," TfL said.

The trial is being part-funded by the Zero Emissions Urban Bus System (Zeeus) and represents the latest green bus pilot scheme to be undertaken by TfL, following the launch of a fleet of six pure electric buses, the introduction of zero-emission hydrogen buses on Route RV1 between Covent Garden and Tower Gateway, and the rollout of about 800 hybrid buses.

"We are continuing our assessment of new technology in the capital that can deliver genuine environmental benefits," said Mike Weston, TfL's director of buses, in a statement. "This trial of extended-range diesel-electric hybrid buses, utilising the latest inductive charging technology, could be a step closer to getting even cleaner double-deck buses on London's streets. We will be closely monitoring the results of the trials, which may help us adopt this new cleaner technology more widely in London."

The development comes in the same week as thinktank IPPR published a new report arguing that the failure of other cities to emulate TfL's co-ordinated, city-wide approach to public transport provision had led to higher fares, poor bus services, and increased environmental impacts.

The study looked at the liberalisation of bus provision in the UK and revealed how bus use outside London fell more than 32% since 1986, while rising 99% over the same period in the capital. In addition, English bus fares outside London rose by 35% above inflation between 1995 and 2013, while 37% of weekly bus services outside London face no competition.

"London has the best buses in Britain and that's no accident," said IPPR associate director Will Straw. "Transport for London has been a great success while the deregulation of buses outside London has largely failed. Outside London, bus passenger journeys are down and fares are rising higher than inflation. Examples of successful bus markets outside London are all too rare so local transport bodies should be given greater powers to hold uncompetitive providers to account."

[<ReadMore>](#)

[<Source>](#)

Ban Ki-moon to join climate change march

'I will link arms with those marching for climate action,' says UN secretary general

By Fiona Harvey, [theguardian.com](#)



UN secretary general Ban Ki-moon said 'action on climate change is urgent.' Photograph: Richard Drew/AP

The secretary general of the United Nations, Ban Ki-moon, is to join a public march calling for action on climate change this weekend.

"I will link arms with those marching for climate action," Ban told a press conference. "We stand with them on the right side of this key issue for our common future."

His unusual step – high-ranking officials do not normally attend mass public protests – is a measure of how high the stakes

are at a summit next week of world leaders, called by the secretary-general, to discuss climate change. Barack Obama, David Cameron and scores of other heads of state and government from around the world are expected to talk about ways to cut greenhouse gas emissions, in preparation for a crunch meeting in Paris next year at which world governments are supposed to sign a new global agreement on the climate.

Ban said: "Action on climate change is urgent. The more we delay, the more we will pay in lives and in money. The climate summit that I am convening one week from today has two goals: to mobilise political will for a universal and meaningful climate agreement next year in Paris; and second to generate ambitious steps to reduce greenhouse gas emissions and strengthen resilience. We are anticipating an impressive turnout of leaders from government, business, finance and civil society. Most important, we are expecting significant commitments and progress."

No further details were available on Ban's involvement, but the organisers of the climate march are hoping for tens of thousands of people to turn out in support of their aims.

Ban has appointed Leonard di Caprio, the actor, as a UN "messenger of peace" with special responsibility for climate change. "His global stardom is the perfect match for this global challenge," Ban said. Di Caprio will address the opening of the climate summit in New York on 23 September.

Assembling world leaders to talk about climate change is a risky strategy, however. The last time Ban called such a summit was before the Copenhagen climate conference of 2009, which marked the first time that developed and major developing countries made joint commitments on curbing greenhouse gas emissions but was a PR disaster as the final days were marked by chaos and recriminations. The UN's hope is that bringing leaders together in a series of private meetings will allow them more latitude to make new commitments, which are needed as current targets to cut emissions run out in 2020.

Already, the Chinese and Indian governments have indicated that they will not send high-ranking officials to the summit, with both Narendra Modi, India's prime minister, and Xi Jinping, China's leader, unlikely to attend.

Mindy Lubber, president of Ceres, a global coalition of investors concerned about climate change, said the secretary general's decision to attend the march "sent a very important signal" about the importance of the summit. "This is a chance for real progress," she told the Guardian. Though governments have been meeting to talk about climate change for more than two decades, the momentum behind next week's meeting could lead to a breakthrough, she said.

[<Source>](#)

How sharing will define the future of urban life

By [David Mahfouda](#) and [Alex Pasternack](#)



Recently, researchers at the Massachusetts Institute of Technology announced a remarkable finding: in 2013, some 95 percent of New York City cabs could have been shared had passengers been willing to amend their schedules by no more than a minute. The reductions in congestion, emissions and costs simply would have been dramatic.

At Bandwagon, the Brooklyn-based startup where we've built an app for sharing taxis, the MIT research finding proved gratifying. It also came as little surprise. Analyzing the data we've collected at taxi lines and events has shown that sharing not only reduces costs and congestion but also accelerates the flow of people and cars.

The potential for savings are huge: the costs of congestion at hubs and taxi lines hasn't been fully studied, but our own findings show that at peak hours, wait times for rides at NYC airports can stretch to over 45 minutes.

Of course, the ridesharing concept isn't new: carpooling has been part of American mobility since the Model T, and it's an essential part of getting around in much of the world, from Beirut's *servees* to Israel's *sherut*, from Senegal's *car rapides* to the *carro público* of the Dominican Republic.

Sharing rides in an ad-hoc and real-time fashion is a bit more complicated. A few years ago, we brought the idea to one heavy-hitting entrepreneur. He grinned and chuckled and wished us good luck. He knew how hard a problem it was, he said; his dad had tried to address it while in college in the 1960s, using a computer program to help his classmates commute home during spring break.



Bandwagon made a taxi-sharing fast lane available to CES attendees in January in Las Vegas. (Credit: Intel Free Press)

The tools for making a system like this work are here, now. The time is right too. As governments look for affordable ways to upgrade infrastructure, we're buying fewer cars. Vehicle ownership is decreasing, while on-demand vehicle services such as taxi apps and carsharing — defined by flexibility, speed and lower costs — are increasing.

The question is, how well can we connect these dots to everyone's advantage? This goes for so many ideas in our future cities, by the way.

We know that sharing works best when the pool of potential sharers is large, access to the system is fast and service can be provided by a range of multiple providers — be it a cab, an e-hail app or another readily accessible car service.

To solve this, we've sought an open, interoperable approach. At airports and events, for instance, Bandwagon users can locate others nearby with similar routes, no matter what kind of vehicles are available. In Las Vegas at CES 2014, Bandwagon augmented the app with an "HOV" lane that allowed sharing riders to skip the long lines. The savings were dramatic: 1,000 attendees using Bandwagon cut 1,117 miles from the crowded streets, eliminated half a ton of CO₂ and spent 250 fewer hours waiting on line. Altogether, the value of that saved time and reduced cab fare saved users over \$18,000. As a cool bonus, people reported good vibes as they skipped the line and made new friends along the way.

Bandwagon also works with companies and organizations to coordinate multiple itineraries for repeat ride-shares or instant rides. By helping a city-based Fortune 500 company share 33 percent of its rides, for example, we can help reduce its spending on transportation by more than \$446,000 and lower its emissions by over 32 tons of CO₂ annually.

But as we've learned, successfully plugging tech into our future urban life isn't simply a matter of building an app. It's about design, safety, comfort and incentives. And it depends upon bringing a collaborative spirit to the entire urban ecosystem.

Openness and options: As our cities turn toward apps to improve transit, for instance, keeping data open is imperative. Similarly, different networks must be able to communicate with each other; services such as RideScout and CityMapper, which aggregate various transit data on one screen, are noteworthy examples. If we go down the path of closed systems instead, we risk locking ourselves into silos that only create more inefficiencies.

Public-private teamwork: By working together, the public and private sectors can help new ideas "plug in" to our cities more easily. As MIT's taxi researchers suggested, for instance, regulators could design a fare structure specifically for shared rides that would better distribute the benefits of sharing to drivers, and better incentivize them to build support for sharing.

Meanwhile, as the MIT study itself demonstrated, both the private and public sectors greatly can benefit from each others' experiments. At Bandwagon we value our relationships with academic transportation researchers, from the scientists at MIT to our partners closer to home. For example, some of our neighbors at NYU Poly's Center for Urban Science and Progress also have been studying the behavior of taxi cabs in the world's densest taxi environment, driven by an interest we share: to lessen the environmental impact of the taxi network and make it more responsive to a greater group of riders.

Speed and access: Apps shouldn't make urban life any more complicated. The easier it is to tap into a network — and the more people who can be part of it — the more powerful that network becomes. Also, if access to digital services remains confined to only certain groups of people, our networks will be less effective and will risk perpetuating inequalities.

As our future cities take shape, sharing rides is just one piece of a larger puzzle that citizens and innovators are assembling. The smarter we are at working together now on all of those pieces, the better we'll be at embracing what our cities always have been: elegant, sustainable machines for collaboration.

Top image by [Luciano Mortula](#) via [Shutterstock](#).

[<Source>](#)

How 3 biodiesel companies defy the odds in a challenging industry

By Donna Walden and Kelsey McCutcheon Fitzgerald

While biodiesel companies across the United States await government decisions on updates to the Renewable Fuel Standard and Blenders Tax Credit, the Western Sustainability and Pollution Prevention Network checked in with three West Coast biodiesel companies for an insider's look at the state of the industry. Of the 297 biofuels companies currently operating in the U.S., we chose three — Pacific Biodiesel, Bently Biofuels and SeSequential Pacific Biodiesel — because they share a feedstock of used cooking oil and a passion for protecting the environment.



In addition, each one of them is standing strong in uncertain times, surviving conditions that have forced many other biodiesel companies out of business. This article will touch briefly on each company, the challenges that they face, their secrets to success, why it's important that the biodiesel industry survive, and what we can do to help the biofuel industry succeed.

How three biodiesel companies got into the biofuels industry

The founders of Pacific Biodiesel, Bently Biofuels and SeSequential Pacific Biodiesel each entered the biodiesel industry for different reasons, but eventually came to the same conclusions: creating fuel from used cooking oil helps the environment, reduces our dependence on fossil fuels and makes good business sense.

Pacific Biodiesel, located in Kahului, Hawaii, is the oldest biodiesel company in the United States. For founders Kelly and Robert King, the impetus for entering the industry was a desire to put a waste product to work by recycling used cooking oil into a fuel source and keeping it out of the Central Maui Landfill. At the time, little was known about the possibilities for biodiesel, so the Kings worked with researchers from the University of Idaho to develop methods for converting used cooking oil into fuel.

They built the first biodiesel plant on site at the Central Maui Landfill in 1995 and have been successfully diverting cooking oil from the landfill ever since. "Last year, we went through the process of figuring out how much FOG (fats, oils and grease) we'd kept out of the landfill," said Kelly King. "It was something like 22 million gallons. For a small island, that's pretty big."

During the past two decades, Pacific Biodiesel has helped to design and build twelve other biodiesel facilities, including plants for Bently Biofuels and SeSequential Pacific Biodiesel on the mainland U.S..

Bently Biofuels, located in Minden, NV, was founded in 2002 by Don Bently, out of concern for rising petroleum fuel prices. "In 2002 Don Bently had the foresight to say that oil was going to get to \$100 a barrel," said Carlo Luri, Director of business development for Bently Enterprises. "Oil was trading for about \$25 a barrel back then. And that was the historic high, so nobody in their right mind would have even forecast or predicted that oil could have quadrupled in price. It only took five years for that to happen."

Bently, an entrepreneur and industrialist, opened a plant for biodiesel production on his family ranch in 2005. In 2006, he began to market and sell the product in California. Today, the nine-person team at Bently Biofuels sells biodiesel to customers in Northern Nevada and California from fueling stations in Minden, Reno, Berkeley and San Francisco.

SeSequential Pacific Biodiesel, currently operating out of Salem, OR, began production in Eugene, OR, in 1998 as Eugene Biosource. Tyson Keever, one of SeSequential's three co-founders, was initially attracted to the "do-it-yourself" nature of biofuels production. "You could make it at home in your garage," said Keever. "It was just very empowering and tangible."

In 2002 Eugene Biosource became Sequential Biofuels. In 2005, they partnered with Pacific Biodiesel to form a joint venture called SeSequential Pacific Biodiesel. Today, SeSequential Pacific Biodiesel produces more than six million gallons of biodiesel a year at its plant in Salem, and sells fuel from more than 30 retail locations across Oregon and Washington. To date, the company has displaced 10,250,000 gallons of petroleum, offsetting 189,700,664 pounds of CO2 emissions.

Challenges facing the biofuels industry today

As gasoline prices increase, so does the appeal of alternative fuels; and like gasoline, alternative fuel prices can fluctuate based on a variety of political and economic factors.

Biodiesel is currently more expensive per gallon than gasoline and other alternative fuels. One reason for this discrepancy is that the other fuels are better subsidized. The Blenders

Tax Credit, which is a fixed \$1-per-gallon tax credit given to the first fuel blender of a volume of biodiesel that contains at least one-tenth of one percent petroleum-based diesel fuel, has been inconsistent. Every two years, the Blenders Tax Credit expires and has to be reauthorized by Congress. At the end of 2013, it had not been reauthorized for 2014, according to Carlo Luri of Bently.

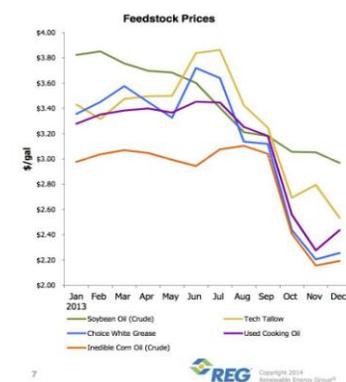
National Average Price Between April 1 and April 15, 2014	
Fuel	Price
Biodiesel (B20)	\$4.01/gallon
Biodiesel (B99-B100)	\$4.23/gallon
Electricity	\$0.12/kWh
Ethanol (E85)	\$3.41/gallon
Natural Gas (CNG)	\$2.15/GGE
Propane	\$3.31/gallon
Gasoline	\$3.65/gallon

"If we don't get that \$1 tax credit, it's basically a dollar out of somebody's pocket," said Luri. "Either the customer has to pay \$1 more or we have to make due with \$1 less. Trying to run a biofuel business with \$1 less per gallon for revenue means that most biodiesel companies are operating in the red."

If the Blenders Tax Credit is reauthorized for 2014, companies can be paid retroactively. Luri explained that this has happened several times in the past but there is no guarantee that it will

happen again. This uncertainty makes it difficult for many biodiesel companies to compete with the petroleum industry.

"Petroleum subsidies are embedded in federal statutes, so they don't have to go back every two years and ask for them," said Kelly King of Pacific. "All of the renewable fuel subsidies and incentives are short-term. They have to be voted on every two to four years, and that's not conducive to creating an industry where investors want to know what their return on investment is going to be for the next five years."



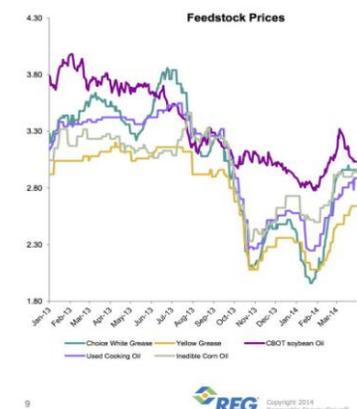
Source: Renewable Energy Group 4Q13 presentation

Luri also described another hurdle that biodiesel producers face: the price of yellow grease (another name for used cooking oil) dropped almost 40 percent between 2013 and early 2014. "Financially, that is very damaging to the companies that are trying to recycle the oil, because you have a fixed contract to buy the oil from the restaurant at a certain price," explained Luri. "Your collection costs are more or less fixed because you're paying salaries, insurance, fuel, depreciation on the trucks, and meanwhile the price that you can sell that oil into the market is down 40 percent."

Limited feedstock is another major challenge facing the biofuels industry, according to Tyson Keever of SeSequential Pacific Biodiesel. Feedstock prices fluctuate dramatically, making it difficult for biofuels companies to maintain a sustainable business operations model. "Go back five years, most of the industry across the country made biodiesel from soybean oil," said Keever. "Today, a lot of new sources of feedstock are coming to market. Corn oil has taken a significant market position, and more fats, oils and greases, recycled cooking oil and tallow are coming to market."

All three companies think that it is unlikely that biofuels would ever replace petroleum because there aren't enough soybeans, corn, or used cooking oil to meet our country's demand for fuel.

U.S. EPA's proposal to reduce the mandatory volume of biofuels blended or sold into the nation's fuel supply for 2014 is another policy change that is expected to have an adverse effect on the biofuels industry. Each year the EPA is required to set standards for the Renewable Fuel Standard program and determine the national volume of biodiesel that will be required. If the EPA were to reduce the required volume of biodiesel for the coming year, this would be the first time the agency scaled back its ambitions since the RFS program began in 2007.



Changes in state policy affect biodiesel companies as well, but the biodiesel industry is receiving some support from the courts. "The petroleum industry, the food industry and other refineries are united in the attack on biofuels, and most of that is focused by attacking the programs that are put in place to incentivize biofuels," said Carlo Luri of Bently. "In California, the Low Carbon Fuel Standard is under attack, and at the federal level the Renewable Fuel Standard. In the last 8 or 10 months, there have been a number of rulings coming down from the courts of appeals that are standing in support of renewable fuels. So the attacks are there, and they do have an impact, and it tends to slow things down and stall things and sometimes impact prices."

[<ReadMore>](#)

A tiny, rare snail in Malaysia has big consequences for global cement giant

A new species of snail is believed only to exist in a limestone quarry in Malaysia, run by cement giant Lafarge, Tony Juniper challenges the company to protect it from extinction

By Tony Juniper, Guardian Professional



A new species of snail has been discovered in a limestone quarry in Malaysia, run by global cement giant Lafarge. Photograph: P T Ong

For the first time ever, a 'new' species has been named after the company that has the power to either conserve or destroy it. It's a snail and, although small, has the potential to leave a permanent legacy for a giant global business.

The snail in question was recently discovered living on an isolated limestone hill called Gunung Kanthan in the northwest of Peninsular Malaysia – its only known home on Earth. Many species with tiny geographical ranges are at particular risk of extinction, but this one more so than many as the only place it has ever been found is in the corner of a limestone quarry run by global cement and aggregates giant Lafarge.

The quarry, or at least those parts of it that have yet to be blown apart to provide material for cement manufacture, has proven a remarkably fertile place for new species. It has recently been the source of three new kinds of plant, a trapdoor spider, another snail and new kind of Bent-toed Gecko. Given the very restricted known distributions of these species, all of them are presumed to be at critical risk of global extinction, and all face threat from further quarrying.

These newcomers on Earth's register of life are not alone. Across a broad region of tropical Asia new species are being discovered at a very rapid rate. Caves, lakes and gorge forests are among the features that have been found to host species never before known, but which are in many cases vulnerable to being quickly lost.

The naming of new species follows a formal technical process. First the novel life form must be described and shown to be as yet unknown to science. It is then allocated a new two-part name, usually in Latin or Greek. Such names are often chosen to honour a person involved in some way with its discovery, for example the biologist who first found it or a benefactor who funded their work.

Whatever the inspiration for the name, the first part describes the group of closely related species to which it belongs – the genus. In this case a group of snails called Charopa. The second part is specific to the animal, plant, fungi or microbe in question. Executives at Lafarge global headquarters in Paris should take note that the second part of the name allocated by the mollusc specialists who named this new creature is *lafargei*.

Biologists who published the paper naming the new species did so in the most recent issue of *Bacteria*, the journal of the Netherlands Malacological Society. They write "We name this species *Charopa lafargei* after Lafarge whose declared goals for biodiversity include minimising and avoiding damage to important habitats, minimising and avoiding species mortality and stress, and minimising and reversing habitat fragmentation".

They added that the company has declared the aim of achieving a "net positive impact on biodiversity" and further justify their choice of name because decisions made by Lafarge "will determine the future existence of this snail."

The limestone landscapes from which Lafarge is winning aggregates to make cement are evidently of global importance for biodiversity and alongside the broad aim of achieving a 'net positive impact' the firm has undertaken some specific steps at Gunung Kanthan that it says are aimed at protecting the unique wildlife. These are, however, believed by conservationists to be insufficient to secure the future of the endangered fauna and flora found there.

Thinking about the company's long-term reputation and legacy, the head of sustainability at Lafarge may consider taking the following actions. First, get a team of top biologists into the field to do a proper survey of the wildlife found in and around the quarry. This should lead to

a series of management recommendations to protect the species restricted to the mine area. All this would be made public and be peer reviewed. Until all this was finished there'd be no further mine expansion.

Once there was agreement among biologists and executives as to a credible plan of action, allocate a budget to make sure these unique species had a long-term future. It's neither complicated nor expensive and would be exactly the kind of thing the company would have to do were these rare animals and plants discovered in France, for example. All it requires is for Lafarge executives to show some leadership and commitment.

The naming of the snail will hopefully be the catalyst for a credible conservation plan at Gunung Kanthan and lead to *Charopa lafargei* ultimately being a source of pride and inspiration for Lafarge, rather than a reminder of corporate indifference to the rising tide of extinction that each day gathers more momentum.

[<ReadMore>](#)

Runup to UN Climate Summit: Report Lays Path for Addressing Climate & Poverty

SustainableBusiness.com News

"The decisions we make now will determine the future of our economy and our climate," says economist Lord Nicholas Stern, co-chair of the Global Commission on the Economy and Climate. "If we choose low-carbon investments we can generate strong, high-quality growth - not just in the future, but now. But if we continue down the high-carbon route, climate change will bring severe risks to long-term prosperity."

Stern is speaking about the report they released in the run-up to the UN Climate Summit. Co-chaired by former President of Mexico Felipe Calderon (under which national climate legislation was signed into law), the report's thesis is that rather than harming the economy by addressing climate change, it offers unprecedented opportunities for economic growth.

We all know that, of course. How obvious is it that creating and expanding entirely new industries, such as renewable energy and restoring ecosystems ... creates jobs and drives economies?

For example, every \$1 invested in wetland restoration generates at least \$15 for industries like recreation, fishing, real estate, and tourism, while filtering pollution and protecting coastal communities from extreme weather and flooding.

Read our article, [From Rewilder to Localizer. Jobs in 2030.](#)

But the world still needs convincing and a group of 24 international leaders from government, business and finance wrote the report. The authors estimate that an astounding \$90 trillion will likely be invested over the next 15 years in energy, urban infrastructure, land use and agriculture, which would not only begin reversing the advance of climate change but greatly improve quality of life.

They emphasize the importance of finalizing an international climate agreement because consistent government policies will create an all-important level playing field that gives companies and investors the signal they need to get serious. Without it, renewable energy could plateau over the next five years.

Their 10-point action plan lays out a path that fights both climate change and poverty by stimulating the global economy in the right direction.

1. Integrate climate action and risk into strategic economic decision-making;
2. Create the confidence needed for global investment and climate action by entering into a strong, lasting and equitable international climate agreement;
3. Phase out subsidies for fossil fuels (which are still rising) and agricultural inputs and incentives for urban sprawl;
4. Introduce strong, predictable carbon prices as part of good fiscal reform;
5. Substantially reduce the capital cost of low-carbon infrastructure investment;
6. Scale up innovation in key low-carbon and climate-resilient technologies and remove barriers to entrepreneurship and creativity;
7. Make connected and compact cities the preferred form of urban development;
8. Halt deforestation of natural forests by 2030;
9. Restore at least 500 million hectares of degraded forests and agricultural land by 2030;
10. Accelerate the shift away from polluting coal-fired power generation.

Evidence of Non-Action

Another [report](#) gives us insight into the consequences of non-action. 22 million people were displaced last year because of extreme weather events and the risk of being displaced has doubled over the last 40 years, according to the Norwegian Refugee Council's Internal Displacement Monitoring Centre.

"Displacement caused by disasters is a global phenomenon that is growing in scale, frequency and complexity," says Jan Egeland, Secretary General of the Norwegian Refugee Council.

[<ReadMore>](#)

Scientists Come Up With Transparent Solar Panels

Source Name: *Wonderful Engineering*

Scientists are working really hard to come up with means of shifting to a type of renewable energy that is easy to implement and efficient enough to match our energy requirements. Out of all the ones explored so far, solar energy appears to be the most successful candidate. However, think of solar energy and solar panels and what you imagine right away are fields of blue Silicon or patchwork that covers the roof of buildings. However, scientists have come up with a new type of solar panel that can be affixed directly over a window in order to make most out of the sun's energy while being transparent too. The technology has the potential to unlock doors to self-sufficient buildings or even mobile phones that won't require charging. The researchers at Michigan State University has developed and named it 'transparent luminescent solar concentrator' and according to the team this can be used on buildings, mobiles and 'any other device that has a clear surface'. Invisible Solar Panels Assistant Professor of Chemical Engineering and Materials Science, Richard Lunt, says; "No one wants to sit behind coloured glass. It makes for a very colourful environment, like working in a disco. We take an approach where we actually make the luminescent active layer itself transparent.' Invisible Solar Panels He says the invention makes this possible by employing the use of organic molecules that have been specifically designed to absorb particular invisible wavelengths of sunlight. He further said; 'We can tune these materials to pick up just the ultraviolet and the near infrared wavelengths that then "glow" at another wavelength in the infrared.' This infrared light is then guided to the plastic's edge from where it is converted to electricity by making use of photovoltaic solar cells. Lunt stated; 'Because the materials do not absorb or emit light in the visible spectrum, they look exceptionally transparent to the human eye. It opens a lot of area to deploy solar energy in a non-intrusive way,' he said. 'It can be used on tall buildings with lots of windows or any kind of mobile device that demands high aesthetic quality like a phone or e-reader. Ultimately we want to make solar harvesting surfaces that you do not even know are there.' Invisible Solar Panels.

However, still more work is required to bring the efficiency up to par. As of now it has 1% efficiency that will rise to 5% when developed fully.

[<Source>](#)

Scientists reveal 'fair system' for countries to tackle climate change

By John Vidal, for *theguardian.com*



A man walks by the polluted waters of Guanabara Bay near Rio de Janeiro. Brazil would have to cut emissions by 22% to do its fair share. Photograph: Buda Mendes/Getty Images

Rich nations should make the deepest emission cuts and provide most money if countries are to share fairly the responsibility of preventing catastrophic climate change, says a major new study.

Calculations by Stockholm Environment Institute (SEI) scientists and Friends of the Earth suggest the UK would need to make cuts of up to 75% on 1990 emission levels by 2025

and would also need to transfer \$49bn (£30bn) to developing countries. The US would have to cut slightly less, but transfer up to \$634bn to make a fair contribution.

But in a fair system of shared responsibility, most developing countries would be net receivers, says the report, released on ahead of Ban Ki-moon's climate summit in New York on Tuesday. Kenya would receive \$2bn, and be allowed to increase its emissions by more than 50%, while Peru would be allowed to double its emissions and receive \$6bn. South Africa would only have to cut emissions marginally, but would receive \$13bn, and the Philippines would be given \$6bn, although it would have to cut emissions by up to 46%.

The first scientific attempt to link precise emission cuts and the money needed to hold temperatures to a 1.5C rise by 2025 takes UN data and calculates each country's "fair share". It does so by factoring in how much carbon each country has emitted historically, how much wealth it has and its population. The principle of fairness, and the right of some countries to receive support, are accepted in the UN climate talks.

Given its population, wealth and limited historical responsibility, China could argue that it has the right to increase its emissions by about 40% by 2025, but if the world is to hold to a 1.5C target it needs to cut its emissions on today's levels by 25% to 45%. "That difference could cost China up to \$497bn – transfers that would need to be made via access to technology," says the report.

Equally, Russia is said to deserve financial help to move away from fossil fuels given its fall in emissions since the end of the USSR and its relative poverty. But Brazil would get almost

no financial support and would have to reduce its emissions by 22% on 1990 levels to do its fair share.

"In the Philippines we know we have to take action, and the analysis shows that on our own we can only increase our emissions by 40% or so by 2025, which is less than what is currently projected. We are struggling to stop the expansion of coal in order to meet that fair share," said Lidy Nacpil, of the Jubilee South-Asia/Pacific Movement on Debt and Development.

She added: "But the science also shows that the Philippines fair share will not be enough, and to stop climate change we must do more to reduce emissions than would be expected.

"We are demanding the transfer of resources in order to do that, estimated here to be up to \$9bn a year by 2030. We call this a part of the climate debt owed to us and it is needed if we are to confront climate change while still responding to the needs of people.

"These deep cuts have to happen. That's the realistic demand from people facing the full brutal force of climate change."

Asad Rehman, from Friends of the Earth, said: "It's the wealthy industrial nations that are largely responsible for the climate crisis we currently face, so it's only fair they face up to their responsibilities by making large cuts in their emissions and funding climate action in the developing world too.

"It's a basic moral principle that those with more responsibility have to take more action, and also that those with more wealth contribute more. What should each country do is an ethical question."

[<ReadMore>](#)

Some Rare Good News: Blue Whales Return, Ozone Hole Shrinks

SustainableBusiness.com News

Time for some rare good news! Blue whales - the largest animals in the world - are back to historic numbers and the ozone hole is closing.

When it comes to animals and plants that we share this planet with, these days we're thrilled if the many on the verge of extinction make even a small comeback.

But in unusually great news, blue whales have reached the same population levels they were at before human interference. About 2200 blue whales live along the west coast from Mexico to Alaska, up from a mere 750 in the 1930s, when they were hunted to near extinction.



Blue whales grow to 110-foot long and weigh up to 330,000 pounds. They live in oceans around the world, but this study, published by NOAA scientists in Marine Mammal Science, focuses on the relatively small population off our west coast.

When hunting stopped, the whales recovered, and are now protected in California's marine preserves.

They still have a long way to go in other parts of the world - they are at 10-20% of historical populations in Chile and only 1% in Antarctica, where there were once 240,000 blue whales.

"They are increasing as fast as they can - about 10% a year, but at that rate their numbers will double every 10 or 11 years or so, so you can see how it will take many more decades before they get back to where they were," says Trevor Branch, senior author of the research and Assistant Professor of Aquatic and Fishery Sciences at University of Washington, told the Washington Post.

Why are their numbers so low in Antarctica? Because the hunting frenzy didn't end until the early 1970s. That brings us to Japan, which is one of three nations intent on continuing whaling ... in a sanctuary set aside for whale recovery - Antarctica's Southern Ocean Whale Sanctuary. They hunt minke whales, not blue whales.

This year, the International Court of Justice - the United Nation's top court - issued a binding decision (which means it can't be appealed) in a landmark case, *Australia v. Japan*. It ordered Japan to halt its annual whale hunt in the Antarctic and to revoke all whale-taking permits. But Japan says it will go whaling this year regardless.

Ozone Layer Recovering

Demonstrating the power of international treaties, scientists have detected a statistically significant, sustained increase in stratospheric ozone, 35 years after signing the Montreal Protocol.

After sounding the alarm in the 1980s, the treaty was signed in 1987, phasing out synthetic CFCs. Unfortunately, they were replaced by HFCs, which the world is now working on phasing out.

[<Source>](#)

These 5 companies strive to convert CO2 to cash

By Heather Clancy



A growing list of innovative companies is dedicated to reducing carbon dioxide and other greenhouse gas emissions by turning them into something else entirely. Unlike traditional carbon-capture technologies, the focus is on creating something that could produce a stream of revenue while addressing emissions.

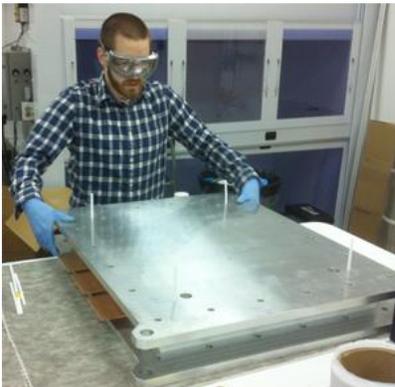
1. Liquid Light

Liquid Light uses an electro-catalytic process developed by a team led by Emily Cole, company cofounder and chief science officer, who began researching the idea at Princeton University about 10 years ago. The startup just raised \$15 million more to create a pilot installation of its technology, which catalyzes carbon dioxide into valuable chemicals such as ethylene glycol.

The first focus of Liquid Light's approach is ethylene glycol, commonly used to make PET-based plastic bottles or antifreeze and the center of a \$27 billion annual industry. But it could be applied toward producing other chemicals, such as propylene, isopropanol, methyl-methacrylate and acetic acid.

Not only is carbon dioxide readily abundant, it is three to 10 times cheaper than other feedstocks used to make plastics and chemicals, according to Cole. Liquid Light will use this latest money to build a larger-scale test of its technology, which could be installed at industrial or manufacturing facilities trying to address carbon dioxide emissions. It will take at least three to five years for the technology to reach commercial availability, Teamey said. The startup will license its approach to manufacturers, rather than build plants itself.

The Series B funding round was led by new investor Sustainable Conversion Ventures along with existing ones, including BP Ventures.



Liquid Light's electrocatalytic "reaction cell" is central to the company's plan to produce major chemicals like ethylene glycol from carbon dioxide.

"Funding is always available when you're solving an important problem," said company CEO Kyle Teamey, who declined to disclose the total amount of money raised so far.

Liquid Light isn't the only innovator aspiring to rethink the value of carbon dioxide as a feedstock.

2. DyeCoo

A partner of both Nike and Adidas, DyeCoo Textile Systems uses carbon dioxide under extreme pressure so that it can be used as a substitute for water in dyeing textiles. Nike opened its first dedicated facility in Taiwan in December, and released its first garments created with

the process in June. The Netherlands-based company was founded in 2008. Other partners include IKEA GreenTech

and Huntsman Textile Effects.

3. Newlight Technologies

Founded in 2003, Newlight uses microorganisms to pull carbon out of methane and greenhouse gases and turn it into cost-effective AirCarbon plastics. It raised \$9.2 million in April, bringing its total capital raised so far to \$18.8 million.

One high-profile partner is Dell, which is using AirCarbon to create carbon-neutral packaging that

started showing up this fall on new Latitude notebooks sold in the United States. Sprint this summer started selling iPhone cases made from Newlight's processes. The material also could be used for a variety of other products, including furniture, bags and caps.

4. Novomer

Backed by a Department of Energy grant and an equity investment (amount undisclosed) from Saudi Aramco Energy Ventures, Novomer has developed catalysts that use CO2 and carbon monoxide in combination with propylene oxide or ethylene oxide to create sustainable polymers. In



Panels coated with a paint formulated with Novomer Polyol. Photo courtesy of Novomer

May, it introduced a line of polyols that can be used commercially in coatings, adhesives, sealants and elastomers.

5. Skyonic

This company positions itself as a next-generation carbon-capture alternative. Its initial project is a \$125 million commercial-scale facility at a cement plant in Texas, where its SkyCycle technology initially will mineralize exhaust and turn it into things such as baking soda or hydrochloric acid.

Eventually, it hopes to harness carbon emissions there and convert it into limestone. Skyonic commercial investors include ConocoPhillips and BP. Its latest disclosed funding was \$12.5 million in May (PDF).

Top image of furniture by KI, which uses AirCarbon to make chairs, via KI

<Source>

Unusual renewables: bacon-powered motorbikes and cars run on chocolate

From batteries powered by sweat to a 3D printed wind turbine - some wacky and wonderful innovations in renewable energy

By Rich McEachran, Guardian Professional

According to the food company, Hormel, it takes one pound of bacon grease to produce one gallon of fuel (4.5 litres), which can cover between 75 and 100 miles on a motorbike. The Minnesota-based business has recently collaborated with a biodiesel firm to build the world's first motorbike fuelled by pig grease, Driven by Bacon. Its creators say that it's environmentally conscious and has the added bonus of emitting bacon-scented fumes.



Using animal grease and fat as fuel isn't anything new, but Driven by Bacon - conceived as part of an advertising campaign - is just one quirky example of how designers and entrepreneurs are finding new ways to meet future energy demands with technology that is disruptive, modular and eco-friendly.

Energy from chocolate waste

Like animal fat and grease, food waste can also be turned into fuel. A few years ago, researchers at the University of Warwick launched a Formula 3 car that ran on chocolate.

Scientists have previously produced hydrogen by feeding sugar-munching bacteria nougat and caramel waste provided by a Cadbury's factory. Fed into a fuel cell, the hydrogen reacted with oxygen and generated clean electricity, which was used to power a fan. Lynne Macaskie, a bioscientist from the University of Birmingham, led the research and observed that the technology could be scaled up for industrial electricity and waste treatment purposes. This would save manufacturers costs by reducing the amount of waste that needs processing.



Hydrogen was produced from nougat and caramel waste from a Cadbury's factory. Photograph: David Levene/David Levene

Batteries operated by sweat

The vision of using bodily fluids to power our future is not new, but it is curious. Some have used glucose and oxygen found in bodily fluids to power implanted biofuel cells, while others have used the salts in urine to power batteries.

Researchers at the University of California, San Diego have developed temporary tattoos that can power electronic devices by generating and storing energy from sweat. The tattoo contains small sensors (biobatteries) that strip electrons from lactate - which is naturally present in sweat - and generates an electric current (around 4 watts, but there are plans to improve it). The challenge is keeping the biobattery charged. Also research showed that a fit person would have to have to exercise harder to keep the battery charged as it takes them longer to work up a sweat.



Sweat biobattery. Photograph: University of California San Diego/ACS (American Chemical Society)

The hope is that wearable technology could have a significant impact on biomedical and military research that involves intense exercise regimes. Aside from using people power as a renewable energy source, biobatteries are more efficient than conventional batteries: they don't explode or leak chemicals. And temporary tattoos can be easily recharged or disposed of.

<ReadMore>

India's Mars mission could be a giant leap

By Priyamvada Gopal, for *The Guardian*



Staff from the Indian Space Research Organisation celebrate after the Mars Orbiter Spacecraft successfully entered the Mars orbit on Wednesday. Photograph: Manjunath Kiran/AFP/Getty Images

After a journey of 300 days and 420 million miles, an Indian satellite has arrived in orbit around Mars. To have done so on an economy ticket – at \$74m “the cheapest interplanetary mission ever to be undertaken by the world”, according to the mission’s leader – only adds to the significance of the event.

India’s space agency – the Indian Space Research Organisation – is a late entrant to the space race, and the success of Mangalyaan (“Mars craft” in Hindi) makes the country an Asian leader in space exploration, if not yet a global one. The mission has been received with delight on India’s social media and across its political spectrum, where “national pride” is the watchword.

To reach a distant world, where others have failed, might have had special significance for Narendra Modi, India’s prime minister, as he finally heads off to the United States for an official visit, having been denied a visa in the past because of doubts over his role in the 2002 Gujarat bloodshed. Modi and his ministers have been quick to assert collective pride in Mangalyaan as part of their vision of a globally ascendant India, ignoring the fact that the mission was actually fostered by their predecessors.

But questions are being asked. The Economist, not a known advocate of the poor or of government spending on social welfare, demanded to know – not only of India but of Sri Lanka, Belarus, Bolivia and Nigeria, all “minnows” with fledgling space aspirations: “How can poor countries afford space programmes?” Cut aid to such over-reaching parvenus, some in Britain have suggested. The criticism seems partly directed at the fact that the mission was not privately funded, as research in the west increasingly is; state money was channelled towards it without any marketable product emerging.

But inquiry and exploration are not the prerogative of advanced capitalist western nations – with the rest of the world eternally condemned to be a footnote in the history of science, even as its historical contributions to knowledge are forgotten. A country, however “largely third world” its “reality”, as one peevish British economist put it, does not have to circumscribe its sphere of achievement to feeding its people, important as that is. Indeed, it can be argued that in a better world the search for knowledge and the quest for social justice would be necessarily intertwined. As the Economist concedes, India’s weather satellites helped reduce the number of deaths during cyclone Phailin last year.

The real problem, of course, is that in economies that are in addition seeking to win the global capitalist growth race, such symbiosis between people and science is increasingly rare. It’s what the progressive economist Jean Drèze may have had in mind when he described the Mars mission controversially as a flag-waving “delusional dream” – when public health and energy needs ought to be met first. Recent floods in Kashmir speak of failures, technological and political, to anticipate and respond to natural disasters. Indeed, placing industrial development over ecological interests often causes such disasters in the first place.

Serious questions remain about whether science and technology – and not just in poorer countries – can have a greater good in mind when the bottom line is profit. The space race between the US and the Soviet Union was not an affordable luxury undertaken for the sake of knowledge, but intrinsically tied to the military-industrial complex. Whatever the intellectual commitments of India’s space scientists, there’s no doubt that the language of national “heroism” and technological “might”, which underpins a dangerous religiously inflected military and nuclear standoff in the region, afflicts much of the praise poured on the Mars mission’s success.

Perhaps national science and technology policy can be fully prised away from corporate and defence industry interests, and placed firmly in the province of economic justice and social progress. But the current administration’s record is not encouraging: Indian ministers have flouted scientific advice by fast-tracking environmental clearances to corporations including mining firms.

Yet India is fortunate in having a long and diverse history of campaigning science movements that have sought to draw both on indigenous knowledge traditions and direct modern scientific research towards progress in health, literacy, environment, nutrition and sanitation. The best way for India to commemorate the success of Mangalyaan would be to reopen a national debate about how science and technology can best be harnessed in the widest interests of its people.

[<ReadMore>](#)

Revolutionary Technology That Can Convert Plastic Waste Into Petrol And Diesel In India

Source Name: **The Better India**

Researchers from the Indian Institute of Petroleum, Dehradun have invented a technology that can convert plastic waste into high-grade petrol, diesel or aromatics. What’s more, this new fuel will cost Rs.30 to Rs.40 per litre! Read along to know more about the technology that can revolutionize the fuel that we use in our country! India will soon become one of the very few countries in the world to convert plastic waste into high-grade petrol and diesel. This technology, developed by researchers at the Indian Institute of Petroleum (IIP), Dehradun, has catapulted India into the league of Germany, Japan and the US - the only other countries to have access to this green technology at present. Rising petrol and diesel prices has been everyone’s misery. And, they are only expected to rise in the future with the increasing number of private vehicles. Apart from that, huge piles of non-biodegradable waste is another issue we have been struggling with for a long time. But, thanks to this incredible development in the country, both the issues will be getting addressed at the same time. A combination of suitable catalysts will convert plastic into gasoline, diesel or aromatics. Apart from that, the technology will also produce LPG as a by-product. According to IIP Director M.O. Garg, the diesel produced through this technology will be of high quality due to almost nil sulphur content. This high-quality fuel meets Euro-III standards and will allow vehicles to run for at least two kilometres more per litre as compared to regular fuel. The newly developed fuel can also be mixed with ordinary fuel and is believed to have better lubricity and combustion quality than regular low-sulfur fuel. The current prices of petrol range between Rs.70 to Rs.80 per litre. The team from IIP claims that this new fuel will cost Rs.30 to Rs.40 per litre, inclusive of the cost of plant, operations, manpower and land. The huge amount of waste generated in the country is one of the reasons behind the low cost of the fuel, which would be ideal for end users like state road transport corporations, defence establishment and railways. “We have applied for a patent. We developed this after nearly a decade of intensive research and are now planning to commercialise the technology although we are still engaged in the process of engineering to design heavy machinery and processes,” Garg said. A similar discovery some time back by two Indian scientists from Orissa had caught the media attention. The technology involved raising the temperature of the plastic waste to between 400-500 degrees Celsius over a clay mineral containing aluminium and silicon to produce carbon rich molecules. They are still looking for sponsors and investors to commercialize this idea. Handling of plastic waste has been a constant challenge in the country. As per Central Pollution Control Board (CPCB), India generates 56 lakh tonnes of plastic waste every year. If the recently developed technology by IIP is commercially implemented in a proper manner, it can address the country’s problem of rising hazardous waste to a great extent.

[<Source>](#)

Union Government launched India's first ethanol-run bus in Nagpur

Source Name: **Jagran Josh**

Union Transport Minister Nitin Gadkari launched ethanol-run environment-friendly public buses in Nagpur on 22 August 2014. These buses were launched as India’s first pilot “The Green Bus project” to test ethanol-run buses. It was claimed that the carbon-dioxide emissions from the bus will be as low as 75 per cent to 90 per cent - depending on the purity of ethanol. The Union government, Maharashtra state government and Nagpur Municipal Corporation will monitor the emissions of the new bus. Ethanol-run bus project would help to reduce India’s petroleum product imports. India imports petrol, diesel and gas worth over six lakh crore rupees each year and can reduce the imports by at least two lakh crore rupees by using alternative fuels. Ethanol-run bus project is the first initiative in this direction. About Ethanol-Run Bus • Bus maker company Scania Commercial Vehicle India Ltd of Sweden has manufactured this bus which runs on using Ethanol as the fuel. • The company says the out of all renewable biofuel options, ethanol is the most cost effective one in terms of availability, infrastructure and accessibility. • Scania also introduced an engine complying with Bharat Stage 5 Norms, which is a huge step to minimize the emissions further. • The green fuel also conserves environment by reducing pollution. About Ethanol • Ethanol also called ethyl alcohol. It is the pure alcohol and is a volatile, flammable, colorless liquid. • It is commonly referred to simply as alcohol or spirits • Ethanol can be produced here in large quantities in India, and it will reduce the dependence on traditional fossil fuels. • Ethanol is produced from molasses, a by-product of sugar mills. • It is also used in thermometers, as a solvent, as an antiseptic and as a fuel.

[<Source>](#)

A Simple Technology That Can Solve India's Clean #Water Problem In Just Rs.3,000

Source Name: The Better India

Worldwide, around 10,000 people die every day due to lack of clean drinking water. The situation is alarming, but bio-sand filters offer a simple and affordable solution. This low cost model purifies water, is locally manufactured and can also help the local community with various livelihood options. And, all of that in just Rs.3,000! Read along to know how it is done. Water borne diseases are the number one cause of deaths worldwide, with WHO and CDC estimates pinning 3.5 million deaths every year to contaminated drinking water. In India alone, around 2,000 people die every day due to lack of clean drinking water, and out of these, children under the age of five are most vulnerable. Most villagers consume unsafe drinking water on a daily basis. Some of these families opt for boiling the water prior to drinking which can be costly. Those who can afford it, buy bottled water to reduce the risks of such diseases, while economically and financially weaker people continue to consume impure water which eventually causes disease and death. In dry regions like Rajasthan, we see a trail of women walking several kilometres just to get a bucket of water. And even that water is not potable by international standards. Don't you think a necessity as basic as drinking water should be easier to avail? Isn't clean drinking water a right, and not a privilege? A Canadian scientist, Dr. David Manz, invented and designed an amazing tool that could solve this problem. He developed a low cost Bio-sand Water Filter that effectively removes all the dissolved particles and pathogens from the water. This slow purifying process manages to remove up to 98% of bacteria, 100% of viruses, 99% of parasites, protozoa, amoebae, and worms, 95% of heavy metals, and with a slight modification, 93% of arsenic. It manages to eliminate illnesses such as Typhoid, Cholera, Hepatitis A, Rotavirus, E-coli bacteria, and other dysentery causing organisms. Tested and approved by various governments, healthcare institutions, and research departments, the bio-sand technology has effectively been introduced in over 66 countries. The low cost Bio-sand filter costs about Rs.3,000 and works for 30 years. It is easy to maintain and filters 84 litres of water daily, enough for 10-12 people, or 70 schoolchildren. There are no ongoing costs, no maintenance costs, and no electricity costs. India definitely needed such a technique that could change the fate of thousands of lives in rural areas. A U.S. based couple Michael Lipman and Cathy Forsberg with Peace Corp and Rotary backgrounds started the South Asia Pure Water Initiative, Inc. (SAPWII) in Karnataka after receiving a start-up grant from a foundation in Connecticut in 2005. When Shivani Kumar, India Country Representative of SAPWII, visited the rural areas to understand their issues, she was shocked to see the conditions that existed. She saw a pond where children were bathing and then drinking the same dirty water. In other parts of the country, she noticed people defecating in rivers and lakes, and using the same water source for drinking and cooking. "This might be a common occurrence in villages, but it was painful for me to see and I knew I had to do something about it," Kumar says. Having spent all her life in the U.S., Kumar was unable to accept the fact that clean drinking water was unavailable to thousands. She states, "After air, we need water. Water is Life." The technology was exactly what the country needed. Till date, SAPWII has distributed 12,000 filters, positively impacting 1,50,000 villagers. They run 5-day professional training programmes for NGOs and have developed a network across the country consisting of 90 NGOs in 22 states. Through the network, 25,000 filters have been distributed. "The way to spread this technology quicker and faster is through India's NGOs. We still have a long way to go," says Kumar. How does it work? The Bio-sand filter is made of locally available cement, sand and pebbles. It consists of various layers of sand and pebbles, and a 2-inch standing water layer known as the "bio-layer". The dirty water is poured on top, and meets with the bio-layer where bacterial predation occurs. Then the water moves through the filtration sand and, because of an electrostatic charge, viruses adhere to the fine sand and are trapped within. This is known as adsorption. Furthermore, because there's no food, no light, and no oxygen, further pathogen die-off takes place. The water then flows down into the pebbles and comes back up in an outlet tube, and is stored in a clean water container with a lid to protect it from re-contamination. "It's really a case of nature purifying nature. This simple, eco-friendly solution is found within nature itself. I still get amazed!" says Kumar. NGOs work in different ways. Sometimes they sell the filter to an individual user who then maintains it. Sometimes a villager can receive microfinancing, while others are subsidized from their local NGO. It depends on which model works in a particular village. "The idea is to inculcate the sense of ownership amongst villagers. It should not be treated as charity. When villagers contribute even Rs. 500 towards their filter, they are more likely to value it," Kumar says. The challenge "The biggest challenge has been to spread awareness among people about the importance of clean drinking water. They are accustomed to their lifestyle – even though they spend a lot of sick days, yet there's a resistance to something new. But we are trying to change that through more awareness campaigns and with the help of media," says Kumar. SAPWII also conducts sanitation and hygiene education since it is closely related to clean drinking water. Another challenge of the Bio-sand filter is the heavy weight, especially in mountainous regions. However, mobile units can help address this issue. Plastic versions have their own limitations and don't last as long, so concrete filters are still preferable. Scaling up SAPWII has shown a 300 percent growth this year alone, and demand for these filters is rising. They

need more volunteers and training programmes to engage more people. They are also open to suitable partnerships which could help them leave a bigger impact. "No one person or NGO can bring a change alone. We need to work collectively for the clean water cause, while keeping in mind the revival and sustenance of livelihoods of rural people", says Kumar. SAPWII has invited professional trainers from Friendly Water for the World (FWFW) to train the NGO's of India. They are also looking at fundraising to sustain their model. How you can help? "Whenever you see a need, just jump in and do it," Kumar says. Water is a basic necessity and everyone has the right to access clean drinking water. You can help the initiative by being a part of their training programmes, donating filters to a village through their Adopt-A-Village program, or just spreading awareness about the amazing technology that can change the lives of thousands of people in the country. "The heart and soul of India lies in its villages. Come join our cause or whatever cause touches your heart," Kumar says. Water is a basic necessity and everyone has the right to access clean drinking water. Let's help people exercise this right.

[<Source>](#)

Three lakh LED street-lights across Kolkata soon

Source Name: India TV News

After the success of a trial installation of 300 LED street-lights in Kolkata, the energy-saving option will be seen across the entire city soon, an official said Tuesday. The Kolkata Municipal Corporation (KMC) participated in a unique global trial of LED outdoor lighting organised by The Climate Group (TCG), an international NGO, in 2011-2012. Other collaborators included the West Bengal Pollution Control Board. "After the success of the pilot of our Light Savers project, we are planning to extend it to the entire city which would need about three lakh lights. We are hopeful of implementing it next year. We are in talks with the KMC," Aditi Dass, director for programmes at TCG, told IANS on the sidelines of a climate change conference organised by the CII here. LED (light-emitting diode) lights have a lifespan of 10-12 years or 50,000 hours of burning. Normal filament bulbs can be used for a few months. In addition, the LED light is more directional and visibility is greater. As part of the pilot, 300 LEDs were installed in various areas, including along the S.N. Banerjee road, a major roadway near the KMC headquarters. The LEDs replaced the yellowish high pressure sodium (HPS) lamps previously used in the same location and 52 percent of energy saving was achieved. The cost of the project was Rs.1.32 crore. The venture was co-funded by the power ministry, through the Bureau of Energy Efficiency, and the KMC. The scale-up, Dass said, would be via energy service company or energy savings company (ESCO) mode. TCG has also worked with the Haldia Development Authority (HDA) to put up 1,000 lights that saves the authorities Rs.5 lakh per month, Dass said.

[<Source>](#)

Cement which reduces CO2 emission developed

Source Name: Zee News

The researchers of Switzerland, India and Cuba have come together to develop limestone calcined clay cement (LC3) which will help reduce carbon dioxide emission (CO2) by almost 30 percent. The research aided by the Swiss government is a new blend which substitutes up to half of the carbon intensive materials traditionally used to make cement. "The LC3 project is an example of scientific and technical collaboration between Switzerland and India. The innovative cement production process on which these institutions are working is of great economic and environmental significance," Switzerland Ambassador Linus von Castelmur, told IANS Tuesday. The LC3 is a synergetic hydration of clinker (a dark grey nodular material made by heating ground limestone and clay at a temperature of about 1400-1500 Celsius), calcined clay and crushed limestone to achieve the performance required from commercial cements, with clinker factors as low as 0.40. It is also said that the raw materials are easily available in many of parts of India and Cuba. Having completed with the first phase, the new cement also has lower processing and capital investment which can be economically favourable to standard cement production. India is the first country where cement was tested in laboratory and in the field. India is the second largest producer of cement accounting for around eight percent of the country's industrial carbon dioxide emissions. "The testing and application phase is over, now it has to pass through standardisation committee before it is accepted by the industries. The research which has been done will not be a patent protected but available to everyone," Castelmur said. The project is at the tune of \$4.3 million and has researchers from Federal Institute of Technology, Lausanne; Indian Institute of Technology (IIT) Delhi, Mumbai, Chennai, and Technology and Action for Rural Advancement.

[<Source>](#)

Climate Change: Raising Ambition, Delivering Results

November 3 – 4, 2014

Chatham House, London UK

The 18th Annual Chatham House Conference on Climate Change is being organized at Chatham House, London on 3rd and 4th November 2014. The conference will take stock of developments in 2014, including the latest science, the finding of high-level commissions, initiatives from the business community and the UN Secretary-General's High Level Summit at the end of September. Looking forward to COP 20 in Lima and beyond, this conference will examine opportunities to raise ambition and convert this into results.

In particular, it will:

- Review the latest science on climate risk and the implications for business, society and politics
- Examine the benefits of a low carbon economy, and assess the costs of climate action and where they fall
- Discuss concrete measures to decarbonize key sectors and the barriers to action
- Identify the critical path to the UNFCCC's Conference of the Parties (COP 21) in 2015, and look at whether, and how, support for ambitious action can be built among publics, business and politicians

Among keynote speakers renowned personalities like Jeremy Bentham, Vice President, Global Business Environment, Shell, Jos Delbeke Director General for Climate Action, European Commission, Manuel Pulgar-Vidal Minister of State for Environment, Peru; President COP20 are there. Speakers from different countries of Europe, Asia, US will give their deliberations.

This conference will offer a unique opportunity to network with senior officials from businesses, government, NGO's and academic institutions.

[<ReadMore>](#)

7th International Symposium on Non-CO₂ Greenhouse Gases (NCGG7)

November 5-7, 2014

Amsterdam, the Netherlands

7th International symposium on non-CO₂ Greenhouse Gases (NCGG7) is scheduled to take place on 5th to 7th November, 2014 in Amsterdam the capital city of Netherlands. The scope of NCGG7 will be the innovations in the science, technology and policy aspects of controlling non-CO₂ greenhouse gas and precursor emissions. The NCGG conferences pay attention to: sources, sinks, and atmospheric processes of non-CO₂ greenhouse gases; mitigation options and emission reduction technologies and practices; policies and measures, both in the public and private sectors; and the science-policy-industry interface.

The themes of the conference are: Integration and Innovation, Sources, sinks and inventories, Atmospheric processes and Policy implementation.

[<ReadMore>](#)

2014 2nd International Conference on Environment Pollution and Prevention (ICEPP 2014)

12-13 November, 2014

Auckland, New Zealand

The 2014 2nd International Conference on Environment Pollution and Prevention (ICEPP 2014), Auckland, New Zealand, 12-13 November, 2014. ICEPP 2014 is sponsored by the Asia-Pacific Chemical, Biological & Environmental Engineering Society (APCBEEES). It is one of the leading international conferences for presenting novel and fundamental advances in the fields of Environment Pollution and Prevention. It also serves to foster communication among researchers and practitioners working in a wide variety of scientific areas with a common interest in improving Environment Pollution and Prevention related techniques. ICEPP 2014 is the premier forum for the presentation of technological advances and research results in the fields of Environment Pollution and Prevention. ICEPP 2014 will bring together leading engineers and scientists in Environment Pollution and Prevention from around the world. The topics of interest include; Air pollution & treatment, Biofuels, Desalination, Energy Management, Environmental Protection, Environmental Sustainability & Development, Greenhouse Effect, Global Warming & Climate Change, Groundwater Issues, Pollution & Health Issues, Renewable & Non-Renewable Energies, Soil Pollution & Treatment, Wastewater Management & Treatment and Water Pollution and Treatment. Delegates from different part of the world are expected to participate in the conference.

[<ReadMore>](#)

VII WAC, International Conference Balancing Development and Environment (Economic Growth with Environmental Sustainability)

20 - 21 NOVEMBER 2014,

NEW DELHI, INDIA

International Conference "Balancing Development and Environment is organized by Aqua Foundation on 20th and 21st November, 2014. VIII WAC 2014 is being organized with the theme 'Balancing Development & Environment (economic growth with environmental sustainability) is aimed at bringing together experts and specialists in food, water, climate change and energy, development partners, civil societies, academia, and environmentalists. The Conference will provide an opportunity to the planners and policy makers to listen attentively and act on the recommendations speedily to meet the challenges of this decade and beyond. The themes broadly describe the focus areas which include; Development and Resource degradation nexus – Impacts of development projects, Role of Urban Planning in sustainable development, Mining Sector & Coal Mining Sector, Oil & Gas Sector, Construction & Infrastructure Sector, Traditional Wisdom on Development with Environment Conservation, Protection of the atmosphere Vertical Farming, Role of women towards sustainable and equitable development, Children and youth in sustainable development, Strengthening the role of non-governmental organizations: partners for sustainable development.

[<ReadMore>](#)



The Venice 2014 Symposium is being organized by The Symposium is organized by the International Waste Working Group (IWWG) and *Ordine degli Ingegneri della Provincia di Venezia*, with the scientific support of the Universities of Queensland, Padova, Hokkaido, Rostock, Trento, Hamburg University of Technology and Venice International University during 17th and 20th November 2014, at island of San Servolo, Venice, Italy. The aim of the Venice 2014 Symposium is to focus on the advances made in the application of technologies for energy recovery from biomass and waste and to encourage discussion in these fields. Topics of interest include Biomass and waste characterisation as a potential energy source, Renewable fuel (Biodiesel, Bioethanol, Gas liquification, Hydrogen), Anaerobic digestion, Refuse-derived fuel / Solid recovered fuel (RDF/SRF) and Climate change and Sink.

[<ReadMore>](#)

The Economic Times, Delhi dated August 26, 2014

Why Environment-Law Firms Are Blooming

Driven by corporate demand for their rare expertise, legal firms specialising in environment law are having a field day, reports **Megha Mandavia**

Copernicus Marg is one of the 10 roads peeling off from the Indian Gate C Hexagon in the Capital, and not much traffic enters it. Yet, during peak hours of the working day, the neck of even this prim two-lane road has a tendency to get choked for just a wee bit, as cars temporarily block one lane on a small stretch adjoining an old building. Lawyers in white shirts and black coats can be seen entering or exiting cars on the building, or just walking around, a phone on the ear.

The blue board on Copernicus Marg announces the building: National Green Tribunal (NGT). This forum, set up in 2010 to challenge orders passed by the ministry of environment, is increasingly seeing more activity, and one of the direct beneficiaries of that action is Sudhir Mishra.

Mishra is the founder of niche law firm Trust Legal, which deals with environment and health litigation. Till a few years ago, Mishra only had non-govern-

ment organisations (NGOs) as clients. But today, several business houses are queuing up to seek litigation and advisory services from him. The same is the case with Sanjay Upadhyay's firm in Delhi, Enviro Legal Defence.

Fringes To Mainstream

India, which has seen the investment cycle grind to a halt in the last three years, is seeing more demand for environment lawyers to rescue businesses from huge losses arising out of poor compliance and unfavourable verdicts. As the government became more stringent about implementing environment regulations, and set up the NGT, Indian companies faced cancellations of projects worth thousands of crore of rupees.

A look at the judgments passed by the NGT between May 2011 and July 2014 shows that the maximum percentage — 35% — related to environment impact assessment studies, which a project pro-

ponent has to carry out while applying for an environment clearance. This was followed by cases related to pollution, 31% (See graphic).

Businesses are not only seeking lawyers to fight cases against NGOs and challenge government rulings. They are also engaging legal help right from the beginning of a project to avoid differences with the authorities at a later stage.

This is a sea change from a few years ago, when environment lawyers in defence of business houses was not even a concept, according to Mishra of Trust Legal. Environment lawyers mainly represented project-affected people, and companies appointed corporate lawyers on a case-by-case basis.

But this equation is changing. "Now, companies are involving lawyers right from inception," says Ranjit Prakash, senior partner at HSA Advocates. "Lawyers are involved in drafting contracts and doing due diligence. They are checking whether the company is compli-

ant with the Environment Protection Act and the Forest Conservation Act before they start the project."

Small Pool Of Lawyers

HSA Advocates, one of the leading law firms in regulatory practice, is currently setting up a separate vertical to deal with environment litigation. Prakash expects "tremendous growth" in this vertical in the next four to five years.

Another big law firm Economic Laws Practice has made environment law as one of its focus areas. ELP partner Vikram Nadkarni says corporates are becoming conscious about forest rights, environment rights and tribal rights. He adds that environment law is still a small area, but it is growing and affects almost all sectors.

"Companies are increasingly doing a pre-feasibility environment audit with the help of social scientists, local communities and environment lawyers,"

says Mishra. "They are submitting these reports to agencies for financial closures."

Many funding agencies and foreign investors, say officials of law firms, have started seeking clarity on compliance to environment laws before closing deals or funding projects in India. But the pursuit to engage environment lawyers is not easy as they aren't many around. According to ADN Rao, an environment lawyer with the Supreme Court, there is a serious dearth of people with genuine knowledge, and not all corporate lawyers understand this subject.

Sanjay Upadhyay, also a Supreme Court lawyer, says India only has five or six dedicated environment lawyers. "Environment law has become complex over the years, and lawyers need to spend time on the field to understand ground realities," he says. The demand for their services is there — and growing.

megha.mandavia@timesgroup.com



Deccan Chronicle, Hyderabad dated August 27, 2014

Green touch for city schools

■ 'Green' schools to take movement forward; municipal and rural schools in AP, TS being roped in

DC CORRESPONDENT HYDERABAD, AUG. 26

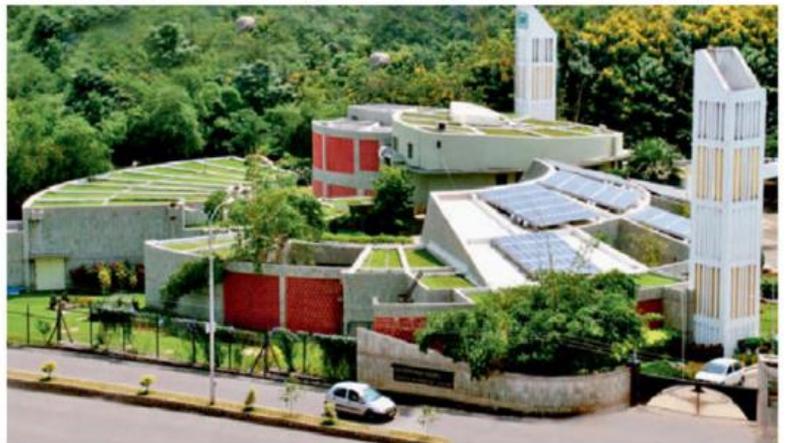
In undivided Andhra Pradesh, Hyderabad had the maximum number of green buildings. With the new government's focus on a "green capital" with green government buildings and offices, several schools are now expected to go green.

The Indian Green Buildings Council will now encourage government-aided, municipal and rural schools to become "green schools" to take the movement forward. A number of schools in the two states are being roped in and both the state governments are thinking about taking the plunge.

Also, more and more independent houses are taking the initiative to go green in AP and Telangana state.

The IGBC will also be launching a rating system for "green schools". "The green buildings movement has been strong due to individuals taking the lead. We also have the first platinum green home in the country in Hyderabad. We will soon be launching the Green Schools programme with municipal schools, government-aided schools and rural schools. We are trying to persuade the children to become our spokespersons to replicate the concept at their homes too," said IGBC chairman Prem C. Jain.

With several green buildings, especially in Hyderabad, undivided AP stood third in the country in terms of the the number of green buildings. Green buildings barely cost 3 to 4 per cent extra and are low on maintenance. Electricity bills can be reduced 40 per cent. Water usage is halved by using recycled water for flushing, plantations and using air compressed low-flow fixtures for showers, and utensil washing. These buildings facilitate natural lighting and cross ventilation.



The Confederation of Indian Industry-Godrej Green Business Centre in Kondapur, Hyderabad.

ON A GREEN HIGH GREEN BUILDINGS ARE CERTIFIED BY THE CONFEDERATION OF INDIAN INDUSTRY ON SET STANDARDS

- Green homes are rated silver, gold and platinum depending on the sustainability quotient
- Constructing green buildings costs 3 to 4 per cent more than conventional buildings, but their maintenance is lower
- Their design facilitates natural lighting, cross ventilation and reduction in usage of electricity
- The rising popularity of green buildings has also given a boost to the green buildings' raw material market. Also, these materials are now less expensive

The green movement has given a boost to many similar businesses. Artificial wood has taken over the furniture industry. The use of VUC paints (which have no oxidised compounds) has also become popular and big brands are supporting this.

— PREM C. JAIN, Indian Green Buildings Council chairman



Raheja Vistas at Nacharam

CITY EVENT TO PROMOTE GREEN BUILDINGS

DC CORRESPONDENT HYDERABAD, AUG. 26

To encourage citizens and other stakeholders to be a part of the country's "green buildings movement", the Green Building Congress will be held between September 4 and September 6, 2014, at the HICC in Hyderabad.

There will be seminars on green homes, existing buildings, green products, renewable energy etc. More than 5,000 delegates are expected to participate. The congress will also have a display of more than 100 green building products and technologies.

Many architects and developers will share innovative and eco-friendly ideas. The seminar will also launch the IGBC Green Building Rating System for green schools, metro rails and new buildings.

Deccan Chronicle, Hyderabad dated August 27, 2014

City homes aim for better energy, water, waste efficiency

DC CORRESPONDENT
HYDERABAD, AUG. 26

Now it is not just the big corporates and five-star hotels, but many homes in Hyderabad are transforming into green homes to attain complete sustainability.

The Avani Residence at Banjara Hills, Mahalakshmi Courtyard at Kondapur, and many others have efficiently developed concepts and designs with green solutions and have been certified as model homes by the Confederation of the

Indian Industry (CII) Green Building Council.

These homes are certified by the CII on the basis of priorities and national standards set across the country that include conservation of natural resources, infrastructure, water efficiency, energy efficiency and handling of domestic waste.

A study that was carried out by the Indian Green Buildings Council found that immediate benefits of green homes as compared to conventional homes include energy conservation to the tune of 30 to 40

per cent and water savings up to 20 to 30 per cent.

It also stated that India now has over 2 billion sq. ft of registered green building footprint, becoming the second country across the world to have achieved this.

"Almost 90 per cent of these homes have adequate daylight and enhanced ventilation as compared to conventional homes. This reduces more than 70 per cent of power consumption during the day. Today, green homes are on a high and are evoking an excellent response.

- A study that was carried out by the Indian Green Buildings Council found that immediate benefits of green homes as compared to conventional homes include energy conservation to the tune of 30 to 40 per cent and water savings up to 20 to 30 per cent
- India has more than 2 billion sq. ft of registered green buildings footprint

The IGBC Homes has registered close to a billion sq. ft now. This is an amazing

shift. Today, stakeholders are demanding green, and the design strategies without any incremental cost can deliver a green home," said S. Raghupathy, executive director, CII Godrej Green Business Centre, Shadnagar.

Green homes are rated silver, gold and platinum depending on the sustainability quotient.

Avani Residence at Jubilee Hills, Raheja Vistas at Nacharam, Quinscent Heights at Raheja Mindspace, Divyasree NSL Infrastructure Private Limited at Divyasree NSL

Orion B6, Sagarsoft India Limited at Office Building of Srikanth Reddy and Others, National Remote Sensing Centre (NRSC) at Shadnagar, Tata Consultancy Services Limited at Gachibowli, Hotel Park at Somajiguda, are all green buildings.

Mr Raghupathy also mentioned that the cost of green materials is seeing a downward curve.

"High reflective paints, waterless urinals, high performing glass, insulation materials and wood substitutes are good examples," he added.

Almost 90 per cent of these homes have adequate daylight and enhanced ventilation as compared to conventional homes. This reduces more than 70 per cent of power consumption during the day. Today, green homes are on a high and are evoking an excellent response. The IGBC Homes has registered close to a billion sq. ft now

— S. RAGHUPATHY, Executive director, CII Godrej Green Business Centre, Shadnagar

Deccan Chronicle, Hyderabad dated August 28, 2014

Green cheer as clay idols catch on

DC CORRESPONDENT
HYDERABAD, AUG. 27

The trend of clay Ganesh idols is making a comeback much to the delight of environmentalists. According to sellers and idol makers, an increase of about 50 per cent in the sale of green Ganesh idols has been seen in various parts of the city when compared to last year.

"I sell small idols of about 1-foot height. Last year, till this time, I had sold about 20 small idols, but this time, I have sold more than 30 already, and I hope I will be able to sell more by Friday," said a trader from Narayanguda who sells both varieties of Ganesh idols, clay and plaster of Paris.

Many have found ways to make these clay idols attractive by giving them to artists who paint them with watercolours or acrylic paints.

"I am a small-scale artist and since the clay idols caught on, people have started coming to me asking me to paint them, paying me a token amount," said Jyoti, an artist.

Various authorities like the Pollution Control Board and the Hyderabad Metropolitan Development Authority have also been campaigning and selling clay idols at subsidised cost in order to protect the lakes from getting polluted with POP idols.

"This year, there is a great demand and the department has already sold 30,000 small Ganesh idols. The supply has fallen short this year as there are still many people who want to buy the idols," said R.P. Kajuriya, member (environment), HMDA.

The buyers this time include doctors, IT professionals, people living in gated communities and also schools.

The Times of India, Delhi dated August 28, 2014

The Times of India, Lucknow dated August 28, 2014

Aware Lucknow chooses eco-friendly Ganesh idols

Uzma Talha | TNN

Manoj Chhabra



GREEN GODS

Lucknow: The environment gods must be happy. According to idol makers and sellers of Ganesh idols, the demand for environment-friendly clay idols has gone up by 50% as compared to previous years.

It's not just big organizations but also individuals who are opting for the idols that come at steeper rates than those made of plaster of Paris.

"Like eco-friendly Durga idols, the craze for going green on Ganesh Chaturthi is a step towards sustainable development. Of the 50 exclusive eco-friendly pieces painted in herbal colours, about 20 have already been

sold," said Rakesh Kashyap, a shopkeeper in Niralanagar.

"These idols, imported from Kolkata, range from 3ft to 5ft in height and Rs 150 to Rs 8,000 in prices. The choice is endless," he added.

POP idols, which usually range from Rs 150-3,000 in

prices, do not completely dissolve in water when immersed and also affect fish when they eat up the residue.

"As chemicals increase pollution, I only use natural colours made from flowers to decorate the idols," said Prosenjit Bose, an artist in Daliganj who has come from Kolkata with his team.

Bose, who like last year had got five labourers to make idols using clay imported from Kolkata, was forced to get three more craftsmen this year owing to the overwhelming response in Lucknow.

"The sale of POP idols is limited to decoration. For puja, most people opt for clay idols," said sculptor RS Paul.

E-waste miner Attero gets ₹100cr funding

Anshul Dhamija
@timesgroup.com

Bangalore: Noida-based Attero, which mines precious metals like gold, silver and palladium from electronic waste (e-waste), has raised Rs 100 crore from a clutch of marquee investors led by Forum Synergies.

Existing investors Kalaari Capital, Draper Fisher Jurvetson and Granite Hill India Opportunity Ventures also participated in the Series C round of funding in the Nasdaq recognized technology innovator, which began operations in 2008.

The company holds the patent of a technology, which enables them to extract precious metals from e-waste at an average cost that's 18 times lower than that of existing global refineries. For existing refineries, the average production cost per tonne is \$16,000, while for Attero it's \$1,000 per tonne.

Printed circuit board (PCB), which is the brain of any electronic device, is made from an array of precious metals. Gold wires for instance are used as they are good conductors of electricity and are malleable.

Nitin Gupta, CEO, Attero, says that the company is the second largest producer of gold in the country after Hutti Gold Mines Company, an undertaking of the Karnataka government. While the latter extracts gold from the earth, Attero does it from e-waste and then sells it on the commodities market.

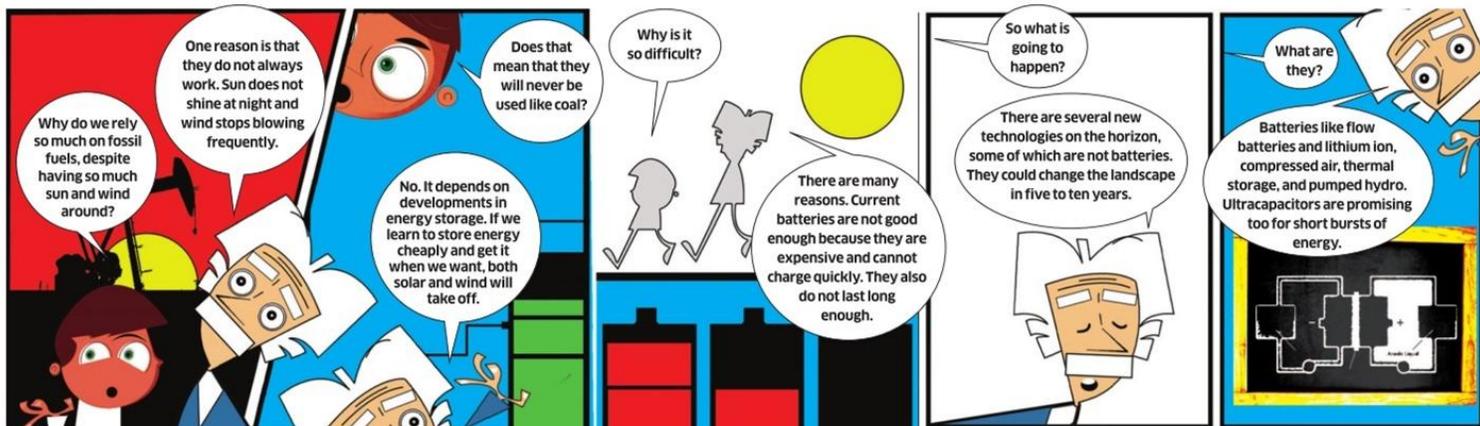
Attero extracts precious metals from more than a million pounds of e-waste a month. But this is just 1% of India's total e-waste generation. "The company is at a significant inflection point in its growth. This funding will help us fast track our business goals," said Gupta.

Attero also refurbishes e-waste and sells the products at competitive prices on the secondary sale market. Samir Inamdar, co-founder and CEO of Forum Synergies, said, "Attero addresses a growing environmental concern in India in a safe and efficient manner. We have well-founded expectations of growth and global impact from the company."

The Times of India, Delhi dated August 30, 2014

Grid Storage and the Emerging Technologies at Play

We need big breakthroughs in electricity storage for two of the biggest future applications: electric cars and grid storage. Various options are being tried to make renewable energy take off in a big way, writes **Hari Pulakkat**



Illustrations: ANIRBAN BORA

Energy storage is a tricky subject, and yet immensely valuable in the long term, but only a few scientists are working on the topic in India. One of them is AK Shukla, distinguished professor at the Indian Institute of Science (IISc) in Bangalore. He is now developing a hybrid supercapacitor, a device that can store electrical energy and has some advantages over the lead acid battery. His first exhibit is a small prototype, slightly bigger than a large matchbox, weighing about two kilos. It can hold enough charge to light a lamp for five hours. The market is thirsting for more. The lead acid battery was invented long ago, as far back as the year 1859. It is still going strong, being the primary means of electricity storage in India, and sustains a growing market of Rs 25,000 crore. But it is not good enough for two of the biggest future applications: electric cars and grid storage. For those we need big breakthroughs in electricity storage, and the supercapacitor, hybrid or otherwise, is just one of the options being tried. "We can charge the supercapacitor much faster than the lead acid battery," says Shukla.

Batteries hold energy through a chemical change in a liquid, and this change is reversed while drawing current from it. Capacitors use physics and not chemistry. These store energy by

keeping two mutually isolated metal plates with equal but opposite charges, and discharges it when the plates are connected.

Supercapacitors also work the same way, except that they hold a tremendous amount of charge. Capacitors charge quickly and discharge quickly, and are used when high power is needed. Batteries charge slowly and discharge slowly, and are used when you need steady supply of energy over long periods. By combining the two, scientists hope to have the best of both worlds, and provide energy as well as power, but it is not so simple in practice. Capacitors themselves are widely being tried as an alternative to battery, but are not good enough at the moment.

So, while we wait for the supercapacitor to improve, scientists are looking at other options. The world needs new storage devices because renewable energy requires them. At the moment, solar and wind energies only supplement thermal and hydroelectric power. So it does not matter too much if the sun does not shine or the wind does not blow. But if they are major suppliers of energy, as expected in a decade, we have to store their energy somewhere to use when the source shuts down.

Good energy storage is thus necessary for renewable energy to take off in a big way. What we have are the good old lead acid battery and a range of

emerging technologies with no clear winners yet. "Demonstrations have started happening now," says Rahul Walawalkar, executive director of the Indian Storage Alliance. "I expect grid storage to ramp up by 2020."

The supercapacitor would be a good option one day, especially when you need short bursts of power. Batteries might be good too, especially some of the new varieties under development. Pumping water up a hill is another option being tried, although it would work only near mountains at the moment. Heating - or cooling - something and then taking out the heat when needed might work too. A serious alternative to all this could be compressing air and releasing the pressure when needed. One could split water using the sun's energy and store the hydrogen for burning later. And so on.

All of these technologies are being developed for grid storage, and all of them have problems of some sort, not the least of which is high cost. Energy policies have a tint of legacy, as they have not been framed considering renewable energy and storage in mind. "Technology and regulatory

policies have to feed off each other," says Pramod Kulkarni, an energy consultant in the US who has worked with the California Energy Commission for over two decades. "When policy takes the lead, it pushes technology."

One of the reasons why this has not happened is that power companies have a greater say in policies than the consumers. "While consumers favour introducing energy storage to the grid the generators will oppose it," says Jay Apt, professor of technology at the Tepper School of Business at Carnegie Mellon University. Introducing storage might reduce profits of the generating companies in large scale, while profits are possible in small scale.

Energy storage will thus make its way first to micro-grids. At IISc, AK Shukla is contemplating building microgrids with storage, if the government agrees to a proposal. To use storage in larger grids, and to keep the costs down, technology has to improve. Indian lead acid battery manufacturers are pushing their products for the grid, but low costs can be achieved only if technology breakthroughs are made.

Apt, a former physicist and astronaut who is now an energy researcher, picks out some technologies to watch in the near future. One is a startup from Carnegie Mellon itself, called Aquion, which uses non-toxic materials to make a battery that

somewhat resembles the lithium ion battery but is as cheap as lead acid. It also lasts twice as long as the lead acid battery. Apt's second pick is an 'organic mega flow battery', also made from earth-abundant and non-toxic materials. It has been developed by Harvard professor Michael Aziz. In recent times, flow batteries have become extremely promising. They are so named because a liquid flows inside the cell and reacts with the electrodes.

There are several kinds of flow batteries, most of which are bulky but some use relatively cheap materials. Scientists expect advances in this technology, thereby making it suitable for grid applications. It might have competition from the lithium ion battery, which has advanced significantly in recent times, and become cheaper and safer.

The other emerging batteries include those made of sodium or magnesium. "New technology is now beginning to see commercial deployment," says Landis Kannberg, who leads the energy storage programme at the Pacific Northwest National Laboratory (PNL), "but they need to be proven in large numbers." The next few years would be exciting to watch, as these new technologies make their way into the market.

hari.pulakkat@timesgroup.com

The Times of India, Delhi dated September 02, 2014

'Green' beats 'lean': Plants in offices boost productivity

London: 'Green' offices with plants make staff happier and more productive than 'lean' designs stripped of greenery, a new research has found.

In the first field study of its kind, researchers found that enriching a 'lean' office with plants could increase productivity by 15%. The team examined the impact of 'lean' and 'green' offices on staff's perceptions of air quality, concentration, workplace satisfaction and monitored productivity levels over subsequent months in two large commercial offices in the UK and The Netherlands.



SEEDING SUCCESS

"Our research suggests that investing in landscaping the office with plants will pay off through an increase in office workers' quality of life and productivity," lead researcher Marion Nieuwenhuis, from Cardiff University's School of Psychology, said.

"Although previous laboratory research pointed in this direction, our research is, to our knowledge, the first to examine this in real offices, showing benefits over the long term. It directly challenges the widely accepted business philosophy that a lean office with clean desks is more

productive," said Nieuwenhuis. Analyses into the reasons why plants are beneficial suggests that a green office increases employees' work engagement by making them more physically, cognitively and emotionally involved in their work.

"Psychologically manipulating real workplaces and real jobs adds new depth to our understanding of what is right and what is wrong with existing work-space design and management. We are now developing a template for a genuinely smart office," said co-author Craig Knight, from

University of Exeter.

"The 'lean' philosophy has been influential across a wide range of organizational domains. Our research questions this widespread conviction that less is more. Sometimes less is just less," Professor Alex Haslam, from the University of Queensland's school of psychology, a co-author of the study added. "Simply enriching a previously Spartan space with plants served to increase productivity by 15% — a figure that aligns closely with findings in previously conducted laboratory studies," Nieuwenhuis said. www.bbc.com/news/health-25281111

The Times of India, Delhi dated
September 02, 2014

'Toned-down' NGT may no longer be the green crusader

Jayashree.Nandi
@timesgroup.com

GREEN CHECK

NGT set up on Oct 18, 2010 under NGT Act 2010 for effective and expeditious disposal of cases relating to protection and conservation of environment and all natural resources

It is equipped to handle environmental disputes involving multidisciplinary issues

Headed by former SC judge, Justice Swatanter Kumar. Also includes 6 judicial and 10 expert members

Delhi is the principal bench; 4 more benches in Pune, Bhopal, Chennai and Kolkata

NGT has the power of a civil court

Any party can move only SC against an NGT order within 90 days of a ruling



IMPORTANT CASES IN NCR

NGT has ruled that no new construction within 10km radius of Okhla bird sanctuary will get a completion certificate. Final decision yet to be taken

Plea for ban on illegal sand mining along Yamuna and its tributaries in UP leads to NGT banning such activities in the entire country

Petition against waste dumping on Yamuna floodplains prompts NGT to issue stringent directions such as 'polluter pays' principle. NGT-appointed panel recommends scrapping of DDA's

Yamuna Riverfront project

NGT directs MoEF and Delhi government to identify and assess status of wetlands in a case related to Dheerpur wetlands

A petition for de-concretizing trees leads to a directive to civic agencies, including corporations and PWD, to de-choke trees across the city

NGT directs Haryana government and MoEF to complete a survey and identify all forests in and around Mangar

erbed. NGT is the finest thing that has happened to the environmental movement in cities like Delhi," said Manoj Misra, an environmental activist who has used NGT to stop covering of storm water drains that can cause flooding and pollution.

Earlier, any such case used to go to the high court and then the Supreme Court. It was time consuming and a lot of damage would be caused by then, says Misra. The case on DTC's Millennium Bus Depot on the Yamuna floodplains, for instance, is being heard in the high court since 2011 but has not been relocated yet.

On the other hand, earlier this year, the environment department of Delhi has ordered closure of several mineral wa-

Despite repeated violations of several NGT orders, the tribunal has extended protection to critical areas like the Yamuna riverbed and the Aravalis

ter plants in Delhi for misusing groundwater.

Not everyone has similar concerns. Most bureaucrats in the environment department and PWD say they have stopped working on projects as cases pile up. "About 70% of our time is spent in preparing affidavits, reports and surveys for the court. It's impractical to say the least," said a senior environment official. Often, the department has to attend

four-five cases at NGT.

PWD is also agitated with stalling of infrastructure projects. For instance, a road construction at Vasant Kunj has been delayed by two years, leading to massive losses for the contractor and traffic jams.

However, dilution of NGT's power will be a setback for the green movement, says Raj Panjwani, president of NGT bar association. "The Supreme Court had referred the need for such a specialized court to the Law Commission, which also recommended that such a body be created." The bar association was constituted recently with 40 members—lawyers and scientists—to take up cases where people don't come forward with petitions.

The Economic Times, Delhi dated
September 02, 2014

Optimising natural resources

A special report on the three-day Renewable Energy India Exhibition and Conference (REI) being held in Greater Noida from tomorrow

Three-day Renewable Energy India Exhibition and Conference (REI) is being held from tomorrow (September 3-5) at the Indian Exposition Mart, Knowledge Park II, Greater Noida. An annual event organised by UBM India, REI aims to accelerate growth of the Indian renewable energy sector by offering sustainable development opportunities to businesses in this industry.

This is the 8th edition and is expected to attract more than 500 exhibitors, 12,000 trade visitors and 1000 conference delegates from more than 35 countries.

Attendees to the three-day event will benefit from the multiple business opportunities existent within the Solar, Wind, Bio-energy, Smart Grids, Geothermal and Energy Efficiency sectors.

The event will bring together decision makers, influencers as well as technical experts and professionals from leading companies involved in the renewable energy generation, transmission and distribution within India and across the globe. The key industry players participating in this event include Refex Energy, Borg Energy, Rolta Power, Tata Power Solar, Enerparc Energy, Proinso, Zevsolar, Dupont, DNV GL, C Sun, Bonfiglioli, Phocos, Waaree, Chemtrols Solar, Emmvee Solar, Juwi India, Mahindra EPC, RRB Energy, Inox Wind, LTI REEnergy, Kosol Hiramrut, Sova Power, Harsha Abakus Solar, ABB, SAPA Group, Schneider Electric India, Fronius, Canadian Solar, Delta Energy, Moser Baer, JA Solar, Vikram Solar, Premier Solar, Yingli Solar, GE India, Centrotherm. The event also boasts of Country Pavilions from Japan, Italy, the USA, Taiwan, Canada and Belgium, workshops and multiple conference sessions and official participation from Indo Italian Chamber of Commerce, ACCIO (Govt of Catalonia), European business and Technology Centre, Piemonte: Agency for Investment, Export and Tourism

REI 2014 is supported by leading associations like

National Solar Energy Federation of India (NSEFI), Solar Energy Association of Gujarat (SEAG), Centre for Study of Science, Technology and Policy (CSTEP), India Smart Grid Forum (ISGF), UK Trade and Investment, and Bloomberg New Energy Finance as Strategic partner.

Elaborating on the focus of this year's edition, Joji George, Managing Director, UBM India, said, "Today what is glaring at us is the need for viable sustainable energy which can mitigate the environmental impact of

imbalance of demand and supply of natural resources in India. That's where renewable energy comes into play. As a first step what is called for, is a concrete and measurable attempt on part of the Indian government as well as industry to partner and have a consistent channel of dialogue and work towards creating favourable policy frameworks to

successfully meet the challenges and optimize the opportunities in the sector. Our focus is to felicitate the same." The three-day event will showcase pavilions from diverse countries like Japan, the USA, Canada, Belgium and Italy. There would also be representation from companies based out of the Catalunyan region, the Spanish hub for renewable energy. Another highlight of this edition of REI would be the 'Start-up' Pavilion, which encourages budding entrepreneurs with a restricted budget to build their business portfolio. The Planning Commission of India will also conduct a session with C STEP.

Eminent speakers like Pashupathy Gopalan, President & MD, Asia-Pacific, GCC and South Africa- Sun Edison Energy India Pvt Ltd.; Craig O'Connor, Director of Business Development - Alternative Energy Group, Export-Import Bank, US; Stefan Muller, COO and Founder Member, Enerpac Energy Pvt. Ltd.; Ravi Khanna, CEO- Solar Business, Aditya Birla Group; and Ajay Goel, CEO, Tata Power Solar would add value to the exhibition.

REI 2014 IS SUPPORTED BY NATIONAL SOLAR ENERGY FEDERATION OF INDIA (NSEFI), SOLAR ENERGY ASSOCIATION OF GUJARAT (SEAG), CENTRE FOR STUDY OF SCIENCE, TECHNOLOGY AND POLICY (CSTEP), INDIA SMART GRID FORUM (ISGF), UK TRADE AND INVESTMENT, BLOOMBERG NEW ENERGY FINANCE AS STRATEGIC PARTNER AND CERTIFIED BY US COMMERCIAL SERVICE

The Times of India, Delhi dated September 02, 2014

MODI PUTS INDIA INC ON ZIP DRIVE

Experts See Revival Signs, But Still Wary

TAM TOI

The stock market is scaling fresh highs with regularity and the rupee has shown signs of stability. The investor mood seems to be lifting and business fat cats are smiling.

While a change in business sentiment and investor mood was only expected after Modi sarkar was sworn in, the initial measures taken by the government seem to have indeed created the perception that doing business in India is now easier and the country has caught the attention of investors.

From tax policy, land acquisition issues, environment approvals, manufacturing to labour laws, the government is slowly putting in place building blocks to ensure India regains the confidence of investors while removing some of the hurdles.

Measures to end a fresh wave of "inspector raj" which had taken its hold on the industry have been initiated with New Delhi urging states to ease the Boilers Act — a tool which industry says is used for little else than harassment. Fresh ideas to push roads, highways, ports and the hobbled power sector are wafting in. A panel has been set up to revamp obsolete laws. The list is long.

The Budget presented by finance minister Arun Jaitley wasn't spectacular in ushering game-changing re-

GREEN SIGNAL

Plans to revamp labour laws, clearances online, addressing transparency and speedier go-ahead apart, decisions by the environment ministry that will ease doing business



No need any more for consent from gram sabhas for prospecting in forests

➤ Smaller coalmine expansion plans exempt from public hearing

➤ Ministry officials do not need to inspect mining projects on less than 100 ha of land

➤ Mid-sized polluting industries can now operate within 5 km of national parks and sanctuaries (SC had set a 10-km limit)

➤ Bunch of industries like coal tar processing units etc to get clearances from state governments

Culturable land less than 10,000 ha can be cleared by state governments

forms but it unveiled some measures to calm investor anxiety over tax policies and signalled the government's intention to bridge the trust deficit.

While 100 days are too short to make a definitive assessment, commentators are already drawing attention to the fact that the Modi government hasn't yet taken the real hard measures like pruning subsidies and cutting government expenditure. This might be customary impatience that often grips arm-chair critics, although it's a fact that hard steps are easier to take in a government's initial years, than later.

But there is talk of tackling the thorny issue. The land acquisition act has been flagged as one of the key areas of concern for India Inc. They say the stringent law will push up project costs significantly.

Finance minister Arun

Jaitley has hinted that some of the stringent provisions may be watered down and the government will consult states to move on the issue. Balancing the interest of farmers and industry is expected to be a tight-rope walk.

The archaic labour laws have been identified for sev-

CLEARING HURDLES

eral years as one of the key roadblocks to faster growth. Moving on its poll promise, the NDA government has taken some tentative steps to revamp the labour laws.

"Perception of foreign investors about India is changing. But sometimes India has disappointed with those expectations because of slow approval for doing business, including for environment," Takehiko Nakao, president of the Asian Development Bank, told *The Times of India* in a recent interview.

The Modi administra-

tion has, however, pushed to approve stalled projects and has provided more flexibility to ensure that the bottlenecks are removed swiftly to get the engines of growth roaring again. But the fast-tracking of environmental regulations and the planned revamp of labour laws have triggered some concerns which the government may have to tackle to ensure balanced and sustainable growth. "The seeds of a turnaround are only starting to be sown. In a sense, this (June quarter) strong GDP figure is another manifestation of the build-up in expectations in the run-up to May's election," said Konstantinos Venetis, economist at London-based Fathom Consulting.

"Now, Mr Modi needs to line up all his 'arrows' and use them effectively."

The entire country will be waiting for that.

Deccan Chronicle, Hyderabad dated September 03, 2014

FINDING | SOLUTIONS

■ Hackathon to be held simultaneously in 50 countries

Techies join climate change fight

DC CORRESPONDENT
HYDERABAD, SEPT. 2

Doing their bit for climate change, a group of about 200 developers, technologists, hackers and app developers from the city will take part in the 0.6 #hack4good, a hackathon against climate change that will be held simultaneously in 50 countries across the world from September 12-14, 2014.

At the event, more than 3,000 software experts will

gather to hack against climate change by building prototypes of technology solutions that address 15 global climate change challenges. Teams will create solutions to problems set by government organisations, non-governmental organisations (NGOs) and experts in the field in 48 hours. The winning teams will present their projects at the UN Climate Summit in September.

A team from Hyderabad took the third place by cre-

ating an app that will create mobile network during any disaster.

"The outcome of this hackathon will result in hundreds of prototype projects that demonstrate innovative technology solutions to have a positive impact on climate by creating awareness, by sending alerts and more. At each location, a judging panel comprising technology leaders and subject matter experts will select the best teams, which will present their projects

as part of Climate Week alongside the UN Climate Summit in New York in September," said Harish Kotra, one of the participants and part of the organising committee.

In #hack4good 0.5, which was held in February this year at the Google India office, over 90 hackers participated. One of the apps built during this hackathon in Hyderabad, called Offline Connect and Communicate, came third. "The app tackled the prob-

lem of communication in a disaster situation using Raspberry Pi devices to build ad-hoc WiFi network that will allow voice communication between Android phones, even when mobile networks are down. Even the other three hacks were from India," Harish, participant and part of the organising committee.

Online registrations are open for all interested Hyderabadis at hack4good-hyd.eventbrite.com.

The Times of India, Delhi dated
September 03, 2014

Long way to go for rooftop solar systems

TIMES NEWS NETWORK

New Delhi: Delhi government still has a long way to go in clarifying the policy before private individuals take the decision to set up rooftop solar systems. The net metering scheme that was announced by the Delhi Electricity Regulatory Commission (DERC) on Tuesday is only a nascent step in this direction.

The most important issue is the financial incentive that will push residents to invest in solar rooftop systems. Other problems are resolving technical issues like uneven height of houses, specifications for orientation of the roof, how much roof space is required, how will these systems be maintained, among others.

"We are glad to know that net meters can be installed and we are open to setting up such systems. But the question is what is in it for us? First the government will have to clarify how much subsidy and what financial incentive will be given to individuals. It must also check whether it is feasible to do these on small roof-

tops of less than 200 sq yards," said Atul Goel, convener of United Residents Joint Action of Delhi who had some meetings with Greenpeace, an environmental NGO studying whether Delhi can implement solar rooftop systems on a large scale.

As of now, projects in Delhi only get a 30% subsidy from the ministry of new and renewable energy (MNRE).

"It's a welcome move that DERC has finally come up with a net metering policy. But

COST HURDLE

how can people use it without a comprehensive solar policy which will specify financial incentive in detail? Only if the incentive is attractive that people would think about it. As of now, a few individuals in Delhi have set up rooftop solar panels to meet their back-up needs because diesel generators cost a lot," said Abhishek Pratap, energy campaigner at Greenpeace India.

The few who have already installed solar panel systems may, however, stand to benefit

immediately from the net metering scheme. Anand Prabhu Pathanjali, who recently conducted a study on Delhi's solar potential, said, "There are very few residences that have set up such systems. Now they can definitely benefit from the net metering scheme. This will also get more people to set up the system in their houses."

There are a few houses in South Extension and Safdarjung Enclave, apart from a few others in West Delhi that have installed solar panels of less than 5kW. The German House of Research and Innovation and WHO building also have panels with over 10 kilowatt peak (kWp) capacity that can benefit from net metering.

The Energy and Resources Institute (TERI) is planning to install a system of less than 100 kWp on their office building. "We don't have much space so we are exploring what can be done. However, we'll probably not generate enough to have more power than our requirements. On weekends we can supply entirely to the grid," said Amit Kumar, adjunct professor, TERI University.

CLEAN POWER

EXISTING PROJECTS FOR RENEWABLE ENERGY

PRIVATE

> A few houses in south and west Delhi (within 5kW each)

> **German House** has two solar PV systems of 10.5kWp

> **India Habitat Centre** (in picture) recently concluded a feasibility study on solar rooftop systems. They can generate 450kWp

> **Tamil Nadu Bhavan** in Chanakyapuri exploring potential of solar rooftop



> Many individuals are generating solar power but agencies have not mapped them

PUBLIC

> Parliament, Thyagaraj stadium, Delhi secretariat, Delhi Metro, ISBT, IGI airport

> **Government buildings** like Vikas Bhavan II and MoEF building



> **Tata Power** Delhi's rooftop solar panel projects across north Delhi

> **Schools** like Jose Martin School, Sector-12, R K Puram; Janki Devi Sarvodaya Kanya Vidyalaya, Mayur Vihar; Sarvodaya Kanya Vidyalaya in Mangolpuri, and Sarvodaya Kanya Vidyalaya in Jwalapuri

> Systems in **government hospitals** may be commissioned by Sept-end

> **World Health Organisation** building of 12kW

Now, sell solar power to discoms

DERC Announces Net Metering Rules; Units Supplied To Be Adjusted In Bills

Richi.Verma@timesgroup.com

New Delhi: Delhi took a huge leap in renewable energy generation on Tuesday. Power watchdog Delhi Electricity Regulatory Commission (DERC) announced regulations for net metering of renewable energy, giving Delhiites a chance to become renewable energy suppliers. The regulations outline how people can generate renewable energy in their premises, and then reduce their electricity bills by the amount of power they supply to the grid. The regulations are expected to be enforced within a week.

While the net metering regulations apply to all forms of renewable energy like solar, hydro and wind, in Delhi only solar generation is feasible. Many households and organizations already generate solar power for their own consumption, but the new regulations will allow them to supply to the grid and receive energy credits or adjust the units supplied against their electricity bills.

DERC chairperson P D Sudhakar said, "With this, consumers can set up their own solar panels and either supply directly to the grid or use it partially. Whatever you

SUPPLY YOUR OWN POWER

HOW TO BECOME A RENEWABLE ENERGY GENERATOR

> Once a consumer is ready to generate 1kWp renewable energy, he can submit an application to discom to connect his generation system to the distribution system. **Forms will be available on discoms' websites and at local offices**

> Discom will then act according to the **guidelines issued under new net metering regulations**

> Two meters will be installed on consumer's premises—**renewable energy meter to measure total renewable energy generated and net meter to measure import/export of energy by consumer from/to Grid**

> Cost of renewable energy meter will be **borne by discom and that of net meter by consumer**. Either party may install a check meter at its own cost

> Discoms will show, separately, energy units exported



and imported, net energy units billed and/or carried forward, if any, in each bill

> If during any billing period, **export of units by consumer exceeds consumed units, surplus units will be carried forward to next billing period as energy credit**

> Discom will raise bills for net electricity consumption only after adjusting export of renewable energy by the consumer to the grid and/or unadjusted energy credits of the previous billing cycle(s)

> **At the end of each financial year, discom will pay consumer for any unadjusted net energy credit as per DERC rates**

supply to the grid, you can draw back whenever you need it". How much power a person supplies and draws back from the grid will be metered. If they draw more than they supply, the difference

will be billed to them. If they draw less, they will be given energy credits in the next billing cycle.

To become a renewable energy generator, a person will have to apply to their ar-

Times View

If the government is serious about promoting the use of renewable energy, it needs to go beyond just providing incentives for people to do so. As an initial step, it could make it mandatory for all builders' apartments and residential plots beyond a certain size to at least have enough solar panels installed to suffice for the home's water heating needs. A similar approach needs to be adopted also towards rainwater harvesting. These are small steps that can be immediately taken and can go some way towards addressing the ecological concerns that any modern society must face up to.

ea's discom for a connection to the renewable energy system. The discom will then allow the connection after analyzing transformer-level capacity. "The capacity of renewable energy system to be installed at any premises shall be subject to the feasibility of interconnection with the grid, the available capacity of the service line connection of the consumers of the premises, and the sanctioned load of the consumer. Minimum capacity for the renew-

able energy system should not be less than 1kW peak," said an official on Tuesday.

Two meters will be installed in the consumer's premises—a renewable energy meter to measure total renewable energy generated, and a net meter to measure the difference between the power drawn and contributed to the grid. Check meters can be installed by either party at their own cost. "Charges for the testing and installation of net meters will be borne by the consumer, and those for the renewable energy meter by the distribution licensee," the regulations state.

Many large-scale power consumers like malls, hospitals, schools and government buildings already generate solar power. "The MoEF building in Jor Bagh generates up to 1MW power which it is unable to use. Now it can supply its excess power to the grid and get adjustments in its power bills. We also hope households will opt for renewable energy generation," said a DERC official. For discoms, the advantage is that any renewable energy they source in this way will count towards their renewable power obligations that they have not been able to meet.

The Economic Times, Delhi dated September 04, 2014

Environmental studies must-pass for LU UG students

Times News Network

Lucknow: Over one lakh students of Lucknow University and 123 affiliated colleges will have to pass environmental studies subject to get their undergraduate degrees. Academic council of LU on Wednesday, in principle, decided to introduce the subject from this academic session.

The university's decision comes in accordance with the University Grants Commission (UGC) directions to introduce environmental studies as a subject in UG.

Students of all streams—arts, science and commerce—will have to qualify the examination once in three years. LU vice-chancellor Prof AK Sengupta said, "Environmental studies will be mandatory to qualify for the stu-

dents. However, no credentials will be added to the main examinations." The modalities and course structure will be framed and tabled in the next academic council meeting, he added.

According to UGC, environmental studies subject will include topics like ecosystems, renewable and non-renewable resources, biodiversity and its conservation, environmental pollution, social issues concerned with environment, human population and its direct relation to environment.

There will also be field work wherein students will visit a local area to document environmental assets like river, forest, grassland and others. Students can also visit a local polluted site, study common insects, plants and birds.

Metro to be solar powered

Abundant sunlight to be tapped; 40% energy to be saved

DC CORRESPONDENT HYDERABAD, SEPT. 3

The Hyderabad Metro Rail could become the first Metro in the country to extensively use solar power.

Metro authorities are planning to install solar panels on the roofs of the stations that are broad enough to harness solar power. "In a city like Hyderabad, which has abundance of sunlight, solar power can be utilised in a good way. Our stations have been designed in such a way that they can harness solar power. We are trying to fit solar panels on the sta-

tion roofs. We are yet to figure out if this power can be directly used for the running of the trains or in

other ways by sending it to the main grid. This technique has already been inculcated in the design.

CLEAN ENERGY FOR METRO



We want this project to set an example and its techniques must be beyond the use of basic fossil fuels," said M.V. Gadgil, chief executive and managing director, L&T Metro Rail, Hyderabad.

"We also have very modern technologies like the regenerative braking, where energy is extracted from the parts braked, to be stored and reused. This power can be either directly used or sent back to the main grid to be used for other activities. This will amount up to 38-40 per cent of the power otherwise used."

Deccan Chronicle, Hyderabad dated September 05, 2014

ECO-FRIENDLY MAGNESIUM BATTERY DEVELOPED IN CITY

DC CORRESPONDENT HYDERABAD, SEPT. 4

A cost-effective, safe and rechargeable magnesium metal battery with natural graphite cathode has been developed at CSIR-Indian Institute of Chemical Technology, Hyderabad, by Dr J. Vatsala Rani and her team at the fluoro-organics division. Technology for rechargeable magnesium battery is not available for commercialisation till date in any part of the world. Materials that are safe

and available have been used and the capacity of the cell is 5 mAh at a voltage of approximately 2.0V. Studies are in progress to improve the capacity of the battery. The cycle life of the battery is established for 800 to 900 cycles and as of now the shelf life of the battery is estimated to be two to three years. The electrode materials are reusable and also biodegradable. The battery is best applicable for stationary application like UPS, inverter, where weight is not the criteria.

Expect 10% Green Fuel Blending in Diesel Soon

Fuel conservation to start from rail, defence sectors & be extended later

Rajeev Jayaswal & Rajat Arora



MOVING FORWARD

diesel substitute and requires no engine modifications up to 20% blend.

Biofuel could be cost effective solution in the long run, besides significantly reducing the country's dependence on imported oil. A Pune-based company is already selling it under Indize brand, which is more than Rs 3 per litre cheaper than diesel, sources said.

Petroleum, road transport and new and renewable energy ministries are keen to introduce biodiesel in the transportation sector, but initially, it will be restricted to the railways and defence sectors because of limited availability of biofuels and

also due to quality issues, sources said. The sectors combine account for about 5% of diesel consumption.

Biodiesel use could be later extended to mobile towers, industrial generator sets and agri-equipment, sources said. Together they constitute about 30% of about 69 million tonne diesel sold in the country annually.

The project was conceived in 2003 by the erstwhile NDA government headed by Atal Bihari Vajpayee.

Railways alone consumes over 3 crore litres of diesel worth ₹16,000 crore annually. "As biodiesel is marginally cheaper by ₹3-3.5 per litre compared to diesel, it will be huge savings for railways, besides reducing the carbon footprint," one source said.

The Bureau of Indian Standards (BIS) has already evolved a standard (IS-15607) for biodiesel, which is also known as B100 on the lines of American and European standards.

LEDs to replace city streetlights

DC CORRESPONDENT HYDERABAD, SEPT. 3

Hyderabad may soon join Puducherry and a few other cities in becoming more energy efficient, where light emitting diode lights will replace incandescent bulbs in some areas to save more energy.

A pilot project in Hitec City and other areas will begin in October first week, wherein more than 700 streetlights will be replaced by LED lights.

The three streets that are included in the pilot project are, Kavuri Hills to Hitec City via Jubilee Ridge Hotel, Mini Charminar to Hitex stretch and from Chandrayangutta. The pilot project will cost about ₹1.2 crore and the energy saved is estimate to be around 45-55 per cent.

There are a total of 3.27 lakh street lights under the GHMC currently. Energy Efficient Services Ltd, a Central government public sector undertaking, is taking up the project. "The commissioner and director of Municipal

Administration of Telangana has given permission to carry out the same exercise in other urban local bodies across the state - to replace 3,000 street lights. The energy efficiency of a 250 watt bulb can be met by just a 150 watt LED bulb," informed Tarun Tayal, senior manager, Business Development, Energy Efficient Services Ltd.

More than 7.5 lakh households in Guntur, Anantapur, West Godavari will also benefit from this concept. Every household will be given two LED lights that will be sold to them at a subsidised price of ₹10, and depending on the analysis of the energy saving, it will be extended to more cities and towns.



From left: Govardhana Chary, G.K. Ramesh Kumar, Shanthi Sagar, A. Chandrashekar, V. Anudeep and Mahitha G.B. Patel, who developed the 'Power Multiplying Machine'. -DC

7 design motor that can multiply power

DC CORRESPONDENT HYDERABAD, SEPT. 4

A group of seven engineers have devised a "Power Multiplying Machine" that can multiply a single input electricity unit using free magnetic energy.

In a live demonstration, the engineers used an input power of 48 Watts and gave an output power of 1470 Watts. This could be used for real time operation for any machines, said the engineers.

"The Power Multiplying Machine is a unique type of motor which takes

only 24 V and 2.5 A (total 60 W) from a DC source. This input power of 60 Watts rotates a 15 kg magnetic disk. The output power calculation is approximately 1400 Watts," said A. Chandrashekar, the leader of the project.

Brigadier Pogula Ganesham, former director of Bharat Dynamic Limited said, "Given the efficiency, the Defence Research and Development Organisation would be the first purchaser of the product. It is an efficient invention and can save lots of energy and is eco-friendly."

The Times of India, Delhi dated September 06, 2014

India inks N-deal, to get access to clean energy from Australia

TIMES NEWS NETWORK

New Delhi: India and Australia on Friday signed an agreement for peaceful use of nuclear energy, which will allow resource-constrained India to import uranium from Down Under.

The landmark agreement was signed after a bilateral meeting between visiting Australian Prime Minister Tony Abbott and his counterpart Narendra Modi. The latter described the deal as a "historic mile-



REACHING OUT: Narendra Modi with PM Tony Abbott in New Delhi stone in our relationship". "It is a reflection of a new level of mutual trust and con-

fidence in our relationship and will open a new chapter in our bilateral cooperation," said Modi at a joint press statement with Abbott.

"It will support India's efforts to fuel its growth with clean energy and minimize the carbon footprint of its growth," Abbott said, adding that the two countries could help the world with their partnership as he grabbed Modi's hand in a show of solidarity.

Water conservation plan to be unveiled on Sept 25

Vishwa.Mohan@timesgroup.com

New Delhi: Government has decided to launch a national scheme to conserve water on September 25 — the birth anniversary of late philosopher and political thinker Deen Dayal Upadhyaya.

The idea is to conserve the scarce resource through a multi-pronged approach, involving state governments, general public and NGOs.

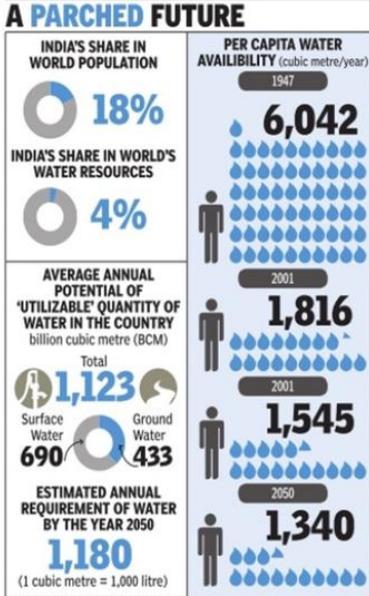
The annual per capita availability of water is decreasing due to increasing population, indiscriminate use and growing pollution. The new scheme may focus on ground water recharge, use of recycled water and promoting better water use practices in a big way in all sectors under a structured nationwide programme.

Announcing the decision to launch the scheme, the union water resources and river development minister Uma Bharti on Friday asked officials of her ministry to prepare the final blue-print of the 'National Water Conservation and Water Enrichment' scheme within 11 days so that it could be kicked off on time.

Seeking free and frank opinion of the officers on various issues, the minister also asked the officials to extend their suggestions "without any fear and hesitation".

Addressing mid-level officers, Bharti even asked them to "send their views in sealed envelopes directly to her" if they have any hesitation in extending suggestions beyond their respective jurisdictions.

Though the minister took note of various issues including delay in the construction of dams and steps to prevent pollution in Ganga and Yamuna, she expressed her concerns over fall in ground water level of the country and highlighted the importance of coordinated action to conserve water. The Central Ground Water Board (CGWB) had recently told the ministry that around 56% of the wells, which are analyzed to keep a tab on ground water level, showed decline in its level in



Water resources minister Uma Bharti addressed officials and took note of various issues including delay in the construction of dams

2013 as compared to the average of preceding 10 years (2003-12) period. It has also been noted that 90% of waste water discharged in rivers does not meet environmental norms while 65% rainwater runoff goes into the sea which is a major wastage. At present, agriculture sector is the biggest user of water in India followed by domestic and industrial sector. Besides promoting better practices to use water in agriculture, the new water conservation scheme is expected to pitch for enforcing 'water use efficiency' certification for industrial and domestic sector. The government has already decided to set up a National Bureau of Water Use Efficiency (NBWUE) under its 'National Water Mission' for this purpose.

The Times of India, Delhi dated September 07, 2014

Green think tank revived in city to tap solar power

Jayashree.Nasdi @timesgroup.com

New Delhi: The Union government's elaborate agenda for renewable power has prompted the Delhi government to activate the Energy Efficiency and Renewable Energy Management Centre, which will act as a think tank for solar projects here.

EERM was earlier under the environment department and not very active in delivering renewable energy projects. It has now been moved to the power department for analysing how building rooftops can be used to maximize solar energy generation.

It has about four to five environmental engineers and renewable energy experts, and will act as the nodal agency coordinating between the ministry of new and renewable energy and the Delhi government.

"Since the union government's focus is on solar power, it was decided that EERM will be moved under the power department who have better expertise to propose solar projects that can be implemented successfully in Delhi," said a senior official from the environment department. Environment secretary Sanjiv Kumar was heading the body before it was moved.

EERM is currently working on a number of solar energy projects that can be implemented in Delhi. "It is looking at various models adopted in other states, especially in Gujarat. It is a priority because the prime minister himself takes interest in those projects," said an official from the power department. It is even exploring the

feasibility of installing rooftop projects on abandoned thermal power plants in the city.

EERM is currently assessing the RESCO model and the CAPEX model for implementation and maintenance of these projects. RESCOs are renewable energy service companies that are expected to operate on a model wherein they will purchase the equipment (solar panels and collectors) using long term funds, generate power, distribute it and collect revenues from their cus-



EERM was under the environment department and not very active. It has been moved to the power dept for analysing how solar rooftops can be used to the full

tomers. The maintenance and repair work is also done by RESCOs. CAPEX is when the government makes capital expenditure to acquire equipment and set it up. "We are looking at certain schools, hospitals, buildings and even rooftops of power plants to start the projects. There will be several projects under NDMC, too. EERM is working on them," he added.

Germany to help treat factory waste

TIMES NEWS NETWORK

New Delhi: The German government will help Delhi find a solution to the inefficient effluent treatment infrastructure in its industrial areas. The status of common effluent treatment plants (CETP), along with partnership details, was discussed at the workshop in Mayapuri industrial area on Friday.

Delhi Pollution Control Committee on Saturday said that all 13 effluent treatment plants were working under capacity; "operational inadequacies" resulted in violation of environmental standards. Though they have the potential to treat 212 million litres every day, the plants are processing only 40-50MLD.

As part of the Indo-German Environment Partnership project under the central government, a master plan will be prepared for a modern CETP network using new design parameters; the funding and sharing of project cost is being worked out. The planners are looking at using the sludge from these plants for manufacturing bricks or pav-



FREE FLOW: Waste water from industries is a major source of pollution in the Yamuna

er blocks. Another idea is to have all units discharging hazardous waste in one or two industrial estates, so that the residue from such units can be isolated from other kinds of waste. This will make waste treatment much more cost-effective and manageable. A major problem is the absence of a treatment plant or place to dispose of the hazardous waste generated by CETPs. The Delhi government is still in talks with neighbouring states to allot land for such a treatment facility. Waste water from industries is a major source of pollution in Yamuna. According to a recent study on pollution hotspots by Toxics Link, Delhi has more than 1.2 lakh industries. The initial analysis shows that all 13 CETPs were built by Delhi State Industrial and Infrastructure Development Corporation in the 1990s based on the designs finalized by National Environmental Engineering Research Institute. They are running below their capacity for several reasons—the number of polluting industries discharging effluents has come down over the years but now the domestic waste is being diverted to these industrial CETPs. The mix of the two, say officials, is making the waste even more "hazardous". Domestic waste can be treated by sewage treatment plants at a much lower cost than CETPs.

Deccan Chronicle, Hyderabad dated September 09, 2014

NOBLE CAUSE ■ Nominated individuals to plant three saplings each
Green challenge nets support

DC CORRESPONDENT
 HYDERABAD, SEPT. 8

After the ice bucket challenge and the rice bucket challenge, now the tree plantation challenge is gaining popularity on social networking websites.

With the objective of increasing the green cover and also to balance oxygen levels in the atmosphere, individuals plant three saplings and nominate more people to plant three saplings each. They are then to upload their photos. To continue the chain, people keep nominating more people to plant saplings. Dr Priyalini Sarkar, a

Eco-friendly Initiative

- Dr Priyalini Sarkar re-initiated the green movement, which had failed to take off earlier.
- Individuals plant three saplings and nominate more people to plant three saplings each. They are then to upload their photos.



Dr Priyalini Sarkar

resident of Nidadavole, West Godavari, re-initiated the movement. About 100 people have been nominated — in both Telangana State and Andhra Pradesh —

to take up the challenge in just about six days. Dr Sarkar is a 29-year-old full-time physiotherapist and a social worker, who is currently preparing for her Civil

service examinations. "This movement was started earlier by someone, but it did not take off. I happened to get after a conversation with an old friend. Within a span of just six days, 20 saplings have been planted and we have got almost 50 nominees. This is amazing, and going by the current pace of nominations, we will have about 150 plants by this weekend," she said.

Currently, she is compiling all the photographs to keep a track of the number of saplings planted. "We have to keep doing a follow-up to see the progress of

the campaign. Hence, people must post photographs of the saplings they have planted. We are now spreading to other cities and Facebook is the best platform. People in Kerala are also going to post pictures and promote this soon. This will help reduce pollution, spread awareness about greenery and reduce carbon footprint," she said.

She is now looking to form a team that will help spread the word across other cities. Earlier, she had worked on Project Nidadavole, which promoted the cause of saving greenery, especially among

The Times of India, Delhi dated September 10, 2014

Solar power can turn salty water fit for drinking

Washington: A desalination technology powered by solar panels could provide enough clean, palatable drinking water to meet the needs of India's water-deficient villages, scientists at the MIT have suggested.

Sixty per cent of India is underlain by salty water—and much of that area is not served by an electric grid that could run conventional reverse-osmosis desalination plants.

An analysis by Massachusetts Institute of Technology (MIT) researchers Natasha Wright and Amos Winter shows that a different desalination technology called electrodiolysis, powered by solar panels, could provide enough clean, palatable drinking water to supply the needs of a typical village.

Finding optimal solutions to problems such as saline groundwater involves "detective work to understand the full set of market constraints," said Winter. After weeks of field research in India, and reviews of various established technologies, Winter said, "when we put all these pieces of the puzzle together, it pointed very strongly to electrodiolysis" — which is not what is commonly used in developing nations. ■

Greenhouse gas levels breach new high

CO2 Emissions Record Largest Annual Jump In 30 Yrs, Make Oceans More Acidic Than Ever: UN

Vishwa.Mohan@timesgroup.com

New Delhi: At a time when India witnessed the impact of climate change in the form of extreme weather events one after the other, the World Meteorological Organization (WMO) on Tuesday came out with an alarming disclosure. The level of greenhouse gases in the atmosphere reached a record high in 2013, propelled by a surge in levels of carbon dioxide, it said in a survey.

Though such findings cannot be country-specific, the increase of greenhouse gases may impact one and all at different points of time.

The shocking disclosure is part of the WMO's annual Gr-



RUNNING OUT OF TIME?

eenhouse Gas Bulletin, released in Geneva, which also said the oceans that absorb these emissions have become more acidic than ever — yet another dangerous fact that has the po-

tential to affect marine life.

The Bulletin, released ahead of a UN climate summit, assumes significance as it may infuse a sense of urgency when world leaders assemble in New York on September 23 to give a political momentum to the efforts to deal with climate change. "In 2013, concentration of CO2 in the atmosphere was 142% of the pre-industrial era (1750), and of methane and nitrous oxide 253% and 121% respectively (during the same period)," said the report.

These greenhouse gases have huge a warming effect on climate, which is responsible for extreme weather events in different parts of the world. India, too, has been victim

of such events. Be it the Uttarakhand disaster of June last year or the one which Jammu and Kashmir has been facing for the past week, such events could well remind how climate change can wreak havoc.

The report said: "The observations from WMO's Global Atmosphere Watch network showed that CO2 levels increased last year at the fastest rate for nearly 30 years. We must reverse this trend by cutting emissions of CO2 and other greenhouse gases across the board," he said.

"We know without any doubt that our climate is changing and our weather is

becoming more extreme due to human activities such as the burning of fossil fuels," said WMO secretary general Michel Jarraud. "The Greenhouse Gas Bulletin shows that, far from falling, the concentration of CO2 in the atmosphere actually increased last year at the fastest rate for nearly 30 years. We must reverse this trend by cutting emissions of CO2 and other greenhouse gases across the board," he said.

"We are running out of time... Past, present and future CO2 emissions will have a cumulative impact on both global warming and ocean acidification. The laws of physics are non-negotiable," he said.

The Times of India, Delhi dated September 11, 2014

Ozone layer that started depleting in 1980s healing

Jayashree Nandi
 @timesgroup.com

New Delhi: The protective ozone layer that started depleting heavily in the 1980s is on a recovery mode according to a new assessment by 300 scientists across the world released on Thursday.

'Assessment for Decision-Makers' — a summary document of the Scientific Assessment of Ozone Depletion 2014 published by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) indicates that the ozone layer is expected to recover to 1980 levels before the middle of

this century in many parts.

But the news for India is grim. Tropical countries were not significantly affected by the ozone depletion problem. But, along with severe climate change impacts, India and other tropical regions may face an ozone depletion problem towards the end of the century.

Gufran Beig, project director at System of Air Quality Weather Forecasting and Research (SAFAR) of IITM, Pune, and the only Indian scientist in the review team has flagged off certain ozone concerns for India. Climate change is inducing a change in circulation patterns in the upper layers of the atmosphere



Due to severe climate change impacts, India and other tropical regions may face the problem of ozone depletion towards the end of the century, say experts

that will influence ozone concentration adversely, he has said in his submission.

These changes in the tropical circulation of winds (called Hadley Cell Circulation) will be as a result of climate change and can deplete the ozone layer as per the model projections because they tend to shift air in these layers, said Beig. He shared the document he sent to UNEP/WMO with TOI in

which he adds that concentration of aerosols — suspension of fine liquid droplets in the atmosphere, often particulate air pollution, can negatively impact the ozone layer over the tropics because of their chemical properties. "It has been the opinion of scientists that increasing greenhouse gas emissions and consequent change in the weather system will impact the ozone

layer adversely. There has to be immediate measures to cut down on GHG emissions," he added.

Beig has also highlighted that emissions from fossil fuel, bio-fuels, industries and the power sector are increasing tropospheric or ground-level ozone, which is a toxic gas, in India.

Due to successful implementation of the Montreal protocol across the world that mandated phasing out ozone-depleting substances such as chlorofluorocarbons (CFCs) used in refrigerators, air conditioners and solvents, the ozone problem has been tackled unto larger extent. But now there is also a

problem with the new alternatives. Hydrofluorocarbons (HFCs) which are now widely used (replacing CFCs) do not harm the ozone layer but many of them are potent greenhouse gases and have very high global warming potential. Their emissions are growing at a rate of about 7% per year. Left unabated, they can be expected to contribute significantly to climate change in the next decades. We have to avoid them," Beig added. Replacements of the current mix of High GWPs (Global Warming potential) HFCs with alternative compounds with low GWPs would limit this problem.

The Economic Times, Delhi dated September 13, 2014

Change to Deal With The Climate

Weather- appropriate clothing could play as huge a role in reducing energy costs as weather-appropriate architecture

Silk Stalkings



Reshmi R Dasgupta

Would Indians get married in jeans or chinos? Would an Indian bride in particular, think of appearing on the big day in a pencil skirt, fitted shirt and a 'smart' jacket? The idea sounds so improbable as to be deemed ludicrous. Why? Because weddings are taken very seriously by us and dressing in anything but "formal" attire would be unthinkable.

Then why is it that less elaborate versions of what can broadly be called wedding wear – everyday sarees and kurta-churidar/pyjama ensembles – are not thought to be suitable enough for offices nowadays? Why do corporates, professionals and government servants alike unthinkingly follow established western sartorial mores even as activists scream for more energy efficient buildings?

What is the connection between Indianwear and energy efficient buildings? Plenty. Weather appropriate clothing could play as huge a role in reducing energy costs as weather-appropriate architecture. Just as putting huge Scandinavian style glass windows in buildings and homes in India increases air-conditioning needs exponentially, so do cumbersome, fitted western style clothes.

But any suggestion that 'global Indian' men in particular should go to work – except perhaps NGO outfits – dressed in kurta-pyjama or worse still, dhoti-kurta, would be deemed insane and impractical. Yet if the dhoti/mundu is thought to be formal enough for a wedding, then why not for a workplace? Why do most Indian men prefer to sweat it out in polyester westernwear?

Indian women (especially 20-somethings) face similar peer pressure when it comes to sarees and salwar/churidar sets. Fear of the dreaded tag of 'aunty' makes them head for western ensembles in blended fabrics that are thoroughly unsuitable for our tropical climate. The result is

a burgeoning demand for deodorants and anti-perspirants that add to global greenhouse gas emissions!

The ill-effects of ill-suited clothing are exacerbated by the fact that we lack the forbearance of our former colonial masters who manfully broiled in their western suits in our humid weather. A few 'white mughuls' doffed them in favour of cool, flowing Indian muslin robes but were decried as having 'gone native'. Sadly, Indians who venture to do the same now are accused of that too.

What about the building connection? Take the grand edifices on Raisina Hill in New Delhi. They were built to house India's suited-booted British masters in comfort

(read, coolness) in the scorching northern plains. Central air-conditioning did not exist but the white sahibs managed pretty well with high ceilings, recessed windows, skylights and deep verandahs. Not so their Indian successors.

The Central Secretariat now boasts hundreds of air-conditioners and coolers, windows are closed and curtained, and verandahs and skylights are blocked off for the comfort of the (also suited-booted) desi denizens. Had the brown sahibs kept these buildings as originally planned, hot air (generated by the weather, not the occupants) would have also exited as planned, effecting natural cooling.

Given their more delicate Indian constitutions, instead of persisting with excess air conditioners (and lately, portable oil-based radiators for winter) Raisina Hill's big cahunas (not the political ones, as they wear kurtas already anyway) can simply change over to pure cotton kurtas/sarees for

summer and silk/woollen variants for winter, and turn off at least half those gadgets.

That would send a strong signal to other offices, public and private across India. Changing the architecture of premises is difficult for organisations, but changing the rules of employee attire is a relatively cheaper energy conservation measure. Maybe even the west will take a cue if a 1.2 billion strong nation takes this simple first step – change to deal with climate. Changing mindsets, of course, will be the real challenge.



Changing the architecture of premises is difficult for organisations, but changing the rules of employee attire is a relatively cheaper energy conservation measure

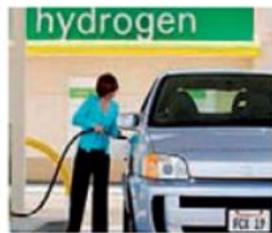
Deccan Chronicle, Hyderabad dated September 13, 2014

Water as fuel may soon be reality

London, Sept. 12: Scientists have claimed a major breakthrough in the production of hydrogen fuel from water, which could lead to a new era of cheap, clean and renewable energy. Chemists from the University of Glasgow report in a new paper in journal *Science* on Friday on a new form of hydrogen production which is 30 times faster than the current state-of-the-art method.

The process also solves common problems associated with generating electricity from renewable sources such as solar, wind or wave energy.

Hydrogen is easily produced from water by elec-



● **Currently, industrial production of hydrogen relies overwhelmingly on fossil fuels to power the electrolysis process.**

● **The new method allows larger-than-ever quantities of hydrogen to be produced at atmospheric pressure.**

trolysis, a process which uses electricity to break the bonds between water's constituent elements, hydrogen and oxygen, and releases them as gas. Hydrogen gas can be burned to produce power with no negative impact on the environment, unlike power produced by burning fossil fuels.

One of the problems of generating electricity via renewable power is that the output either needs to be used immediately or stored.

Using renewable power to produce hydrogen allows the capture of electricity in an environmentally-friendly state which is easily stored and distributed.

Currently, industrial production of hydrogen relies overwhelmingly on fossil fuels to power the electrolysis process.

The most advanced method of generating hydrogen using renewable power uses a method known as proton exchange membrane electrolysis. To reach optimum efficiency, PEMEs require precious metal catalysts to be held in high-pressure containers and subjected to high densities of electric current.

The new method allows larger-than-ever quantities of hydrogen to be produced at atmospheric pressure using lower power loads.

— PTI

The Times of India, Delhi
dated September 13, 2014

Villages along Ganga to be open-defecation free by '22

Centre Readies ₹52,700cr Plan To Curb Pollution

Vishwa.Mohan@timesgroup.com

New Delhi: As part of its ambitious 'Namami Gange' programme, the central government plans to free all villages along the banks of the river from open defecation by 2022 and extend incentives to states to expand sewerage infrastructure in all 118 urban habitations along the river.

Both the schemes will cost the Centre around Rs 52,700 crore. While Rs 51,000 crore has been earmarked for expanding the sewerage infrastructure, the remaining Rs 1,700 crore will be given as the central share for making villages free from open defecation.

Villages to be covered under the scheme fall under 1,632 gram panchayats along the river bank in Uttarakhand, UP, Bihar and West Bengal. Besides, the government has also proposed to set up a National Ganga Monitoring Centre and bring out a comprehensive plan to deal with industrial pollution in Kanpur:



While Rs 51,000cr has been earmarked for expanding the sewerage infrastructure, the remaining Rs 1,700cr will be given as the Union government's share for making villages free from open defecation

All these schemes, along with others relating to tourism, 'ghat' (river front) development and shipping network, will be implemented by different ministries, including water resources, drinking water and sanitation, tourism, shipping and urban development. The ministry of water resources made these additional schemes public on its specially designed website for the river Ganga, which was launched on Friday.

The website will provide a digital platform to people to extend their suggestions and tips on good practices to keep the country's national river clean. The idea is to involve people in implementing the

schemes of the government's Ganga rejuvenation programme.

Launching the website, water resources minister Uma Bharati said it was an important tool to connect the public with the gigantic task of Ganga rejuvenation. She also reiterated the resolve of the Narendra Modi government to rejuvenate the Ganga "within the shortest possible time". The website (nmcg.nic.in) contains a wide range of information on clean Ganga mission which includes Ganga Manthan, Namami Gange, conservation of pollution project, status of the National Ganga River Basin Authority, Ganga action plan, water quality monitoring, industrial pollution monitoring, waste water management and comprehensive details of the Ganga basin. The portal has a separate link — Gangepedia — which has all the basic information on the river.

All the schemes to rejuvenate Ganga were suggested by a group of secretaries (GoS) that had submitted its final report on August 20. "While the report is being examined in the ministry, the National Mission for Clean Ganga has been working in parallel on a draft strategy taking into account all these developments," the water resources ministry said.

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

Deccan Chronicle, Hyderabad
dated September 16, 2014

The Times of India, Delhi dated
September 16, 2014

More J&K-like floods in India, warn experts

DC CORRESPONDENT
NEW DELHI, SEPT. 15

More floods on the lines of the one that hit Jammu and Kashmir will occur in the country, warned climate change experts.

Kashmir floods as an event is not the result of climate change. However, the pattern of heavy rainfall and flooding for a longer duration is an affect of climate change according to top environmental experts of the country.

Dr R.K. Pachauri, director general of TERI, addressing a seminar on climate change organized by UN Information Centre for India and Bhutan on Monday said the erratic weather incidents like Jammu Kashmir floods, Uttarakhand floods are part of a pattern of climate change occurring over years.

He warned that more such floods will occur in the country due to erratic

More floods like the one in J&K will occur in the country due to erratic weather patterns "coastal floods and storm surges will increase in future. Climate extremes are increasing. This year is going to be crucial for climate change, say experts."

weather patterns "coastal floods and storm surges will increase in future. Climate extremes are increasing. Heat wave in Andhra Pradesh resulted in several deaths in 2003 due to lack of awareness and information to the people. This year is going to be crucial for climate change," said Mr Pachauri.

He added that ocean acidification has increased and sea levels are also increasing. The Jammu and Kashmir state action plan for climate change, prepared a few months ago, revealed floods are imminent.

'J&K green funds used on ACs, sofas'

State Diverted Money For Afforestation To Non-Forest Use, Reveals CAG Study

Pradeep.Thakur
@timesgroup.com

New Delhi: Jammu & Kashmir seems to have paid the price for diverting its forest land to non-forest use and not carrying out the required afforestation.

A study by the Comptroller and Auditor General (CAG) on the forest cover of J&K in 2013 revealed that the state government diverted at least 10,700 hectares of forest land to non-forest use between 1991 and 2012. Almost 680 hectares of this was part of a protected wildlife sanctuary in Shopian that was diverted for construction of Mughal Road.

Worse, the study found that state forest officials diverted funds collected for afforestation towards payment of loans, advances, sports meets, payments to private hotels among others. Expenditure was incurred on purchase of carpets, LEDs, ACs, iPods, sofa sets, projectors, vehicles, installation of office cabins and electric transformers.

PAYING FOR TOYING WITH NATURE?



- J&K forest dept diverted 10,684 hectares of land between 1991 and 2012 for non-forest use
- Rs 796 crore was to be collected from user agencies for reforestation. The money was not collected
- Part of wildlife sanctuary in Shopian diverted for the construction of Mughal Road
- Afforestation funds used to buy carpets, LEDs, ACs, iPods and sofa sets, and paying for hotel bookings

The CAG study was tabled in Parliament in mid-2013 as part of evaluation of the country's total collection and expenditure on compensatory afforestation.

The auditor observed that this expenditure was in complete violation of the Supreme Court's guidelines issued while creating the Compensatory Afforestation

Fund Management and Planning Authority (CAMPFA) to monitor mandatory afforestation wherever forest land was diverted for non-forest use.

The federal auditor had made stinging remarks and pulled up the state administration for its lack of seriousness on afforestation drive which was almost negligible. "As of December 2012, the J&K forest department (between 1991 and 2012) diverted 10,683.86 hectares of land to user agencies for non-forest purposes but its net present value

for compensatory afforestation estimated at Rs 796 crore was not realized from user agencies," the auditor said.

As the funds for afforestation was not collected, there was no attempt to create fresh forest cover. It is the duty of the state to collect funds from user agencies and allocate appropriate land where reforestation activities can be carried out.

The Central Forest (Conservation) Act is not applicable to J&K. The state forest department is governed by

J&K Forest Conservation Act of 1997. Taking cover of this special privilege, the state chose not to implement CAMPFA guidelines.

The state-level steering committee was empowered to take decisions on all afforestation activities and allocation of funds. The panel failed to restrict unauthorized expenditure of CAMPFA funds in the state, which resulted in expenditure on sports meet, payment to private hotels etc.

Between 2006-07 to 2011-12, state CAMPFA fund of Rs 67 crore was released out of which Rs 55 crore was spent. The nature of this expenditure was also questioned by the CAG. The auditor also found large variation in figures of allocation and expenditure of CAMPFA funds. Large variations were revealed in at least eight forest divisions of the state, the best check of records revealed.

Deccan Chronicle, Hyderabad dated September 17, 2014

Sick hospitals throw med waste in city garbage bins

DC CORRESPONDENT
HYDERABAD, SEPT. 16

Non-segregation of medical waste and improper training of employees who handle it in most hospitals is resulting in the waste getting mixed up with domestic garbage at streetside bins.

In addition to this, clinics that deal with less than 1,000 patients a month are not mandated to tie up with companies for safe disposal of bio-medical waste, said M. Shiva Reddy, joint chief environmental engineer, of the Pollution Control Board.

Because of this, disposal of the waste and used instruments is not recorded and there are chances of their being dumped along with the garbage.

Either way, it results in ragpickers picking up used syringes and needles and other medical waste and selling them in the scrap market.

"We are working with a few organisations and spreading awareness. We are making it compulsory for hospitals to follow scientific disposal," Mr Reddy said,

According to the rules, waste should be segregated. Human anatomical waste such as body parts that are removed during surgery, and bandages, should be placed in yellow bags and should be incinerated at 1,100° Celsius. Red bags are meant for plastic and rubber disposables like gloves, bottles, syringes, tubes and urine bags. This waste is sterilised and shredded. Sharp

We are making it compulsory for hospitals to follow the scientific way of disposal

— SHIVA REDDY,
Pollution Control Board



● Waste is not being segregated at hospitals and this results in improper disposal at later stages

instruments should be collected in jars and must be incinerated.

"All government and private hospitals tie up with the companies for waste treatment. The only lacuna is that the segregation of the waste is not happening at many hospitals, resulting in improper disposal at the later stages," said A.V. Ratnam, president of Parirakshana, a hospital management consultancy.

He suggested that the PCB must have regular checks at hospitals to ensure that disposal is done in the right manner.

CARELESS STEPS

■ An estimated seven tonnes of biomedical waste is produced every day by the 800 odd hospitals in the city.

■ Since medical waste is improperly disposed off, it results in ragpickers picking up medical waste and selling them in the scrap market

■ Human anatomical waste such as body parts that are removed during surgery, and bandages, should be placed in yellow bags and incinerated at 1,100° Celsius

■ Red bags are meant for plastic and rubber disposables which are sterilised and then shredded

■ Sharp instruments must be collected in jars and incinerated

GARBAGE WORKERS FACE RISK OF INFECTION FROM MED WASTE

DC CORRESPONDENT
HYDERABAD, SEPT. 16

Improper disposal of medical waste can lead to the spread of a variety of diseases. For instance, improperly disposed sharp objects can lead to the spread of diseases like gangrene.

Dr S. Ramakrishna, who operates a clinic in Kukatpally, said, "Even in a normal out-patient clinic we use needles, which require safe disposal. Establishments need to follow rules and acquire certificates. These certificates need to be displayed in the clinic so that patients know that bio-medical waste is being properly dealt with."

Clinics are charged ₹3,000 for dealing with bio-medical waste.

While medical establishments need to segregate waste, it is important that it is properly disposed.

Dr S. Ahmed said, "Some establishments are not following disposal practices to save money. Hence, the hazardous material is given to the disposal company, while the non-hazardous material like cotton, saline bottles etc are thrown in the municipal garbage bins. These are picked up by garbage workers who segregate the waste. These workers get infected and their families suffer."

The Times of India, Delhi
dated September 17, 2014

Green houses may soon get incentives

TIMES NEWS NETWORK

New Delhi: Green buildings in Delhi can soon expect incentives for incorporating eco-friendly design features.

On Tuesday, LG reviewed the implementation of incentives for green buildings, as proposed in the master plan of Delhi 2021. The MPD 2021 was amended and a gazette notification issued on September 23, 2013 to incorporate green building concepts in layout plans of plots sized 3000 sq m and above. Features included on-site effluent treatment, solid waste management, energy efficiency and optimal usage of water to make these building "zero-discharge".

LG also discussed incentives that could be given to builders for incorporating eco-friendly features. Enhanced floor area ratio (FAR), ground coverage, and property tax rebate are incentives being considered. Monitoring system to ensure on-site compliance and performance; and disincentives for non-compliance were also discussed.

Of Himalayan Blunders & Rivers of Muck

Developmental gains will crumble if India follows a model of growth that is resource-and-energy-intensive. As it is, rivers are degraded, pollution is growing, forest cover's thinning. Overhaul of green governance is the need of the hour

Subodh.Varma@timesgroup.com

Here is a fact that should alarm you: Of 180 cities monitored for air pollutants SO₂, NO₂ and PM10 in 2010, only two towns Malapuram and Pathanamthitta in Kerala met the criteria of low pollution (50% below the standard) for all pollutants, according to the Centre for Science and Environment (CSE). SO₂ and NO₂ are noxious gases while PM10 is particulate matter such as dust and smoke particles. The number of critically polluted cities (1.5 times the standard) increased from 49 to 89 between 2005 and 2010.

This is only one dimension of multiple environmental challenges that India must address. India is home to 18% of world population, 15% livestock popu-

GREEN GAPS

1 India is one of the 17 identified mega diverse countries of the world

2 India has 172 (2.9 per cent) of IUCN designated threatened species. These include the Asiatic Lion, the Bengal Tiger, and the Indian White-Rumped Vulture

Particulate Matter (PM10) Levels

Level	No. of Cities
Critical	89
High	52
Moderate	37
Low	2

Source: CSE



Of the 38 billion litres municipal waste water generated every day in India, only 29% is treated

445 rivers unfit for drinking

bathing. Why is this so? Of the 38 billion litres municipal waste water generated every day in India, only 29% is treated. By 2050, 100 billion litres may come from Indian cities each day, it said.

Another aspect of water mismanagement is the fall in India's per capita freshwater resources from 6,042 cubic metres in 1947 to 1,845 cubic metres in 2007. Indian cities are using 50 billion litres of municipal water a day.

While forest cover — estimated at 24% of geographical area — is not depleting, it is still short of the target of 33% set in 1988.

But there are clear warning signs: moderately dense forests, which hold the future growth of forests, declined by 1991 sq km between 2011 and 2013, according to the most recent Forest Survey of India report. In 24% of forests there is 'inadequate' regeneration; in 10% none at all. A dangerous 73% of forest area is affected by light to heavy grazing by animals.

Environmental governance — from local to the national level — needs an overhaul, feels Chandra Bhushan. Our laws, regulations, regulatory institutions etc are not suitable to deliver environmentally sound development in the 21st century, he says.

"The present governance system is top heavy, piecemeal, unaccountable and opaque. It has failed to involve people, communities, local governments and companies in solving the environmental problems," he added.

Environmental degradation is often directly a cause for severe economic loss, and perpetuation of poverty. In India, more than 147 million hectares soil has become degraded, eroded and thus unproductive. About 5334 million tons of topsoil is lost annually. According to G

Mythili, professor at the Indira Gandhi Institute of Development Research, production loss due to land degradation in 2010 was 16%, that is, 13.4 million tons. That works out to about Rs 162 billion. Essential cereals make up 66% of this loss.

All these environmental challenges are going to get aggravated in the coming decades because of climate change. It will make the poor poorer and wipe out whatever development has taken place, argues Bhushan.

"Indians will have to start adapting to climate change. Simultaneously, we have to start reducing greenhouse gas emissions and work with the global community to limit the rise in the global temperature below 1.5 degrees C," he added.

REALITY CHECK

ENVIRONMENT

THE TIMES OF INDIA Social Impact Awards

in partnership with



ADITYA BIRLA GROUP

lation and 7-8% of all recorded species. But we have only 2.4% of land area in the world. This puts an immense pressure on all natural features: air, land, water, animals, vegetation.

"India cannot afford to follow the West's development model of resource-and energy-intensive growth and lifestyle. The country's natural resource base cannot sustain such a growth model for all and there will be huge inequalities and social conflicts. We need a developmental model that puts premium on social welfare and not on resource-intensive growth," stresses Chandra Bhushan of CSE.

Take water, for instance. Raw sewage and industrial waste has rendered water in more than half of India's 445 rivers unfit for drinking, according to the Central Pollution Control Board. Water from at least a quarter of the rivers surveyed can't even be used for

The Times of India, Delhi dated September 17, 2014

The Times of India, Delhi dated September 18, 2014

Now, power your devices while talking, chewing

Toronto: Researchers have developed a chin strap that can generate electricity from jaw movements such as eating, chewing and talking to power a number of small-scale implantable or wearable electronic devices.

Jaw movements have proved to be one of the most promising candidates for generating electricity from human body movements, with researchers estimating that an average of around 7 milliwatts of power could be generated from chewing during meals alone.

To harvest this energy, the study's researchers, from Sonomax-ETS Industrial Research Chair in In-ear Technologies (CRITIAS) at Ecole de technologie superieure (ETS) in Montreal, Canada, created a chin strap made from piezoelectric fiber composites (PFC).

PFC is a type of piezoelectric smart material that consists of integrated electrodes and an adhesive polymer matrix. The material is able to produce an electric charge when it stretches and is subjected to mechanical stress.

The researchers created an energy-harvesting chin strap made from a single layer of PFC and attached it to a pair of ear muffs using a pair of elastic side straps. The chin strap was fitted snugly to the user, so when the jaw moved, it caused the strap to stretch.

To test the performance, the subject was asked to chew gum for 60 seconds whilst wearing the head-mounted device; at the same time the researchers recorded a number of different parameters.

The maximum amount of power that could be harvested from the jaw movements was around 18 microwatts, but taking into account the optimum set-up for the head-mounted device, the power output was around 10 microwatts.

"Given that the average power available from chewing is around 7 milliwatts, we have a long way to go before we perfect the performance of the device," said co-author of the study Aldin Delnavaz. "For example, 20 PFC layers, with a thickness of 6 mm, would be able to power a 200 microwatts intelligent hearing protector." P71

The Times of India, Delhi dated September 18, 2014

EU Wants India to Blink on Climate Talks

Urmi.Goswami@timesgroup.com

New Delhi: Europe has reached out to India to set aside its hardline stance on climate change negotiations. The European Union has asked New Delhi to show "flexibility" to ensure that the new global compact on climate change, which is to be finalised in Paris next year, reflects the realities of the 21st century.

Ahead of the Lima round of climate negotiations under the aegis of the United Nations later this year, the European Union wants "to seek a dialogue" with New Delhi and the new government. India and the EU have been at odds in the negotiations, with Europe pushing for a legally binding agreement and asking developing countries to make more efforts to tackle climate change.

India has long maintained that developed countries, which industrial-

ised early and contributed the most to carbon emissions, should take on the burden of efforts to reduce emissions. "Everyone needs to bend towards each other," said European Union Commissioner for Climate Action Connie Hedegaard. "I am here for an open-minded engagement to listen to the minister."

Stressing on the important role India plays in the climate change negotiations, the outgoing EU climate boss sought to allay New Delhi's fears that it would be called on to reduce emissions when its economy needed to grow.

"Nobody disagrees with India's need for growth. There are 400 million people in India without access to electricity. Nobody is asking India to reduce emissions in absolute terms. We know that India is not Europe, but then again remember that India is not China," Hedegaard said, referring to India's close ally in the climate talks. China, which has

emerged as the biggest greenhouse gas emitter, and India work closely under the umbrella of the Like-Minded Developing Countries group and the BASIC, coordinating positions in the negotiations held under the aegis of the United Nations Framework Convention on Climate Change (UNFCCC).

India has consistently raised the issue of how industrialised countries must ensure adequate and predictable finances to help developing countries tackle climate change.

"Financing is an important issue, and we are working to speed up the delivery of funds. But the \$100 billion cannot be through public funding alone," Hedegaard said, adding that many of the European Union member-states will announce their contributions to the Green Climate Fund ahead of the Lima round in December. However, it's unlikely their announcements will add up to \$100 billion, and Hedegaard acknowledges that.

Deccan Chronicle, Hyderabad dated September 18, 2014

SLOW DOWN

Solar market loses shine

■ Private investors are not showing interest in green energy

DC CORRESPONDENT
HYDERABAD, SEPT. 17

While the AP government has targeted to achieve 9,150 MW capacity of renewable energy by 2018-19, top experts of the country have cautioned of investment fluctuations and a slowing solar market of India.

Though the Centre has come forward to fund AP's plan, private investors are not showing interest due to policy and financing reasons for the solar and wind energy sector in the country including in AP.

Reluctance of domestic banks to lend money, lack of renewable purchase obligation by state power utilities and frequent changes in proposed incentives are resulting in slowing of the sector, say experts.

Experts suggest that existing financing of solar and wind power needs long-term certainty, subsidies and tax relief for generating renewable electricity.

According to experts, clean energy invest-



ments in the country in 2013 was the lowest since 2010 at ₹34,713 crore.

Interestingly, AP is not among the top five renewable energy states in the country. Around 70 per cent of renewable energy is from five states including Tamil Nadu, Maharashtra, Gujarat, Rajasthan and Karnataka.

CEO of Council on Energy, Environment and Water, Dr Arunabha Ghosh said, "Despite nearly doubling the installed solar capacity in 2013 to over 2.5 Giga Watt, India's solar market is slowing."

Expert have advised the states to for "green

bonds", which are effectively used in international markets to stimulate solar market growth.

"Strong government support is critical to boost investors' confidence to provide payment security for solar contracts. Innovative state programmes like AP's exemptions shall be considered by all states," said Mr Ghosh.

"Medium-to-long term innovative financing schemes should be attempted including a green bank and green bonds. There should be complete phase out of fossil fuel by 2051," said Ms Ritu Mathur of TERI University.

More investments make green energy 'unsustainable'

DC CORRESPONDENT
HYDERABAD, SEPT. 17

Renewable energy would generate more jobs, but experts warn that solar and other renewable energy sources for power generation will have an adverse impact on the growth trajectory.

Investment cost for solar energy is five to six times more than coal-based projects, bringing down available investment for other sources.

It is estimated that renewable energy will create more jobs per unit of electricity pro-

duced compared to fossil energy like coal. For instance, it is estimated for 85 MW of wind project 2,350 persons would be employed over 20 years.

Dr Kirit Parikh, chairman of Integrated Research for Action and Development said, "Opting for renewable energy will increase the cost. It will cost at least ₹7.5 crore to ₹8 crore per MW production of solar power. The investment cost is around five to six times more than traditional coal based energy production."

Planning Commission senior advisor B. N.

Satpathy said, "The target of the 12th Plan is to increase green cover by one million hectare every year, to add 30,000 MW of renewable energy and reduce emission intensity of GDP in line with the target of 20 to 25 per cent over 2005 levels by 2020."

"The cumulative costs of low carbon strategies between 2010 and 2030 have been estimated at around 834 billion dollars at 2011 prices. This will divert resources from other needs and may not be possible to sustain, if growth is not fast enough," Mr Satpathy added.

Grooming schools for farmers

DC CORRESPONDENT
HYDERABAD, SEPT. 17

The Food and Agricultural Organisation of United Nations has set up climate schools for farmers in districts like Anantapur, Mahbubnagar, Kadapa, Kurnool for promoting climate-smart farming.

The farmers are trained and provided with weather forecast and weather pattern analysis equipment so that they develop their own local climate adaptation system.

FAO India officer-in-charge Dr Satya Priya said, "Farmers climate schools are a part of adaptation measures to climate variability. It involves local-level monitoring of climate variability and its impacts. For instance, a farmer will stop using pesticide if there is rain to occur in the next ten days in that particular location."

He added that the farmers will understand how agricultural productivity has changed over the times and find out what should be done to cope with the impact of climate on agriculture."

Dr Ch. Manoharachary, a scientist and an emeritus professor of Osmania University said, "Due to climate change there will be 10 to 40 per cent loss in crop production by 2100. Greater loss is expected in *rabi*. Productivity of most cereals would decrease. Plant pests and diseases would increase."

The Times of India, Delhi dated
September 21, 2014



In the run up to the United Nations Climate Summit in New York, over 500 people marched from Mandi House to Jantar Mantar on Saturday. They also submitted a memorandum to PM demanding action on climate change. Such marches were held around the world calling for action

The Times of India, Delhi dated
September 22, 2014

India's innovations at IIT social summit

Manash.Gohain
@timesgroup.com

New Delhi: India put its innovations on display at the Social Good Summit on September 21 and 22 during which the United Nations General Assembly has been in session. Hosted at IIT Delhi on Sunday: the first India Social Good Summit 2014, students live for thousands of students, had experts and students came together to interact on one question: What type of world do we want to live in by the year 2030?

Filmmaker Shekhar Kapur, actor Sushant Singh Rajput and UN resident coordinator Lise Grande joined a host of youngsters who showcased their innovations. These included the smart cane for visually disabled, waterless urinals to address sanitation challenge, Gram Vaani Community Radio for reverse

flow of information, and grass-root empowerment, a technology which has already impacted two million people in 15 states and replicated in Afghanistan, Pakistan, Namibia and South Africa.

Speaking about life 2030, Kapur said, "What will the cell-phone become in 2030? Maybe a watch, a lens in your eye. Who knows? In 2030, everyone will be equal and it will be a democratic, unbelievable world. The way technology is changing the world, it is hard to predict what all is possible in 2030."

Following the event online, health minister Dr Harsh Vardhan tweeted: "Always believed in modern technology's potential to solve problems of poverty: Social Good Summit will showcase many inventions-best wishes. Delighted to see youth participating actively in finding tech solutions for social good."

Yogesh Kumar



TALKING SCIENCE: Shekhar Kapur and actor Sushant Singh Rajput

Computers to get faster, greener

London: Faster, smaller, greener computers, capable of processing information up to 1,000 times quicker than currently available models, could be made possible by replacing silicon with phase-change materials, according to a new study.

Researchers found that the present size and speed limitations of computer processors and memory could be overcome by replacing silicon with 'phase-change materials' (PCMs).

PCMs are capable of reversibly switching between two structural phases with different electrical states—one crystalline and conducting and the other glassy and insulating—in billionths of a second.

Modelling and tests of PCM-based



SMALLER TOO

devices showed that logic-processing operations can be performed in non-volatile memory cells using particular

combinations of ultra-short voltage pulses, which is not possible with silicon-based devices. In these new devices, logic operations and memory are co-located, rather than separated, as they are in silicon-based computers. These materials could enable processing speeds between 500 and 1,000 times faster than the current average laptop, while using less energy.

The processors, designed by researchers from the University of Cambridge, the Singapore A STAR Data Storage Institute and the Singapore University of Technology and Design, use a type of PCM based on a chalcogenide glass, which can be melted and recrystallized in as little as half a nano-second using right voltage pulses. **PH**

The Times of India, Delhi dated September 22, 2014

Electric car sets world speed record

Washington: An ultra-light electric car built by students at a US university has set a new land speed record in its class, besting the previous mark by nearly 80kmph.

Electric Blue, an E1 streamliner designed and modified by more than 130 Brigham Young University (BYU) students over the past 10 years, averaged 330kmph on two qualifying runs this month. The new mark obliterates the previous record, 250kmph, which was set by the same BYU car in 2011.

"When we set the record three years ago we felt like we left a lot on the table," said BYU student and team captain, Kelly Hales.

"On paper we thought we could get 322kph but we never had the conditions just right—until now," said Hales.

The car notched the record this month in front of approximately 180 teams and their cars at the Bonneville Salt Flats in northwestern Utah.

Jim Burkdoll, president of the Utah Salt Flats Racing Association, drove the car to set the record, which was certified by the Southern California Timing Association. Electric Blue is called a streamliner because it has a long, slender shape and enclosed wheels that reduce air resistance. **PH**

The Times of India, Delhi dated September 23, 2014

CO₂ emissions to reach 40bn-tonne high

China, US, EU And India Largest Emitters Accounting For 58% Of Greenhouse Gas

Kounteya.Sinha@timesgroup.com

London: British researchers have confirmed that carbon dioxide emissions, the main contributor to global warming, are set to rise in 2014 reaching a record high of 40 billion tonnes.

The 2.5% projected rise in burning fossil fuels was revealed by the Global Carbon Project which is co-led in the UK by researchers at the Tyndall Centre for Climate Change Research at the University of East Anglia and the College of Engineering, Mathematics and Physical Sciences at the University of Exeter.

The projected rise is therefore 65% above 1990 levels, the reference year for the Kyoto Protocol. China, USA, EU and India are the largest emitters accounting for 58% of emissions together



GREEN MARCH: A combo picture of protest signs being carried during the 'People's Climate March' in New York on Sunday

er China's emissions grew by 4.2% in 2013, USA's by 2.9% and India's by 5.1%. The EU has de-

creased its emissions by 1.8% though it continues to export a third of its emissions to China

and other producers through imported goods and services.

This latest annual update of the Global Carbon Budget shows that future CO₂ emissions cannot exceed 1,200 billion tonnes—for a likely 66% chance of keeping average global warming under 2°C (since pre-industrial times). At the current rate of CO₂ emissions, this 1,200 billion tonne CO₂ "quota" would be used up in around 30 years. This means that there is just one generation before the safeguards to a 2°C limit may be breached.

Corinne Le Quere, director of the Tyndall Centre, said, "The human influence on climate change is clear. We need substantial and sustained reductions in CO₂ emissions from burning fossil fuels if we are to limit global climate change. We are nowhere

near the commitments necessary to stay below 2°C of climate change, a level that will be already challenging to manage for most countries around the world, even for rich nations."

Lead author Pierre Friedlingstein from the University of Exeter said, "The time for a quiet evolution in our attitudes towards climate change is now over. Delaying action is not an option. We need to act together and act quickly if we are to stand a chance of avoiding climate change not long into the future, but within many of our own lifetimes. We have already used two-thirds of the total amount of carbon we can burn, in order to keep warming below the crucial 2°C level. If we carry on at the current rate we will reach our limit in as little as 30 years' time."

Deccan Chronicle, Hyderabad dated September 23, 2014

TIME | BAR

■ Time runs out on US Prez to set in place world climate order

Obama will try to rouse climate army

Washington, Sept 22: President Barack Obama will seek to galvanise international support in the fight against climate change on Tuesday when he addresses the United Nations, with time running out on his hopes of leaving a lasting environmental legacy.

Obama has warned that failure to act on climate change would be a "betrayal" of future generations, but faced with a Congress

reluctant to even limit greenhouse gas emissions, let alone ratify an international agreement, his options appear limited.

Tuesday's climate summit in New York kicks off a process that will culminate in Paris at the end of 2015, where the world's powers will hope to seal a new climate change pact.

"Internationally, this is the opportunity for the president to leave his mark on the issue," said Alden

Meyer, of the Union of Concerned Scientists.

Mr Obama's last meeting with heads of state to try to strike a climate deal, in Copenhagen five years ago, ended in bitter disappointment.

"I think that there is some greater sense of perhaps realism as well as ambition among parties than perhaps there was in 2009," said Todd Stern, the top US climate negotiator.

—Agencies



People carry banners as they take part in New York's biggest climate change march on Sunday.

— AP

The Economic Times, Delhi dated September 23, 2014

The Times of India, Delhi dated September 23, 2014

Reforms in mining can not only exorcise the ghosts of Coalgate but also set a rousing example

Leave a Carbon Footprint



Ashok Malik

han Singh government. Of the 218 blocks, allotment of 80 had been cancelled anyway in the last few months. Twelve blocks relate to ultra-mega power projects (power projects generating 4,000 MW each). These have been exempted by the Supreme Court. Of the 126 blocks that remain, production of coal has begun in 30. The court is expected to treat these with some leniency.

That leaves about 100 blocks (180 if you count those cancelled previously). What happens to them? They constitute both a challenge and an opportunity. Could they become the fulcrum of an initiative to promote good, virtuous policy?

Taking Captive

The easiest course for the government would be to transfer these blocks to Coal India, the public sector monolith that produces 80% of India's coal. Coal India is backed by an Act of Parliament that gives it a monopoly when it comes to merchant mining: that is, mining of coal not by an end user for a captive power project but by a professional mining company that wants to sell coal to others. Indeed, the whole idea of allotting coal blocks to end users was to promote private mining and dilute Coal India's monopoly.

In the near future, the government needs to do three things. First, it needs to expedite the passage of the Bill pending in Parliament for close to a decade and a half seeking to repeal the law that gives Coal India sole rights to merchant mining. Opening up the sector to genuine mining companies, including international giants that could join hands with Indian partners, would fit well with the Prime Minister's urging to 'Come, make in India'.

Second, the government needs to



Responding to a call of nature

set standards for mining and push coal mining companies — including Coal India, which has a poor record in these matters — to move away from surface-level opencast mining and embrace ecologically-friendlier technologies. These may be more expensive but they are clearly better.

Finally, the government needs to transfer coal blocks allotments that have been cancelled to a special purpose vehicle (SPV). The SPV should be made the custodian of these blocks and placed under a senior and proactive IAS officer. It should be this officer's, and this SPV's, job to secure all permissions and clearances for mining.

These would include clearances from environmental, forest, pollution, water and power authorities and utilities, encompassing both the Union and state governments.

Miner Irritant

In the old system, these permissions were the burden of the company allotted the coal block, to be got after the block had been transferred. This was a recipe for delay and bribery. It would be best if the SPV, which would in effect be an ad-hoc arm of the

government, used its leverage with other government departments to negotiate all the clearances.

Fast Coal

Following this, the SPV should find a transparent mechanism — an auction or any other such method — to give away these blocks. A proportion of the blocks should be reserved for private merchant miners and the rest for end users such as power plants. With all permissions in place, the companies that bid for and win concessions would ideally be able to begin mining from the following morning.

At this point, the SPV would be dissolved and its officers redeployed elsewhere in the government.

This journey will not be a quick one. One is looking at several months or even a year, and to a situation where in mid-2015, coal blocks have once more been transferred, except this time to genuine mining companies and not to cronies. If the coal minister can present and then execute this single-window plan, the demonstration effect will be tremendous. It will do wonders for the sector — and for the Modi government.

Narendra Modi wants to create jobs, make India more of a manufacturing economy, enhance the efficiency of government, push for greater ease of doing business, encourage private sector investment and institutionalise synergy between the Union and state governments. And do all this in the most environmentally-sensitive manner possible. That is a tall order. It will take many terms — many lifetimes, some would argue. Yet, a start has to be made somewhere.

Why not with the coal sector? Coal mining is almost at a standstill and this is among the most toxic legacies of the UPA. Years of a rent-seeking regulatory regime have meant that even spanking new power plants — with legitimate investor and bank money ploughed in — do not have coal to run them and are sitting idle. The bigger scandal relates to the allocation of coal blocks to not rightful end users — power companies, steel plants and cement makers — but dubious and politically-connected fixers.

In the coming weeks, the Supreme Court is expected to announce the cancellation of many of these blocks. It has already ruled the allotment of 218 blocks by successive governments since 1993 was illegal. Of these, 162 blocks were allotted between 2004 and 2014 by the Manmoh

It would be best if an SPV, an arm of the government, used its leverage with other government departments to negotiate all the clearances, earlier a source of bribes

The Economic Times, Delhi dated September 24, 2014

Developing Nations Need More Time to Tackle Climate Change: India

Urmi.Goswami@timesgroup.com

New Delhi: India has made it clear that the global climate compact cannot ignore the fact that developing countries need more time, financial and technological support to deal with climate change. It stressed that the industrialised countries, responsible for the bulk of the global warming, should lead by example.

New Delhi has asked industrialised countries to do more to reduce emissions, improve the flow of funds and technology in the pre-2020 period "with a view to setting the ambitious starting point and reference level for the post-2020 global agreement".

At the meeting of the major economies forum in New York ahead of the UN Secretary General Ban Ki-moon's Climate Summit, India's environment minister Prakash Javadekar stressed that industrialised countries need to undertake domestic preparations on meeting their commitments to provide funds and technology to developing countries alongside finalising their emission reduction targets.

The minister said that the new agreement to be finalised in Paris next year is "evolving under the Convention" therefore, all the

principles and the provisions of the UN Framework Convention on Climate Change "will apply to all aspects of the nationally determined contributions".

Javadekar said that the intended nationally determined contributions (INDC) have to be understood in a manner that differentiates between industrialised countries and developing countries. "The national determination of contributions must strengthen existing commitments" of the industrialised countries.

India's efforts at the MEF meeting was to drive home the point that developing countries would not relent on the difference in the way industrialised and developing countries are expected to contribute to the global effort to tackle climate change. India, which is among the leading voices demanding more ambitious action from the western countries, is yet to put forward a proposal that would take into account the differences in capabilities of the industrialised and developing countries and the changes in economic realities since the early 1990s.

Green norms for buildings to be relaxed

Centre All Set, Activists Fret

Jayashree.Nandi @timesgroup.com

New Delhi: The Centre is all set to amend Environment Impact Assessment Notification, 2006 to clear green hurdles to certain types of constructions. This would mean projects such as Akshardham temple or the DTC bus depot on the Yamuna floodplains will not require environmental clearance (EC).

Green activists are, however, worried that the amendment will put massive stress on urban resources and cause great environmental damage. However, this could also speed up construction of many public utility projects in Delhi such as parking lots, bus depots, stadiums and religious structures. It could also simplify the process for acquiring an EC where agencies and companies apply for it in bulk leading to delay and escalation in project cost.

Experts say the proposed amendments even lack clarity. "The list of constructions that require EC mentions hostels but not colleges. There are many constructions not included in the list. This means these constructions will not go through the scrutiny of experts and there won't be any public consultations. These include recreational structures, religious structures, sports facilities and even public utility structures like parking lots," said Pushp Jain of EIA Resource and Response Centre.

The draft notification that lists out projects or activities that require prior EC only mentions those with a built-up area of over 20,000 sq m and less than 1,50,000 sq m, and

townships and area development projects covering an area greater than 50 ha or built-up area greater than 1,50,000 sq m.

Environmentalists say the lack of clarity in the proposed amendment could result in many problems in the long run. "A building that is not commercial today may become commercial later. So listing commercial buildings doesn't help. If you name only certain types of buildings, the inference is that the rest are excluded. So my concern is

Experts say that the proposed amendments lack clarity, which could result in a number of problems in the long run

that many constructions with possible environmental impact will be excluded," said Manoj Misra of Yamuna Jiye Abhiyan (YJA).

Similarly, there is no clarity on whether bridges would require EC. "It needs to be clarified if bridges are under EIA cover. If townships and area development projects are under EIA, then bridges, too, could fall under it," added Jain. "What about non-building construction activities? These could include large parking spaces, monuments and statues over large areas, and ghats and similar construction on river banks. The amendment has clearly been drafted in a hurry," Misra said.

National Green Tribunal recently issued a notice to the Centre on a plea seeking stay on the Signature Bridge project across Yamuna at Wazirabad till it gets a green nod.

GREEN HURDLES BEING CLEARED

Constructions that require environment clearance	
Residences	Before amendment: All building and construction projects required environment clearance.
Commercial buildings	
Hotels	
Hospitals	
Hostels	
Office blocks	
Information technology	
Constructions likely to be excluded from clearance ambit	
Public utility constructions	Bus stands/depots
Government buildings	Parking lots
Stadiums	Monuments
Religious structures	Ghats

Deccan Chronicle, Hyderabad dated September 25, 2014

Uranium poisoning water in 46 villages

V.L. SYAMSUNDAR | DC ONGOLE, SEPT. 24

After fluoride, it has been found that ground water in 46 villages under Peddacherlapalli, Chandrasekhara Puram and Chimakurthy mandals in Prakasam district contains uranium.

This was revealed in a chemical analysis test conducted by the rural water supply department at a testing lab in Hyderabad.

Groundwater in Diwakarapuram village under P.C. Palli mandal contains the highest traces of uranium, 48,863 parts per billion (ppb), and in Hariramarajapalem Colony it is 41,818 ppb. Similarly, the groundwater at Harijana Colony contains 35,369 ppb of uranium and it is 28,093 ppb in P.C. Palli mandal. In Chandrasekhara Puram mandal, groundwater contains 17,723 ppb uranium and at Aripalem its 10,828 ppb. In

New Threat

● Consumption of uranium contaminated water can lead to kidney-related diseases. At the same time, it increases the risks of cancer, says doctors.

● Officials are planning to set up R.O. plants under NTR Sujala Sraavanthi scheme in these mandals to supply 20 litres of clean drinking water at ₹2 from October 2.

Naidupalem village it's 3,233 ppb and in Bandlamudi Chimakurthy mandal it is 4,775 ppb.

However, the level of uranium presence is below the permissible limit of the Atomic Energy Regulatory Board, which is 60 ppb.

Still, the threat cannot be overlooked. The district medical and health

officer M. Chandraiah said, "Those consuming uranium-contaminated drinking water will get kidney related problems."

On the other hand, oncologist D.K. Raju Naidu of GGH said, "Those who consume uranium contaminated drinking water, have increased risk of cancer."

In Chimalamarri village under Chimakurthy mandal, more than 10 persons have been suffering from kidney problems. Both kidneys were damaged in some cases.

Medical tests conducted by a hospital revealed that another 40 people are also facing a similar threat.

As complaints of kidney problem have started pouring in from these mandals, officials are planning to set up R.O. plants under NTR Sujala Sraavanthi scheme in these mandals to supply 20 litres of clean drinking water at ₹2 from October 2.

The Times of India, Delhi dated September 25, 2014

Climate meet: Focus on 'right to grow'

Vishwa.Mohan
@timesgroup.com

New Delhi: As the much awaited Climate Summit opened in New York on Tuesday with a strong appeal from UN secretary general Ban Ki-moon for action from one and all to protect the world, India is expected to make a pitch for 'right to grow' for poor nations while showing its eagerness to move towards a low-carbon, inclusive growth path.

Environment minister Prakash Javadekar will outline India's view, which revolves around the premise that 'poor' countries need to develop to eradicate poverty

and 'rich' nations should take responsibility for global carbon emission cuts and share the financial burden to help developing nations towards their mitigation and adaptation efforts.

Javadekar will appeal to developed countries to capitalize the Green Climate Fund that can also be used to buy Intellectual Property Rights of clean energy technology for poor countries.

India's likely stand at the summit was reflected in Javadekar's intervention during the 'Major Economies Forum on Climate and Energy' in New York.

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

Deccan Chronicle, Hyderabad dated September 25, 2014

World leaders to fight climate change

United Nations (US), Sept. 24: World leaders on Tuesday urged ambitious action to combat climate change, but pledges remained well short of goals, with a year to go for an accord.

At a UN summit held after tens of thousands rallied around the world, France promised \$1 billion to the Green Climate Fund — making it the only contributor other than Germany to the new institution that would help the worst-hit countries. But UN Secretary-General Ban Ki-moon

called the meeting more to build momentum than to reach concrete achievements. It was the first such event since the Copenhagen summit on climate change ended in disarray in 2009 and aims to set the tone for a conference next year in Paris designed to seal a new global agreement.

French President Francois Hollande said the Paris conference should deliver a "global and ambitious" deal and warned that climate change posed a "threat to world peace and security."

US President Barack

Obama, addressing the summit hours after ordering strikes on Syria, said that the "urgent and growing threat of climate change" would ultimately "define the contours of this century more dramatically than any other" issue.

"We know what we have to do to avoid irreparable harm. We have to cut carbon pollution in our own countries to prevent the worst effects of climate change," Mr Obama said.

Mr Obama called for an "ambitious" but also "flexible" agreement — a nod to

political difficulties he would face if he needed the US Congress to ratify a treaty. Developing nations have balked at signing on to a binding accord without firm US commitments, noting that wealthy countries bear historic responsibility for climate change.

He said he met in New York with Chinese Vice Premier Zhang Gaoli — President Xi Jinping was absent — and told him that the world's two largest economies "have a special responsibility to lead" on climate change. — AFP

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