Sustainability Forum @ IIML

September 2014 Volume III, Issue 6

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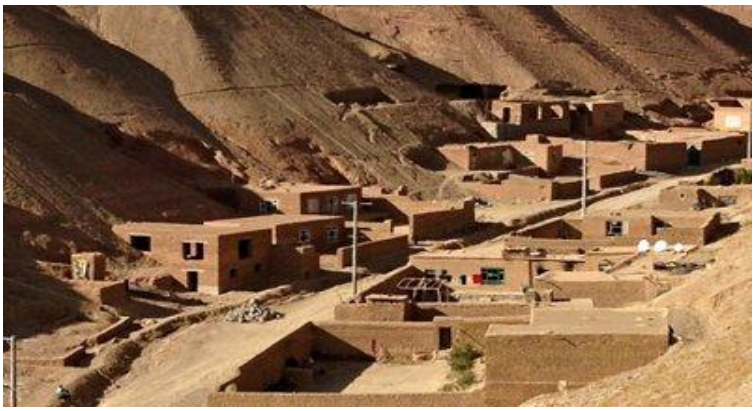
Business Sustainability News — International

After the Taliban: taking solar energy to remote parts of Afghanistan

By Karl Mathiesen, *for theguardian.com*



Power lines going up in a typical community in Bamiyan, Afghanistan. Photograph: Sustainable Energy Services International

Carved into the cliffs behind Bamiyan town centre in Afghanistan's central highlands, massive holes scar the homeland of the Hazara people, a Shia minority who live between the Hindu Kush and Koh-i-Baba mountain ranges. The hollows once housed statues of Buddha, until the Taliban infamously set dynamite to them in 2001.

But within a few kilometres of these monuments to tyranny stand symbols of renewal – rows of solar panels bringing stable electricity to the homes of local people for the first time – and with them the chance of improving their lives.

The United Nations Development Programme identified the lack of stable, affordable power as the largest obstacle to development in Bamiyan Province, but it is one of many. The Taliban destroyed most of the region's few schools. There is now just one sealed road and droughts are common. The deprivation "is hard to put into words," says Besmellah Jahed, the director of the Rehabilitation and Social Development Organisation, a local NGO.

"They've had 30 years of disappointment, 30 years of failed hope and promises. Hospitals, roads and airports – everything you need for a community to develop, they've been waiting for it to arrive," says Tony Woods, a New Zealand entrepreneur whose company Sustainable Energy Services International (Sesi) built the solar power system.

Before the solar installation started operating in December, locals had to rely on an expensive, haphazard system of neighbourhood generators, kerosene lamps and tiny, private solar panels to access even the most rudimentary power supply.

Solar panels at Mulla Ghulam, Bamiyan. Photograph: Sustainable Energy Services International

The Taliban massacres and destruction of the Buddhas ensured the province remains deeply antagonistic toward the counter-insurgency, making it a relatively stable oasis in the fractious countryside. This security has created an environment that encourages investment in infrastructure.

Sesi says the 1MW facility is central Asia's largest off-grid solar plant. It powers 2500 homes around the provincial capital, Bamiyan. During the winter months the cells are backed up for a few hours each night by a diesel generator. The New Zealand government, whose army administered the region during the western occupation, backed the installation with a US$14.1m grant.

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Five trends that show corporate responsibility is here to stay

Sustainability began as an ad-hoc response to environmental accidents but has evolved into a global movement

By Georg Kell, *Guardian Professional*

Regardless of whether you call it CSR, corporate responsibility, environmental, social and corporate governance (ESG) or sustainability, a common understanding is emerging around the world: a company's long-term financial success goes hand in hand with its record on social responsibility, environmental stewardship and corporate ethics.

CSR is catching on five global trends show it's going to stick. Photograph: Graham Turner for the Guardian

What began as ad-hoc damage-control responses by business to environmental accidents, corruption scandals or accusations of child labour in supply chains, has evolved into a proactive, coherent global movement. As business has gone global in recent decades – spurred by technology and liberal trade and investment – so too has the idea and practice of corporate responsibility.

The costs to business and society of getting it wrong and the benefits of getting it right are increasingly apparent. However, the question remains whether this is a passing trend or one that will continue to reshape the profile of business. Several big trends indicate that corporate sustainability is here to stay:

1. Transparency

As with technological change, transparency is an irreversible force. Reporting and disclosure will undoubtedly continue to grow, driven by ever-lower barriers to information access, higher public interest and regulatory changes. Already over 5,000 corporations disclose their ESG performance on an annual basis, and this number is bound to grow.

2. Trust

The ever-growing impact of business on society means that citizens and consumers expect corporate power to be exerted responsibly. As citizens more often are sceptical, self-organised and prone to challenge authority, the corporate community will have to raise its learning curve on building trust. This means being proactive and thorough in how a company views its responsibilities and impacts on society, and then showing how it manages operations accordingly.

3. Community participation

Business is expected to do more in areas that used to be the exclusive domain of the public sector – ranging from health and education, to community investment and environmental stewardship. Environmental issues are a good example of this blurred line. Natural resources are now recognised to be finite and under stress. What was once unthinkable is becoming reality: water and even air now come with price tags. Companies that collaborate with scientists, civil society and public regulators and show early on that they are part of the solution will come out ahead.

4. Accessing new markets responsibly

Business is moving from resource taker to market builder. With economic growth migrating southward and eastward, foreign direct investment is becoming more about building and gaining access to new markets and less about simply exploiting low-cost inputs. Overcoming barriers to growth, such as civil violence, uneducated workforce and unsustainable sources of energy, water, minerals and soil is now in the interest of business.

5. Initiatives to engage companies

Means for engaging in corporate sustainability are plentiful and growing. Initiatives, standards and consultancies are booming at national and global levels. The UN Global Compact, is engaging 8,000 companies in more than 145 countries on human rights, labour standards, environment and anti-corruption. Many others are producing practical resources in key areas.

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Bringing discipline to your sustainability initiatives

Many companies have more sustainability initiatives than they can possibly manage. Here's how to get them under control.

Sustainability has become a part of life for many companies. For some, it's a matter of meeting demands from customers seeking socially responsible goods and services. For others, it's about addressing pressure from stakeholders—including investors—or pursuing their own corporate values. For still others, especially those in a resource-constrained environment, it's a strategic imperative. Whatever the impetus, sustainability has become sufficiently pervasive that defining it and executing business programs, products, and practices with an eye to their environmental and social implications has become a demanding managerial exercise.

For some, sustainability has proved to be a valuable lens through which they have identified opportunities that they might have otherwise missed—to cut costs, reduce risk, and generate revenues. Consider the multinational consumer-goods company Unilever, for example, which changed the shape of a deodorant to use less plastic in packaging and created a concentrated laundry product that sharply reduces its use of water. German pharmaceutical company Bayer expects to save more than $10 million a year with a resource-efficiency check it developed to improve operations by using by-products and reducing wastewater. Global chemical company DuPont has recorded $2 billion in annual revenue from products that reduce greenhouse-gas emissions and another $11.8 billion in revenue from nondepletable resources.

Others, though, have struggled. To better understand the challenges they face at creating value from sustainability, we worked with several sustainability membership groups[1] to identify managers at 40 companies to volunteer to collaborate on analyzing their programs. What we found is that companies often have more initiatives under way than they can effectively manage. The sustainability movement is quite malleable, often including everything from environmentalism and resource management to corporate governance and human rights, and different managers in different regions can get quite enthusiastic about their own efforts without taking a company-wide perspective. In the most benign of such cases, the efforts are too fragmented to create much value—either for the company or for society.

Fortunately, the solution to that kind of problem is well known. In fact, we found that most companies would benefit from bringing more discipline to their sustainability initiatives by applying principles commonly associated with performance management: to keep their programs focused, set specific concrete goals, create accountability for performance, and communicate the financial impact.

Agree on where to focus

One of the biggest challenges companies face in sustainability is getting top-leadership attention. In a recent report for the United Nations Global Compact, 84 percent of the 1,000 global CEOs surveyed agreed that business "should lead efforts to define and deliver new goals on global priority issues," but only a third said that "business is doing enough to address global sustainability challenges."[2]

In our observation, the problem at many companies is often one of focus; two-thirds of companies in a representative sample from the S&P 500 have more than 10 different sustainability focus topics; some have more than 30. That's too many: it's hard to imagine how a sustainability agenda with more than 10 focus areas can break through and get the necessary buy-in to be successful. And if top management doesn't prioritize, then individual business units won't either, and the result is fragmented, decentralized, and not necessarily aligned with one another or with overall top-level goals. That diminishes not only the social and environmental impact but also the economic value. A recent McKinsey Global Survey found that companies with a unified strategy and no more than five strategic priorities were almost three times as likely to be among the strongest performers, both financially and on measures of sustainability.[3] Coca-Cola, for example, has set for itself a strategy it describes as "me, we, the world," which encompasses its approach to improving personal health and wellness, the communities in which it operates, and the environment. Within this strategy, the company reports making material, tangible progress on metrics related to three specific areas of focus: "well-being, women, and water." The company does not ignore other issues such as climate change and packaging, but it has made it clear that this is where it wants to lead.

To develop a clear set of priorities, it is important to start by analyzing what matters most along the entire value chain, through internal analysis and consultations with stakeholders, including customers, regulators, and nongovernmental organizations (NGOs). This process should enable companies to identify the sustainability issues with the greatest long-term potential and thus to create a systematic agenda—not a laundry list of vague desirables. After extensive consultations, for example, BASF, the global chemical company, put together a "materiality matrix" (exhibit). This chart ranked the importance of 38 sustainability-related issues, based on their importance to BASF and its stakeholders. (Other companies use similar matrixes.) Such exercises help companies to recognize the most important issues early and get internal stakeholders to agree on what will create the most value. Their focus needn't be mechanical but should instead reflect discussion on the strategic, reputational, and financial merits of different efforts.

Once the priorities are identified—in our experience, no more than three to five is best—the next step is to develop a fact base from which to create a detailed financial and sustainability analysis. This includes the same kind of valuation and financial analysis a company would do for any other business opportunity, including a detailed analysis of the market value or value at risk and implementation. Siemens, for example, used such an approach to sort through a range of potential priorities and home in on one—helping customers to reduce their carbon impact. As a result, it has created an environmental portfolio of green products and services, including energy efficiency, renewable energy, and environmental technology. In a 2013 interview, Siemens reported that this had generated revenues of €32.3 billion and saved 377 million metric tons of carbon emissions.

Exhibit

Set specific, concrete goals

After completing the initial analysis, the next step is to translate this information into external goals that can be distilled into business metrics. These goals should be specific, ambitious, and measurable against an established baseline, such as greenhouse-gas emissions; they should have a long-term orientation (more than five years) and be integrated into business strategy. Finally, their intent should be unmistakable. One company stated as a goal: "Reduce the impact of our packaging on the environment." From a different company came a sharper version: "Eliminate 20 million pounds of packaging by 2016." Along the same lines, "reducing emissions" is a vague and almost meaningless phrase—it doesn't say by how much the company should reduce emissions, by when, or compared with what benchmark. The approach taken by another sustainability leader is stronger and more specific: "Reduce 2005 CO2 emissions by half by 2015."

It is important to build internal support to meet these goals. Our analysis found that the companies that excelled at meeting sustainability goals made sure that they involved the business leaders responsible for implementing them from the start. One global manufacturer we interviewed announced in 2010 that it would reduce greenhouse-gas emissions and energy consumption by 20 percent by 2020. To do so, it has set up energy assessments and energy-management plans, established global programs to optimize procurement and building standards, trained and developed internal "champions" and coordinated best practices, and began to use renewable energy where possible—communicating early wins internally through a newsletter and regular conference calls. Four years into the ten-year effort, the project is already net present value positive.

Setting ambitious external goals motivates the organization, forces resources to be allocated, and promotes accountability. An analysis of companies that are part of the Carbon Disclosure Project found that those that set external goals did better when it came to cutting emissions—and also had better financial returns on such investments. Stronger goals, then, seem to encourage innovation; people may feel more motivated to find ways to meet them. Lack of goals is a sustainability killer: "What gets measured gets managed" is as true of sustainability as it is for any other business function. And yet it is not happening. McKinsey analysis of S&P 500 companies suggests that as of this writing only one in five S&P 500 companies sets quantified, long-term long-term sustainability goals; half do not have any.

Communicate the financial impact

Despite the growing evidence of the value of investing in sustainability, many executives wrestle with lingering doubt. Senior leaders will give sustainability lip service but not capital if they do not see financial benefits. "Sustainability metrics can seem like random numbers and don't do much," one chemical-industry executive told us. "For our businesses, sustainability efforts have to compete directly with other demands, which means that financial impact is key." Indeed, nearly half of the research participants reported that the pressure of short-term earnings performance is at odds with sustainability initiatives. A constructive response is to make the case that sustainability can pay for itself—and more. This needs to be done rigorously—even over-communicated—reinforced with fully costed financial data and delivered in the language of business.

This is, of course, much easier said than done. At Intel, for example, although business leaders were interested in saving water, they saw little financial justification to do so: water was cheap. Advocates of the initiative were able to calculate that the full cost of water, including infrastructure and treatment, was much higher than the initial estimates. Saving water, they argued, could therefore create value in new and unexpected ways. On that basis, Intel went ahead with a major conservation effort. The company now has a finance analyst who concentrates on computing the financial value of sustainability efforts.

Making the business case for sustainability might sound like an obvious thing to do, but apparently it isn't. Only around a fifth of survey respondents reported that the financial benefits are clearly understood across the organization.

Sustainability initiatives can be challenging to measure because savings or returns may be divided across different parts of the business, and some benefits, such as an improved reputation, are indirect. It is important, then, not only to quantify what can be quantified but also to communicate other kinds of value. For example, an initiative might improve the perception important stakeholders—including consumer groups, NGOs, or regulators—have of the company, the better to build consumer loyalty, nurture relationships with like-minded nonprofits, and inform policy discussions.

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Plastic bag use rises for fourth year

More than 8bn single use plastic bags given away in UK supermarkets in 2013, figures from waste programme show

By Adam Vaughan, *The Guardian*

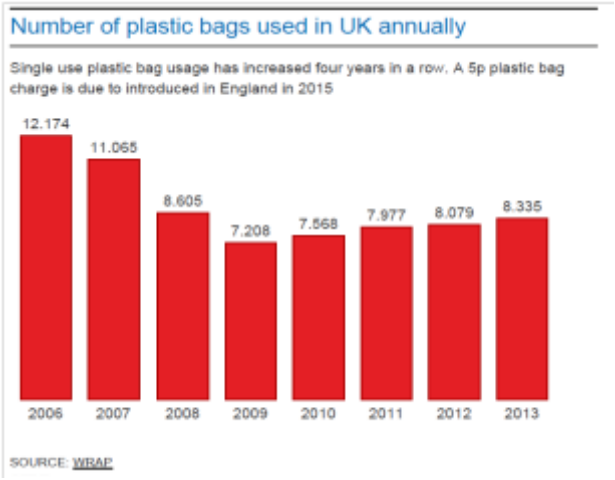
Plastic bag use rose 3% in 2013. Photograph: Rex

The number of plastic bags given out in UK supermarkets has risen for the fourth year running, to 8.3bn bags a year, official figures show.

The rising consumption comes ahead of a 5p charge in England that will be introduced in 2015 after the general election, and a 5p charge in Scotland due to come into force this autumn.

Retailers in Wales reported reductions in such "single use" bags of up to 96% following the successful implementation of a 5p charge there in 2011 that goes to charities including Keep Wales Tidy and the RSPB.

Data published on Tuesday by the government's waste programme, Wrap, shows an increase of 3% in the number of bags given away at supermarkets between 2012 and 2013.



Dr Sue Kinsey, a spokeswoman for the Break the Bag Habit campaign, whose members include Keep Britain Tidy, the Campaign to Protect Rural England, and the Marine Conservation Society, said: "The 8.3bn figure is boggling. But much worse is realising that it only reflects the bags given out at some supermarkets – the real figure on bag usage will be much higher. This is why an effective charging system is so important and why the government needs to ensure that small retailers and paper bags are included within the [bag charge] scheme in England."

The association that represents most of the big retailers, the British Retail Consortium, described the increase as small and said that the "way we shop, more frequently topping up our shopping to add to our larger weekly shops means more shopping trips and more bags."

But 8.3bn bags still marks a significant reduction from the more than 12bn used in 2006. The number of bags given away fell for several years in a row after 2006 following a voluntary agreement by retailers to cut their use, media campaigns against plastic bags and a popular movement that saw some towns, such as Modbury in Devon, go plastic bag-free.

The bag charge due to come into force in England next year has been criticised by MPs for an exemption that means small shops will not have to apply the 5p charge.

Alice Ellison, the BRC's environment policy adviser, said: “The reductions in Wales and Northern Ireland indicate that legislation can trigger significant reductions in carrier bag use. However, the proposed regulations in England are unnecessarily complex and offer too many exemptions. As drafted they will not deliver the same environmental impact as the rest of the UK and need the government to accept that the best way is a simple scheme which is consistent and easily understood by everyone."

Jim Griffiths, minister for natural resources in Wales, said: “People in Wales have adapted extremely well to our 5p carrier bag charge which was introduced in October 2011 and supermarkets across Wales are full of people reusing shopping bags. These latest figures show that consumption of carrier bag use in Wales has reduced by 79% since 2010, and this really is an excellent result, however there is no room for complacency."

<Source>

Boeing to make jet fuel using tobacco

NEW YORK: This new tobacco plant will sure make smoke but the kind that comes from the exhaust of an aeroplane.

Boeing and South African Airways (SAA) are collaborating to make sustainable aviation bio-fuel from a new type of tobacco plant.

Known as solaris, the hybrid plant is a nicotine-free alternative to traditional tobacco.

Test farming has started in South Africa and bio-fuel production is expected in the next few years, said a Boeing press release.

Initially, oil from the plant's seeds will be converted into jet fuel.

As newer technologies develop, the rest of the plant will also be used to make aviation bio-fuel.

Test farming has started in South Africa and bio-fuel production is expected in the next few years, said a Boeing press release.

"By using hybrid tobacco, we can leverage knowledge of tobacco growers in South Africa to grow a marketable bio-fuel crop without encouraging smoking," Ian Cruickshank, a specialist with SAA's group environmental affairs, said.

In October 2013, Boeing and SAA had announced they would work together to develop a sustainable aviation bio-fuel in southern Africa.

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Tips:

Today we all understand that to promote sustainability what is required to be done. But our lifestyle has become so complex that we often overlook and behave in such a manner that does not go along with sustainability. The fact is that sustainability awareness is there but while doing our day to day work we forget the manner in which we should act. So the only thing required, is to modify our behavior, to put it more precisely habits are to be inculcated among people. We realize our pious duty to remind every citizen of this world of their prime duty towards the society. In this context we are reminding each and everybody to keep following in their minds:

- Make it a target to reduce your electricity consumption by 10 percent. For this you may replace your incandescent lamps with energy efficient lamps like LED and CFL. Switch off and unplug all electronic appliances and devices when not being used, insulate your house properly so that energy can be saved on heating and cooling. If you are to purchase some appliance keep in mind that energy saving star rated appliances consume lesser energy. The energy star rating 1 is least energy efficient and 5 is most efficient.
- It may be convenient to use small shampoo bottles so use small shampoo bottle but when exhausted refill your bottle with bulk shampoo. Same practice can be adopted for conditioner and face/ hand wash too.
- Reduce your consumption of cosmetics and consider homemade substitutes such as Rose water, cucumber, Fuller’s Earth (Multani Mitti), Gram flour, vinegar etc.
- Use 100% recycled and unbleached toilet paper if required else use water.
- Donate any extra stationery left unused to needy people. Always opt for reusable stationery like refillable fountain pen, mechanical pencil etc. Use recycled paper as far as possible for writing or taking printouts.
- If constructing a house please ensure that you have a rain harvesting system in it. Accumulated water can be used for irrigating the garden and other purposes.
- If there is a space for kitchen garden grow food and vegetables in it. Thus you can get fresh and hygienic vegetables and also reduce the dependency; above all you will have great satisfaction.
- Quit use of Aerosol cans that use CFC as it is harmful for Ozone layer.
- When time is not a constraint ride bicycle for covering small distances instead riding motorcycles or motor car which are run on fossil fuels.
- Make a pool of your friends and neighbors and purchase magazines of your choices and share among yourselves. This will save considerable amount of paper and of course money too.
- Get repaired and painted your old unserviceable furniture if possible rather than going outright to buy a new one, if it can’t be done reuse its timber for making other items of use. You may also consider it to be given for charity.
- Say no to poly bags carry your own reusable jute or cloth bags to buy vegetables, fruits and grocery.

Apple eyes solar to power the cloud and iPhone 6 sapphire manufacturing

By Suzanne Goldenberg, *for theguardian.com*

Apple's Maiden data centre in North Carolina is powered by a large 20MW solar farm and biogas fuel cells. Photograph: Apple Inc

The skies are threatening to pour on the Apple solar farm but as the woman in-charge of the company's environmental initiatives points out: the panels are still putting out some power. Apple is still greening its act.

The company, which once drew fire from campaigners for working conditions in China and heavy reliance on fossil fuels, is now leading other technology companies in controlling its own power supply and expanding its use of renewable energy.

After converting all of its data centres to clean energy, the Guardian understands Apple is poised to use solar power to manufacture sapphire screens for the iPhone 6, at a factory in Arizona.

And in a departure for its reputation for secretiveness, Apple is going out of its way to get credit for its green efforts.

"We know that our customers expect us to do the right thing about these issues," Lisa Jackson, the vice-president of environmental initiatives told the Guardian.

In July, the company invited journalists on a rare tour of its data centre in North Carolina to showcase its efforts.

Until a year ago, the telegenic Jackson was the front woman for Barack Obama's environmental ambitions as the administrator of the Environmental Protection Agency.

Now she is leading the effort to shrink Apple's carbon footprint – and make sure customers realise the company is doing its bit to decarbonise its products and the internet.

Data centres require huge loads of electricity to maintain climatic conditions and run the servers carrying out billions of electronic transactions every day.

With Apple's solar farm, customers could now be confident that downloading an app or video-chatting a friend would not increase carbon pollution, Jackson said.

"If you are using your iPhone, iPad, Siri or downloading a song, you don't have to worry if you are contributing to the climate change problem in the world because Apple has already thought about that for you. We've taken care of that. We're using clean energy," she said.

Lisa Jackson, the former administrator of the US Environmental Protection Agency, is now Apples' front woman on green issues. Photograph: Manuel Balce Ceneta/AP

The company is also moving to install solar and geothermal power at a plant in Mesa, Arizona that has been manufacturing sapphire glass. Apple would not directly comment on the Arizona factory but the state's governor, Jan Brewer, has publicly praised the company's decision to relocate there and to use solar and geothermal in manufacturing.

"We are aware that almost 70% of our carbon footprint is in our supply chain," Jackson said. "We are actively working on the facilities that we have here in the United States".

The initiatives mark a turnaround for Apple, which was criticised in the past for working conditions and the use of toxic chemicals at its factories in China and for its heavy reliance on carbon intensive sources such as coal to power the cloud.

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Ending tariffs on green goods will show free trade can fight climate change

***James Bacchus**: The supposed choice between economics and environment is false, tariff cuts on green goods are a good move*

By James Bacchus, *Guardian Professional*

Our economic future cannot be separated from our environmental future. Advocates for trade must understand this and seize the perfect opportunity to prove that freer trade can combat climate change and contribute to more overall sustainability.

Freeing trade and fighting climate change are often portrayed as separate causes, ever at odds, working at cross-purposes, while contributing unavoidably to inevitable trade-offs between economic growth and environmental preservation. The two causes are pursued in separate silos of global concern through separate negotiations employing separate policy and legal languages.

But the landscape is changing. The US, China, the European Union's 28 member states, and 11 others among the 160 member countries of the World Trade Organization (WTO) have launched negotiations to eliminate global tariffs on green goods. There is now the very real prospect that the first binding global agreement to fight climate change will come from what may seem to many an unlikely source – the WTO.

Initially, these new trade talks are solely about tariffs. Total global trade in environmental goods such as wind turbines and solar panels amounts to $1tn and growing fast. Tariffs on some of these products are as high as 35%. Eliminating needless taxes at the world's borders would speed the flow of new green technologies to all the places in the world that need them urgently in the struggle to confront climate change.

This tariff-cutting will be no easy task. The WTO has been labouring without success to liberalise trade in environmental goods and services in global trade negotiations for more than a dozen years now. The decision of this subset of WTO members to deal with the issue of green goods separately is a good sign. But hurdles remain.

The biggest hurdle will be agreeing on a definition of an "environmental good". Is it one whose purpose is environmental protection? Or should the definition be broader? Should it include goods that perform more efficiently or environmentally than the alternatives? How about goods that are made in a green way? What about green component parts?

Trade negotiators seem inclined for now toward a fairly narrow definition. They have chosen to begin with a list of 54 environmental products. This list is a good starting point – but only a starting point.

Another hurdle will be agreeing upfront on how to add new products easily as green technologies continue to evolve. WTO members have learned this lesson from their frustrating experience with an agreement abolishing tariffs on information technology products. The IT product list is frozen in 1996. Negotiators are trying now to add such "newfangled" IT products as tablets and smart phones.

The goal is for these tariff cuts to take effect once enough WTO Members have joined that they account for a "critical mass" of world trade in environmental goods. The countries launching the negotiations account for 86% of that trade. A "critical mass" may be viewed as 90%. At that point, the tariff cuts would be extended to all 160 WTO Members – including those who have not yet signed the agreement.

While eliminating needless taxes in trade could speed up the flow of green technologies but will have only a minor effect on overall global carbon emissions. Photograph: Jon Woo/REUTERS

Tariff-cutting, however, will have only a minor effect on overall global carbon emissions. The larger challenge for trade negotiators will be to show that these new efforts in the WTO can lead to more than merely tariff-cutting. A WTO agreement to eliminate duties on green goods must become the foundation for a broader agreement to confront climate change on many fronts by promoting global trade in sustainable energy.

Beyond tariff-cutting is the greater opportunity for the WTO. Why stop by simply eliminating border taxes on trade in environmental goods? Why not do much more? Why not prove that the supposed choice between economics and environment is often a false choice, and that efforts to promote trade and protect the climate can and must be mutually reinforcing?

By all means, eliminate tariffs. But make that only the beginning. Go on to eliminate barriers, too, to trade in environmental services. Address standards, regulations and other non-tariff trade barriers that are often more restrictive than tariffs. Strengthen intellectual property regimes for clean innovations. Enhance the sustainability of global supply chains. Encourage sustainable government purchases. Call a halt to duelling trade remedies over green subsidies. And take real action to discipline energy subsidies of all kinds in ways that promote sustainability.

Serve trade and climate together by transforming this proposed tariff agreement into a comprehensive sustainable energy trade agreement for all the world.

James Bacchus chairs the global practice group of the Greenberg Traurig law firm and the Global Agenda Council on Governance for Sustainability of the World Economic Forum. He is a former Member of the Congress of the United States, a former Chairman of the Appellate Body of the World Trade Organization, and a member of the High Level Advisory Panel to the United Nations on the current climate negotiations.

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Fashion meets renewable energy – clothes that charge your smartphone

From fibres that convert sunlight into electrical energy, to uploading your kinetic energy to a green energy bank, the worlds of fashion and technology are merging

Fashion can harness our kinetic energy to produce renewable energy. Photograph: Nic Bothma/EPA

When you think about how fashion will work alongside technology in the future, it might be hard to break from science-fiction-heavy ideas. However, fashionably using solar, wind and even kinetic energy to charge devices, keep us connected and even donate our energy to non-profits is being explored by a number of design houses.

Solar textiles

Meg Grant, of Solar Fiber, says she and co-collaborators Aniela Hoitink, Marina Toeters, Ralf Jacobs, and Professor Derek Schlettwein from Giessen University are already pushing the textile boundaries in terms of solar fibres.

"If you look around you, textiles cover so many surfaces, so why not give them a 'super power' that can take advantage of this, like solar energy harvesting," says Grant.

The idea behind Solar Fiber is a flexible photovoltaic fibre that converts sunlight energy into electrical energy via a yarn that can be worked into all sorts of fabrics. Its latest prototype is the solar shawl which displays the amount of energy being generated in real-time.

Solar fibres can convert sunlight energy into electrical energy. Model: Stephanie Samson. Photograph: Brian Smeulders

Grant says the project is 100% part-time, voluntary and open-source and prototypes are currently only capable of generating tiny amounts of energy. "We are open-source because we believe that this kind of technology could be so game-changing that it should be in the public domain," says Grant.

After graduating from ArtEZ Institute of the Arts in Arnhem, the Netherlands in 2010, Pauline van Dongen started her own womenswear label. Working with companies from the fields of science and innovation, van Dongen aims to merge fashion and technology and like Grant, her focus is on solar textiles. She and her team call it Wearable Solar, clothing that gives people an opportunity to generate sustainable energy through what they wear and charge their tech on the go.

Wearable Solar Dress by Pauline Van Dongen Photograph: Mike Nicolaassen

The Wearable Solar collection currently consists of two designs, a coat and a dress made of wool and leather, which produce energy through their integrated solar cells. The coat incorporates 48 rigid solar cells and the dress has 72 flexible solar cells. When worn in full sun for two hours, both garments can generate enough energy to allow a typical smartphone to be 100% charged. The solar cell compartments can be opened and revealed to the sun when needed and folded back when they are not being used.

"Wearable Solar is a sustainable answer to our increasing demand for energy and connectivity, while also anticipating the vastly expanding wearable technology market," says van Dongen.

Kinetic energy

Professor Rebeccah Pailes-Friedman is a designer and author of Designing With Smart Textiles, due to be published in 2015. She says, "If you think about what traditional fashion is, it's such a small part of the real world, but then when you look at performance fashion, clothing that has to do something, you see a much larger part of the population using them."

Pailes-Friedman focuses her research on light and movement in smart textiles. "Really good design is when you don't notice it. We have always lived and worked in clothing so we know how it functions, 98% of how we wear it is no mystery to us so technology being incorporated needs to be part of and as intuitive as our clothing." An example of this seamless design might be kinetic energy, where movement generates energy.

Energy harvesting

Last winter, Damon Ahola, a recent graduate of the School of Visual Arts, MFA in Products of Design, was running on a treadmill at the gym watching people bobbing up and down on ellipticals, stair masters and bikes. "I thought we were all exerting a huge amount of energy while at the same time consuming a vast amount of electrical energy." His gym observation led him to question how to take advantage of kinetic energy through a project called Harvest which investigated the potential of integrating energy harvesting into our lives. Ahola said he began by approaching the work from a user-centric point of view, initially exploring what activities are appropriate for energy harvesting.

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Green Building Spotlight: CLIMATE RIBBON™ Replaces Air Conditioning in Miami

SustainableBusiness.com News

Can a "climate ribbon" replace air conditioning? People visiting an open air shopping center in Miami will soon find out.

Topping the $1 billion mixed use Brickell City Centre which spans four blocks of waterfront will be a 150,000 square foot climate ribbon - an enormous overhead trellis made of steel, glass and fabric. It covers the walkway of the shopping center, where there are open-air shops, escalators, restaurants, and terraces.

It will protect visitors from oppressive heat and the odd rain shower by creating a micro-climate that stabilizes the temperature.

How does it work? Under the glass is an undulating design that captures cooling ocean trade winds, encouraging air flow, while hanging fabric panels act like huge Venetian blinds - arranged to block the harshest of the sun's rays. "The orientation of a series of louvers is very specifically designed to protect the shop fronts from direct sun," says Hugh Dutton of Paris-based Hugh Dutton Associés, which participated in developing the design.

The sophisticated environmental management system allows daylight to penetrate - giving visitors the feeling that they are outdoors - and also captures rainwater for reuse at the rate of 5 million gallons a year. In the future, it may also produce solar energy.

It's designed to achieve three benefits: ventilation so that air conditioning isn't needed in the shopping center's public places; shelter from inclement weather; and solar shading for the hottest times of the day.

More details:

- The surface is a dynamic series of flat, inclined planes positioned at variable angles and supported by a steel frame. Positioning is the result of careful analysis of sun paths, wind patterns and the need for a flexible structure.
- The slope of each plane allows rainwater to drain easily into multiple storage cisterns for reuse. Water is stored above ground, eliminating the need for electrical pumping when it's distributed.
- An upper glazed 'skin' provides rain protection and acts as a partial filter for solar radiation.
- Inside the retail center, a continuous series of dramatic fabric 'blades' provides shade. Blades vary in height and angle based on the direction of the sun's rays, while maximizing views of the sky.

This provides a sheltered, but still open air environment, and the design floods the interior with patterns of light throughout the day.

- Toward the eastern end it gently lifts up to create a 'scoop' that captures trade winds in the summer. Other parts of the structure act as deflectors or additional 'scoops', ensuring that a flow of air, between 6-9 knots in speed, keep the temperature comfortable throughout the public spaces.

At a cost of $20 million, it's a collaborative effort between the developer, Swire Properties, the group that's building the structure - German design firm Gartner - project architect, Arquitectonica, Cardiff University of Wales and Carnegie Mellon.

"From its initial conception, the CLIMATE RIBBONTM has provided an architectural shade system to protect visitors, so it's gratifying now to see the dynamic evolution of the structure to include so many climate management features," says Stephen Owens, president of Swire Properties, Inc. "We feel this element will become a distinctive design emblem of Miami and will be reason alone for people to visit and experience Brickell City Centre."

Swire has registered it as a LEED for Neighborhood Development - because it's part of a larger project that has residential and commercial elements. The project is an expansion of Brickell, a shorefront development constructed in the 1980s.

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Drought in northern Kenya: 'Today you are rich, tomorrow you have nothing'

By Jessica Hatcher in Lodwar, *for theguardian.com*

Kalokol, northern Kenya: children collect water from holes dug in a dry riverbed. The town's only other water source is a defunct borehole. Photograph: Jessica Hatcher for the Guardian

This time last year, Samuel Aboto had 600 goats; today, he has none. "I am not exaggerating – everybody knew my goats," he says as he shelters from the sun under a thatch of reeds. Twenty-six months of drought has hit pastoralists in northern Kenya hard, and Aboto is facing the fourth poor rainy season in a row. The last good rain in Nayanae'angikalalio, central Turkana, was between March and May 2012.

Two weeks ago, there was one small shower. Aboto points to an outcrop across a few miles of tawny sand and scrub. "There," he says, jabbing with his finger. A line of camels cross the horizon, the only animals the land can currently support.

Aboto, who has four scrawny sheep remaining, draws a comparison to three years ago, when drought triggered a famine in Somalia and almost 4 million Kenyans were at risk of starvation (pdf). "It was almost the same as this," he says. "That was a combination of lack of grass and disease; this time it's just drought."

The findings of a Kenyan nutrition survey, published this month by the health ministry in consultation with the UN and NGOs, have alarmed experts. In the most vulnerable arid and semi-arid regions, which span about 80% of the country, one in four children is acutely malnourished and requires medical attention.

Overall malnutrition rates in Turkana, Baringo and Mandera counties, and in the west of Wajir, have deteriorated significantly, according to the World Food Programme (WFP). A malnutrition rate of more than 15% is classified as a critical emergency by the World Health Organisation; in many parts of Kenya it exceeds 20%. "The survey found truly alarming levels of malnutrition," says Challiss McDonough, a WFP spokeswoman.

In Turkana Central, the rate of moderate and severe acute malnutrition is 60% higher than a year ago, according to Kenya's health ministry. Last year, 17% of those surveyed – pregnant women, nursing mothers and under-fives – were acutely malnourished. That proportion has risen to 29%.

Women listen to elders discussing drought in Nayanae'angikalalio, Turkana Central. Residents say the village has not had adequate rainfall since May 2012. Photograph: Jessica Hatcher

Aside from drought, numerous factors are affecting access to food in Kenya's arid north, where the majority of people are pastoralists. Rapidly increasing populations have piled pressure on resources, and people have become less mobile. During a dry spell, herders once moved freely across the borders of Ethiopia, South Sudan and Uganda in search of fresh pasture. These days, national and regional boundaries, and the proliferation of small arms along them, have made it risky to do so.

Cattle raiding is out of control on some borders. "Conflict in the south and east [of Turkana County] is not traditional cattle rustling. It has become commercialised. There are businesses; men and women waiting to load [the cattle] and take them to market," says the deputy county governor, Peter Lokoel. It must be understood, he says, that conflict is contributing to malnutrition rates across the county, especially either side of Turkana's southern border. "Today you are rich; tomorrow you have nothing," he says, referring to the clashes between raiders in Turkana and Pokot.

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How did China and India beat the U.S. on energy efficiency?

By Elisa Wood

A new international energy efficiency ranking by the American Council for an Energy-Efficient Economy places the United States at a lowly 13 out of 16 leading world economies.

There are many reasons to bemoan the finding. The United States is throwing away a lot of economic opportunity.

Energy is a basic economic input. Using more where less suffices is like paying two workers for a job easily done by one.

"Energy efficiency means using less energy to accomplish the same or better results," said Rachel Young, ACEEE research analyst and the report's lead author, during a July news conference. "Using less energy to do more means nations preserve valuable natural resources and can build, transport and grow at a lower cost than countries that waste their energy resources."

China does better

Despite its iconic images of people wearing masks in polluted cities, China bested the United States. So did India, where the grid functions erratically. In fact, all major economies outperformed the United States except for Russia, Brazil and Mexico. Germany topped the list, followed by Italy, the European Union, China and France.

"Stagnation and inaction" characterizes the U.S. energy efficiency scene, Young said.

True, the United States has improved with appliance standards, government/industry initiatives, and recent fuel economy standards. "However, the overall story is disappointing," she said.

Since the ACEEE's last international energy efficiency ranking two years ago, the U.S. "has progressed slowly and has made limited improvement," she said. "In contrast, Germany, China and Canada are pulling ahead."

It's odd that the United States performed so poorly, given that it is home to innovation centers such as Silicon Valley that are developing impressive energy efficiency technologies. Plus, the U.S. has a president who clearly champions energy efficiency more than his predecessors.

So what's the problem?

Energy efficiency efforts are scattered throughout the U.S. It is largely a local play, with some states aggressive in their pursuit and others negligent. The federal government could create a focal point for achievement, but Congress has done nothing significant on energy efficiency for a long time.

"We need policy from Congress to help folks back home, help companies back home, get a focus on the benefits of less is more," said U.S. Rep. Peter Welch of Vermont.

Welch sponsored legislation to create a national energy efficiency target. He also supports stronger national building codes and education for industry. the U.S. needs more emphasis on energy efficiency in federal transportation planning too, according to Welsh.

"These are all things that are going to make us money," he said.

Here are some interesting statistics from the report that shed more light on the United States' lowly international energy efficiency ranking.

- The United States is one of only two countries with no national energy-savings or greenhouse gas reduction plan.
- Since ACEEE's last international energy efficiency ranking, R&D in energy efficiency has declined.
- The U.S. uses less combined heat and power (CHP) than many other countries.
- In transportation, the U.S. ranked second to lowest. This is because of its poor fuel economy and the high number of miles traveled per vehicle. the U.S. also has scant mass transit compared with many other major economies.

It's not all bad news; the U.S. did pretty well in some categories. Even though there is no national mandate, states have imposed stringent building codes. And the EnergyGuide and Energy Star labels offer best practices to the world market for voluntary appliance and equipment standards.

But how is it possible that China, with its heavily polluted cities, beat the United States?

"Pollution and energy are related, but they are not the same thing," said Steve Nadel, ACEEE's executive director. "While China has more efficient cars, for example, the U.S. cars are much cleaner. The U.S. has much stronger emissions standards on cars, likewise on fixed sources. Also China uses far more energy from coal."

Energy efficiency may help China reduce pollution, "but absent cleaning up their power plants and cars a lot more, their air is not going to improve," Nadel added.

In the United States, however, the reverse is true. Efforts to clean up the air, carbon dioxide in particular, could lead to greater energy efficiency. The Environmental Protection Agency in June released a draft proposal to reduce carbon dioxide from existing power plants. Energy efficiency is seen as the least cost way to meet the standard. So if the proposal is finalized as it is now conceived, America could see a significant boost in energy efficiency projects.

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Sweden reveals world's first garment made entirely from recycled cotton

New technology that recycles cotton could reach scale and offer hope for fast fashion, but composting might be a better option

By Elisabeth Braw, theguardian.com,

In the future, we could add nutrients to clothes and compost them, but dyes are current barrier to this solution. Photograph: Alamy

In 2010, the world consumed a record 69.7m tonnes of clothes. That's up from 47.4m tonnes just 10 years earlier, according to statistics from the United Nations Food and Agriculture Organisation (FAO).

The unwieldy figures translate to approximately 10kg of clothes per person in 2013, up from 6.7kg 10 years earlier. That may not sound like a lot but the world population is growing, as are our western habits. Our apparel consumption is likely to keep increasing, an alarming thought as most worn-out clothing goes straight to the landfill or other unsustainable destinations.

"Until now old clothes have often been used as filler material for underneath wall-to-wall carpeting, but when the carpeting is removed or the building is knocked down, the material goes to the landfill anyway," says Lewis Perkins, senior vice president of the San Francisco-based Cradle to Cradle Products Innovation Institute, which develops sustainable new uses for discarded products.

Now several companies are trying to change that equation. Scientists at Stockholm's Royal Institute of Technology have developed a way of recreating cotton, which not only accounts for roughly a third of the world's textile consumption but is also in danger of becoming a scarce resource as the world's increasing population needs more land for food production.

In June, a group of collaborating Swedish companies presented the world's first garment made entirely from recycled cotton: a yellow dress that looks no different from the fashion range at H&M or Zara. "The scalability of this process is enormous," says Henrik Norlin, business development manager at re:newcell, the company that made the pioneering material. "The technology allows us to recycle all materials that contain cellulose."

Dress made entirely from recycled cotton. Photograph: SKS Textiles

This is how it works: old cotton clothes are brought to a factory and shredded then turned onto a porridge-like substance. After non-recyclable pieces like zippers and buttons have been removed, the porridge is broken down to the molecule level and turned into a fibre substance to be used for thread, resulting in rayon fabric. "We can recycle fabrics that contain a mix of cotton and other materials but get the best results when recycling pure cotton," says Norlin.

Re:newcell is now preparing to build its first fabric-recycling factory, which will open its doors within the next 18 months. "It will be able to process 2,000 tonnes per year, allowing us to show the scalability of the process," says Norlin. Re:newcell will then add factories in other European countries like Britain and Germany, that produce large amounts of cast off clothing.

The company is also forming partnerships with textile companies, which will buy Re:newscell's pulp rather than the typical rolls of fabric. One of the companies already involved is SKS Textile, based in the Swedish city of Borås. With other companies involved in the research and development behind the yellow dress, SKS Textile was responsible for making it. Chief executive Urban Olsson explains that SKS is working with the public sector, primarily the county-led healthcare system, to supply healthcare workers with uniforms made from the recycled fabric.

Japanese company Teijin has developed a similar technology that polymerises polyester, turns it into polyester chips and then turns those chips into new fibres of equal quality. The result is a new polyester fabric that's just as good as the fabric in the discarded clothes. According to Teijin, the process reduces CO2 emissions by 77% compared to polyester made from petroleum. Though the new garments do require virgin polyester – that is, non-recycled content – the process also reduces the consumption of petroleum, the raw material from which polyester is made.

The prospect of clothes recycling makes fast fashion seem a lesser environmental crime, and from a sustainability perspective the Swedish cotton recycling scores particularly well as it uses no new ingredients other than timber, whose cellulose fibres can be added to the existing cotton ones. Some clothing manufacturers, including Levi's, already incorporate discarded clothing into new items.

But, cautions Perkins, recycling of fabric often involves dangerous materials such as heavy metals. (Norlin says that Re:newcell's process is completely clean.) And because rayon is much harder to recycle than cotton, the recycling doesn't go full circle. A better approach, argues Perkins, would be to compost the clothes. "The dyes are a problem, which is why we need innovation in dyes," he says. "But in the future we could even add valuable nutrients to clothes, which would benefit the soil when we compost them."

Recycling or composting: plenty of innovation will take place in the near future. And Norlin predicts that clothes recycling will take a similar trajectory to paper recycling: "Early on in paper recycling, only a small share of paper was recycled. Now most paper is recycled and yields good results. We could see fabric do the same thing."

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Tackling the food waste challenge with technology

Innovation in packaging and refrigeration can reduce waste – as can changes in behaviour

By Wayne Visser, *theguardian.com*,

Modified atmospheric food packaging which uses a protective gas mix could help extend food freshness. Photograph: Jochen Tack /Alamy

The challenges of the 21st century will stretch our collective capacity for innovation like never before.

Take food security. Our mission, should we choose to accept it, is first to find 175-220m hectares of additional cropland by 2030; second, to increase total food production by about 70% by 2050, mostly through improving crop yields; and third, to achieve all this without damaging the land, poisoning ourselves or impairing the health of our finite and already fragile ecosystems.

The Food and Agricultural Organisation (FAO) estimates that meeting this challenge will require investment in developing countries' agriculture of$9.2tn (£5.4tn) over the next 44 years – about $210bn (£123bn) a year – from both private and public sources. Just under half of this amount will need to go into primary agriculture, and the rest into food processing, transportation, storage and other downstream activities. A priority will be finding ways to close the gaps between crop yields in developed and developing countries, which are around 40%, 75%, and 30-200% less in developing countries for wheat, rice and maize, respectively – all while using fewer resources and less harmful substances.

This challenge is hard enough, but we also have to tackle the problem of 1.3bn tonnes of food wasted every year – roughly a third of all food produced for human consumption. Fortunately, this is an area where technology can play a strong role, and where the economic, human and environmental benefits are compelling. An assessment of resource productivity opportunities between now and 2030 suggests that reducing food waste could return $252bn (£148bn) in savings, the third largest of all resource efficiency opportunities identified by a McKinsey study.

Reducing food waste through improved packaging

Although food waste is highest in Europe and North America, it is also a problem in developing regions like sub-Saharan Africa and south and south-east Asia.

According to the FAO, the total value of lost food is $4bn per year in Africa and $4.5bn a year in India, with up to 50% of fruit and vegetables ending up as waste. In developing countries including China and Vietnam, most food is lost through poor handling, storage and spoilage in distribution. It is estimated that 45% of rice in China and 80% in Vietnam never make it to market for these reasons.

One of the most effective ways to reduce food waste is to improve packaging, for example by using Modified Atmosphere Packaging (Map) – a technology that substitutes the atmosphere inside a package with a protective gas mix, typically a combination of oxygen, carbon dioxide and nitrogen – to extend freshness.

This is a well-proven solution that calls for technology transfer rather than invention, which has been the approach of the Sustainable Product Innovation Project in Vietnam. Through the project, Map has been applied to over 1,000 small-scale farmers, resulting in reductions in post-harvest food waste from 30-40% to 15-20%.

Another simple packaging solution being promoted in developing countries is the International Rice Research Institute Super Bag. When properly sealed, the bag cuts oxygen levels from 21% to 5%, reducing live insects to fewer than one insect per kg of grain without using insecticides – often within 10 days of sealing. This extends the germination life of seeds from 6 to 12 months and controls insect grain pests (without using chemicals).

Improved storage and transportation

Besides improved packaging, a second way to reduce food loss and waste is through improved storage and transportation. A new report on creating a sustainable "cold chain" in the developing world estimates that about 25-50% of food wastage could be eliminated with better, more climate friendly refrigeration. For example, Unilever has committed to using hydrocarbon (HC) refrigerants, which saved 40,000 tonnes of CO2 in 2013.

Waste into energy

Finally, even when food waste cannot be eliminated, its impacts can still be reduced, or even converted into benefits. For instance, animal by-products from slaughterhouses that are usually incinerated or disposed of in landfills can be treated by a new technology called the APRE process, which can treat 11 tonnes of dead animals every day, producing 4,000 metres cubed of bio-gas (60% of which is methane) and 44 tonnes of liquid fertiliser. The heat generated can be turned into electricity to be used in production or sold on.

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Germany, UK and Poland top 'dirty 30' list of EU coal-fired power stations

Environmental study highlights health effects from pollution, with Germany coming top, and the UK third in total coal consumption

By Damian Carrington, *theguardian.com*

Poland's Belchatow power station, Europe's largest coal-fired power plant. Photograph: Kacper Pempel/Reuters

The UK and Germany lead a list of the EU's most polluting coal-fired power stations compiled by environmental campaigners, who say coal emissions are undermining efforts to combat climate change. Both countries have nine of the so-called "dirty 30" and the campaigners say coal burning is increasing due to the relatively low price of the fuel compared to gas.

"Germany and the UK are the self-declared climate champions of the EU," says the new report. "However, Germany uses more coal to generate electricity than any other EU country, while the UK comes third in absolute coal consumption for power after Poland." The report argues current EU policy on climate, energy and air pollution in the power sector is not strong enough to achieve the switch from coal to renewable energy and energy efficiency.

Poland's Belchatow plant came top of the list, with annual CO2 emissions of 37m tonnes in 2013. The UK's largest coal plant, Drax, was sixth, with four German plants occupying second to fifth place.

Germany's increase in coal burning has been criticised by supporters of nuclear energy because Germany opted to phase out all nuclear power after the Fukushima disaster. The report shows that the electricity generation lost from the closed nuclear plants (43 TWh from 2010-2013) was more than compensated for by the increase in renewable electricity (47 TWh 2010-2103). The increase in the proportion of electricity generated from coal (3.6 percentage points between 2010 and 2013) was the same as the reduction of electricity from gas burning. Germany also exported a record amount of electricity in 2013 (33 TWh).

EU coal-fired power station emissions. Graphic: Guardian

The total emissions from the EU energy sector fell modestly in 2013 but the campaigners say the rising use of cheap coal puts the EU in danger of not meeting future climate targets. The price of pollution permits in the EU's emission trading scheme remains far below the level which would make it more economic to use gas, which produces about half as much carbon emissions. According the International Energy Agency, the share of coal in EU electricity generation must be below 4% by 2035 but is currently about 25%.

The report also highlights the negative health impacts of coal burning, stating that air pollution in the form of nitrogen dioxide, sulphur dioxide, particulates and mercury is estimated to cause 1,600 deaths a year in the UK.

"Our political leaders are justifiably proud of their record on supporting tackling climate change on the global stage," said Jenny Banks at WWF-UK, one of the groups that produced the report. "But they must make sure they're not saying one thing and doing another. Coal is by far the most polluting source of electricity. Tackling climate change means making sure that emissions from coal power are phased out over the next decade."

"Each of the largest coal power stations in Europe is responsible for hundreds of millions of external health costs," said Julia Huscher, at the Health and Environment Alliance, another group behind the report."The phase-out of coal in Europe will be a win-win, because it will help to achieve clean air for more people, and avoid further health damage from climate change."

The report said rising emissions from coal plants were due to increasing use of existing facilities, rather than new ones opening. It warned policymakers against allowing extensions to the lifetimes of coal plants, most of which were built in the 1960s and 1970s.

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Pollution triples mercury levels in ocean surface waters, study finds

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

The amount of **mercury** near the surface of many of the world's **oceans** has tripled as the result of our polluting activities, a new study has found, with potentially damaging implications for marine life as the result of the accumulation of the **toxic metal**.

A sewage drain floods into the Mediterranean Sea off the coast of Gaza, in Nuseirat. Photograph: Warrick Page/Getty Images

Mercury is accumulating in the surface layers of the seas faster than in the deep ocean, as we pour the element into the atmosphere and seas from a variety of sources, including mines, **coal-fired power plants** and sewage. Mercury is toxic to humans and marine life, and accumulates in our bodies over time as we are exposed to sources of it.

Since the industrial revolution, we have tripled the mercury content of shallow ocean layers, according to the **letter published in the peer-review journal Nature on Thursday**. Mercury can be widely dispersed across the globe when it is deposited in water and the air, the authors said, so even parts of the globe remote from industrial sources can quickly suffer elevated levels of the toxic material.

For several years, scientists have warned that pregnant women and small children should **limit their consumption of certain fish**, including swordfish and king mackerel, because toxic metals including mercury and lead have been accumulating in these species to a degree that made their over-consumption dangerous to human health. Pregnant women are particularly at risk because the metals can accumulate in the growing foetus, and in sufficient quantities can cause serious **developmental disorders**.

The scientists behind Thursday's letter to **Nature**, including researchers from the prestigious **Woods Hole Oceanographic Institution** in the US, stopped short of warning on the dangers to human health from our pouring of mercury into the oceans. However, they said, further research could yield more advice on the potential impacts: "This information may aid our understanding of the processes and the depths at which inorganic mercury species are converted into toxic methyl mercury and subsequently bioaccumulated in marine food webs."

Simon Boxall, lecturer on ocean and Earth science at the University of Southampton, said it was "hard to say" from the research how much damage had already been done to marine life, including edible fish species, and how quickly any such damage would become apparent. "I would not stop eating ocean fish as a result of this," he said. "But it is a good indicator of how much impact we are having on the marine environment. It is an alarm call for the future."

Deep waters in the North Atlantic showed more mercury content than similarly deep waters of the South Atlantic and the Southern and Pacific Oceans, the authors of the report said. Mercury at the surface will disperse to lower layers in time, but this can take decades. However, the process of the damage to marine life becoming apparent can be faster in some areas, such as those closer to the poles, than areas nearer the equator, said Dr Boxall.

The north pole and the Arctic circle, because of the winds and ocean currents, is an area where **many pollutants released elsewhere across the globe accumulate**: top predators such as polar bears have been found to have high levels of toxins in their bodies as a result. These animals are sometimes eaten by indigenous Arctic peoples.

"In the Arctic and Antarctic, you will be starting to see some of this now," he said. "But with deep-sea fishing in the tropics you will not see it yet, but you will see it within a hundred years."

Mercury emissions from coal-fired power plants can be reduced by using chemical filters, but while this is increasingly the norm in the rich world many developing countries have yet to catch up. Another source of the metal is from sewage. Developed countries have means to reduce this impact, but again developing countries are less likely to have in place the treatment systems necessary.

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GM, REI, P&G, Walmart, Facebook make big renewables commitment

By **Victoria Mills**

Last month, 12 major corporations announced a combined goal of buying 8.4 million megawatt hours of renewable energy each year and called for market changes to make these large-scale purchases possible. Their commitment shows that demand for renewables has reached the big time.

We're proud that eight of the 12 are EDF Climate Corps host organizations: Bloomberg, Facebook, General Motors, Hewlett Packard, Proctor & Gamble, REI, Sprint and Walmart. The coalition, brought together by the World Wildlife Fund and World Resources Institute, is demanding enough renewable energy to power 800,000 homes a year. And while it's great to see these big names in the headlines, they're not alone in calling for clean energy: 60 percent of the largest U.S. businesses have set public goals to increase their use of renewables, cut carbon pollution or both.

Companies want renewable energy because it makes good business sense: It's clean, diversifies their energy supply, helps them hedge against fuel price volatility and furthers their greenhouse gas reduction goals. Renewables are the fastest-growing power generation sector, and by 2018, they're expected to make upalmost a quarter of the global power mix. Prices of solar panels have dropped 75 percent since 2008, and in some parts of the country, wind is already cost-competitive with coal and gas.

Yet some market barriers persist in sourcing renewable energy. As Amy Hargroves of Sprint said, "We know that cost-competitive renewable energy exists, but the problem is that it is way too difficult for most companies to buy." Some utilities don't offer renewable energy electricity options, or put limits on how much a firm can buy. And a patchwork of state regulations creates administrative hurdles for companies with facilities across the country.

This shouldn't be so hard. What the companies are asking for is reasonable and attainable. The Corporate Renewable Energy Buyers' Principles call for change in six areas:

• Greater choice in procurement options;

• More access to cost-competitive options;

• Longer- and variable-term contracts;

• Access to new projects that reduce emissions beyond business as usual;

• Streamlined third-party financing; and

• Increased purchasing options with utilities.

The good news is that EDF and other groups are working to bring about the market changes necessary to bring renewables fully into the energy mix. And there are some great success stories to share. For example, Verizon is investing more than $100 million in clean and renewable energy projects. One catalyst for these investments was the emergence of New York's "Green Bank," a state-run $1 billion initiative that will encourage private sector financing for clean energy projects in the region.

Making the market work for renewables is a critical step in the transition to a low-carbon energy system. What will it take to get us across the finish line? In a word: collaboration. Realizing the potential of renewables will require the active engagement and partnership of all the players in the energy system: large energy users, nongovernmental organizations, utilities and policy makers.

This article originally appeared at the EDF+Business blog. Wind turbine image courtesy of Walmart.

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How Much Pollution Does Airbus Emit? Ask the Bees!

SustainableBusiness.com News

Bees are important to everyone because they pollinate much of our food, but Airbus is relying on them to provide a unique service - to help reduce its environmental footprint.

In this ingenious project, bees inform Airbus on how much pollution it causes at Finkenwerder Airport in Hamburg, Germany.

Airbus maintains two beehives at the airport: near the aircraft paint shop and close to the runway. The tens of thousands of bees in these hives produce more than 160 kilograms of honey a year. About 600 jars of honey are tested for the presence of pollutants and they give the rest as gifts to customers, suppliers and staff.

To produce the honey, the bees harvest pollen and nectar from hundreds of thousands of plants across about 4.5 square miles - providing key data on the quality of the soil, air and water, and whether there are metal or chemical deposits on flowers.

After analyzing the honey for the past five years at an independent lab, the results show that pollution levels from Airbus facilities are even lower than in the center of Hamburg.

"We have tested three different parameters this year: wax, pollen and honey, from two different beehive locations," says Eberhard Schädlich, fulltime beekeeper for Airbus. "We are very proud to say that every single result shows pollution levels are well under approved limits."

Airbus is one of the more active aviation companies when it comes to developing airplanes that fly on biofuels or fuel cells.

It's also leading on efficiency. It developed TaxiBot (with partners) to tug airplanes around airports without using engines. Their airplanes - which use 15% less energy - are being snapped up by the industry at the fastest rate in the history of aviation.

The company says airlines could derive 30% of their fuel from plant-based sources - including farm waste - by 2030. Higher fuel costs would push this along faster.

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Get used to toilet-to-tap water, Californians told

By Suzanne Goldenberg, *for theguardian.com*

The golden state's historic drought is forcing once-squeamish Californians to take a new look at "toilet-to-tap" water reuse. Or as they prefer to call it in Fountain Valley, "showers to flowers".

The town in conservative Orange County is home to the largest water recycling plant in the world and an example during this epic drought of the life-altering changes California will have to make to avoid running out of water.

The first would be to get over the idea that water is an infinite resource, or that it pours out of the tap straight from a pristine, underground spring.

This is the third year of drought in the west. By July end, **more than half of California fell into the worst category of "exceptional drought"**.

The state has made it illegal to hose down a sidewalk or operate a fountain, punishable by a $500 (£297) fine.

But those measures are largely symbolic, and the state is going to have to do much more to guarantee California a long-term supply of water.

An operator inspects the reverse osmosis facility, part of the groundwater replenishing system in Orange County water district, in Fountain Valley, California. Photograph: Ann Johansson/Corbis

"Our sources of supply are literally drying up," said Michael Markus, general manager of the Orange County water district, on a tour of the water plant.

The state's main sources of water, snow melt from the Sierra Nevada, imported water from the Colorado river, and groundwater, are all in decline.

So why not reuse water? Orange County has been doing it for six years, using highly purified wastewater to replenish groundwater reserves.

"We consider wastewater not a waste but a resource," Markus said.

"If we didn't have this water we wouldn't be able to pump as much out of the basin," he went on. "The basin would go into a state of overdraft."

The water re-use plant currently produces 70m gallons a day, turning residential wastewater – from dishwashers, showers, washing machines and toilets – into potable water.

In February 2015, that will rise to 100m gallons a day, as a $140m expansion comes on-line. That will be enough to supply 850,000 people, or about one-third of the 2.4 million residents of Orange County.

Markus said the cost was significantly lower than importing water from northern California, and about half the cost of desalinating sea water – and the supply was guaranteed.

The water goes through three stages of purification – filtration through a series of tiny straws to remove bacteria, reverse osmosis to remove dissolved chemicals, and exposure to UV light with hydrogen peroxide. By the time it leaves the plant, it is distilled water.

About half of the water is pumped into injection wells to serve as a barrier against sea water intrusion. The rest is pumped 13 miles to underground basins in Anaheim, where it filters through layers of sand and gravel, gradually becoming part of Orange County's water supply.

But it could still take some time before Californians get over their aversion to the idea of water reuse, or the notion that they can't afford to go on dumping wastewater.

The state currently dumps some 1.3bn gallons of water a day into the ocean off the coast of southern California.

One of the first attempts to move to water recycling, in San Diego in the 1990s, collapsed because of what water managers call the yuck factor.

Those attitudes are changing, because of the threats to existing supply. California's department of water resources reported last April that groundwater reserves had dropped 50 feet below historical lows across much of the state.

<Source>

The great salty mess: pollution threatens US freshwater resources

By Ucilia Wang, *for theguardian.com*

Two-thirds of the world's population is predicted to face water shortages by 2025, and nonprofits are welcoming the surge of businesses that want to help protect water quality at its source. Photograph: Joe Klamar/Getty Images

According the US Geological Survey, we have a salt problem. A recent report from the scientific agency warns of a buildup of salinity by both man-made and natural causes in our lakes, streams and rivers. Fertilizer and stormwater runoffs and urban wastewater discharge are among the main sources for the increasing presence of ions such as sodium, sulfate, chloride and magnesium in the water. Drought has further increased the salt concentration. That spells trouble for the spectrum of industries that depend on clean water.

"Cities and companies are altering watersheds," said Giulio Boccaletti, managing director of Nature Conservancy's global freshwater program. "Businesses are increasingly aware that the problem of managing water is not just managing the efficiency of water use within their plants but also managing the watersheds."

The USGS **report** is the first comprehensive look at the growing levels of salts in surface water across the country. About 71% of the salinity can be attributed to natural source. But the remaining 29% are man-made, and about 49% of those come from compounds commonly used to remove snow and ice from roadways. Wastewater discharges from urban communities that contain a jumble of chemical products we use, from toothpaste to detergent, also contain salts that end up in the rivers. A third of the human contributions come from farms and pasture land.

Communities are having to adapt. The city of El Paso, Texas, has increasingly relied on water pumped from wells because **water from the Rio Grande** is getting too salty as a result of agricultural runoff and urbanization. But the groundwater is salty, too, and **requires expensive desalination plants** to make the water drinkable.

"As their infrastructure ages or the population grows, it's often challenging in many communities to address" the salinity problem, said David Anning, a co-author of the USGS report. Desalination technology works well, he added, but is expensive and requires a lot of energy to operate.

The costs of desalination are passed on to companies in various ways. Even companies that don't need to invest in their own water purification systems can see a jump in water bills if their local agencies need to spend more money monitoring, treating, and restoring salt-stricken watersheds.

A business prerogative

Large beverage makers such as Coca-Cola and PepsiCo, who depend on clean water for operations, have become more active in recent years to invest in watershed protection, often through partnerships with governments and nonprofits.

Last month, PepsiCo **announced a plan** to work with the Nature Conservancy to restore and protect habitats of five rivers in the country that supply water to over 35 million people in nine states. The nationwide effort will place more recycling bins for beverage containers at gas stations and convenient stores to encourage recycling. PepsiCo promises to donate up to $1m each year for five years to the Nature Conservancy for an increase in the beverage container recycling rate, which stands at 42%.

Coca-Cola is working with the US Department of Agriculture to restore creeks in different watersheds in the country in a **five-year project** announced last fall. Some of the creeks that undergo repairs supply water to Coca-Cola's bottling plants.

Agribusiness has long struggled with growing salinity. Salt buildup in irrigation water costs $2.8bn in lost revenues in agriculture annually, most of which occurs in western states. Farmers typically get irrigation water directly from the source instead of from a water treatment plant. Some crops have low tolerance for salt, which stunts those plants' growth and shrinks harvests.

Veronica Nigh, an economist with the American Farm Bureau, the largest general farming industry nonprofit in the US, said farmers and ranchers are increasingly employing a wide range of methods to reduce runoff and sediment buildup. Creating terraces, installing drip irrigation and building vegetation around fields can help prevent soil erosion and increased salinity.

<Source>

Mobile Solar Charging Finds a Sweet Spot

SustainableBusiness.com News

Mobile Solar Gets a Big Lift

Utility NRG Energy announced it's acquiring Goal Zero to bring mobile solar energy into the mainstream.

With smartphone batteries constantly needing a charge, people often select seats at restaurants or airports based on where the outlet is. NRG sees an opening to "free people" through solar charging.

Goal Zero lucked out. Founded in 2009, it sells solar charging devices for the outdoor market - hikers or mountain bikers, for example. Revenues have grown from $250,000 to $40 million - with 120 employees - and with NRG, they will make a bigger leap than they imagined possible.

While most utilities are currently at war with renewable energy, NRG leads on solar and wind, and recently spun off NRG Yield.

Street Charge in NYC

Last year, AT&T began installing solar-powered charging stations in New York City boroughs at parks, beaches and other outdoor spaces. 12 feet tall, they look like flattened windmills, designed by NYC-based Pensa and running on Goal Zero's solar technology.

Each of three blades is topped with 15-watt solar panels and inside is a 168-watt per hour lithium battery pack. They can operate for five days without sunshine.

Six devices - from any carrier - can be charged simultaneously. People can get their smartphone 30% charged in a half-hour or completely charged in two hours.

People know how much charge they need for say, the commute home, says Chris Abbruzzese of Goal Zero, based on their market research.

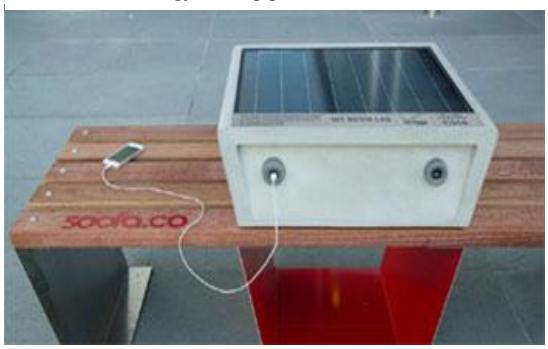
"People are making less phone calls than they've made before and more importantly the newer generation are really not making many phone calls. To make money out of data services the telecom companies need to convince you to connect as many devices as possible. The more you connect, the more data you use, the more money they make," Eddie Hold, vice president with market research firm Connected Intelligence, told the *NY Times.*

Park Benches in Boston

In Boston, some park benches are doubling as solar cell-phone and tablet chargers.

"Your cell phone doesn't just make phone calls, why should our benches just be seats?," asks Mayor Walsh of Boston during an interview with *The Washington Post*.

That's where a pilot is underway, where "Soofa" benches charge devices and connect wirelessly to the Internet, streaming information on local air quality, foot traffic, and how much energy is being generated.



Made from concrete, sheet metal, and wood, the chargers are designed to prevent hacking, a potential problem with public access USB ports. The boxes are closed with security screws and if an axe was used the electronics would be useless.

The innovation comes from a start-up called Changing Environments, spun-off from MIT's Media Lab and debuted in June at the White House Maker Faire in Washington, DC., where entrepreneurs are invited to show off their inventions.

"We were thinking about how can we change public opinion to accept more solar ... and start a dialogue about air quality in cities and renewable energy," explains Sandra Richer to *BloombergBusinessweek*. She is one of the three co-founders - all from Germany.

Verizon is backing them with technical support and Cisco Systems paid for Boston's first benches. Other cities are already calling for benches.

<Source>

Sustainable semantics: 'Global warming' vs. 'climate change'

By Meghan McDonald

In sustainability communications, even synonyms can inspire vastly different reactions. Take "nature" and "environment," for instance. We've learned that "nature," when coupled with "conservation" or "stewardship," can better engage a more conservative audience for whom "environment" is a rather abstract concept associated with liberal politics.

I've been encouraged by the gradual switch in another set of (quasi-)synonyms. Although more Americans still use "global warming," "climate change" is coming into favor in many mainstream media outlets. The former is a phrase long associated with fear-based environmental messaging, which I grew up with in the 1990s, while the latter is a more scientifically accurate term for a wider range of phenomena. But according to a recent report by teams from Yale and George Mason University, there's a lot more nuance to these two terms — and using the less fearsome and politically charged of the two could come at the expense of emotional resonance in sustainability communications.

What's in a name?

The report found that "global warming" and "climate change" "activate different sets of beliefs, feelings and behaviors, as well as different degrees of urgency about the need to respond." It states, "Global warming" generates more intense worry and more negative reactions than "climate change." Political moderates, in particular, are more likely to free-associate the former phrase with alarming, extreme disasters and the latter with weather.

"Global warming" also poses a greater sense of threat to one's self and one's family, especially for women, Hispanics, African-Americans, Democrats, Independents and Republicans. Actually, the report notes that "*climate change* appears to actually *reduce* issue engagement" among many groups, including liberals and moderates, Hispanics and Gen X.

As we've seen repeatedly via our Pulse and other research, unless you're talking to the greenest of American consumers, sustainability and energy efficiency messaging centered on global warming or climate change will fall most often on deaf ears (as do doomsday scenarios generally) for a couple of reasons.

When the threat seems too big or too personally distant, many Americans don't connect their everyday behaviors to the problem — and it doesn't influence those everyday behaviors, particularly when it comes to home energy use. Even if consumers believe the science, they may doubt that their small contributions actually will make a difference — or they have too many other fish to fry as they hustle through their daily lives.

Do we need a fear factor?

"Global warming" messaging, specifically, adds other barriers. For many years, it was used in ways that conjured up fear, which can paralyze when it comes time to make behavioral decisions, or lead to disillusionment or anger. Fear is simply not a good driver of positive and lasting behavior change (not to mention happiness).

We've also confirmed in our Pulse studies that the phrase "global warming" is incredibly divisive. Using it alienates Cautious Conservatives, the Shelton consumer energy segment that's one of the best targets for energy-efficient home improvements — and that makes up about 20 percent of the U.S. population. So, although we're not using global warming/climate change as a proof point for participating in energy efficiency programs or buying Energy Star certified homes, we've encouraged the media's shift from "global warming" to "climate change" because of what we know about human psychology.

Like the climate, words require a delicate balance. Is fear the mind-killer, or does complacency make people hide their heads in the sand? (Credit: alphaspirit via Shutterstock)

But here's the catch, and it's the bigger reason we should all take interest in the Yale/George Mason report. If middle-of-the-road Americans, greener demographic segments such as Hispanics, and frequent green purchasers aren't as likely to believe "climate change" personally can affect them and their families, then as "climate change" becomes more popular, could some of the cultural impetus for conserving energy dissolve? Could those consumers start to care a little less about supporting brands that use renewable energy sources or more efficient transport strategies?

Choose words that spur positive action

This semantic change may present an opportunity to take up the slack as "climate change" becomes more culturally popular by reconnecting consumers who are less concerned about climate change with things they are concerned about, such as their family's health, their legacy for future generations, the quality of the products they're buying and their energy costs.

It's also a reminder that sustainability and energy efficiency need to be made personal.

If you are an environmental or scientific organization for whom global warming is a major reason to believe, you can still accept the move away from using "global warming" by personalizing the effects of climate change — and you can do it, perhaps, with a positive spin that gives consumers hope, not fear.

Top image of "My name is" badge by Yale Project on Climate Change Communication.

<Source>

IPCC climate change report's findings must be accepted, MPs say

Energy and climate change committee says UN climate science panel processes have improved since last major report

By Fiona Harvey, *theguardian.com*

The world's most comprehensive report yet on the science of climate change has been strongly endorsed by an influential group of MPs.

The Energy and Climate Change Committee found that the Intergovernmental Panel on Climate Change's processes were "robust" and their conclusions should be accepted by policymakers.

Smoke billowing out from a plant in Japan, where the second part of the IPCC report was launched

The IPCC, a grouping of hundreds of scientists convened by the UN, published its mammoth report in three parts from last September to this spring, its first such update in seven years.

It concluded that climate change is almost certainly manmade, that a large proportion of fossil fuel reserves will have to stay in the ground to avoid dangerous warming of 5C or more, and that global warming is being felt"on all continents and across the oceans". It also concluded that the transition to clean energy to avoid the worst impacts of climate changewas eminently affordable.

But climate sceptics including Lord Lawson of the Global Warming Policy Foundation have said the IPCC's processes and the conclusions were flawed, and sceptics have seized on mistakes in the organisation's 2007 report.

Tim Yeo, the former Conservative minister who chairs the committee, said: "The importance of the conclusions of IPCC reports in terms of their policy implications understandably places the IPCC under a lot of scrutiny. Some of the criticism directed toward the IPCC has been from people who for various political or economic reasons do not like its conclusions, but we decided to take a closer look at whether the scientists involved in the IPCC could be doing more to address genuine concerns."

The committee's MPs examined the IPCC processes and gave them a clean bill of health. This will reinforce the argument that the IPCC's findings must play a major role in the future of the UK's and Europe's climate and energy policies.

That could prove crucial in the coming years, as there is a growing movement - particularly among sections of the Tory party and UKIP - to turn climate change and environmental issues into a politically divisive issue. Owen Paterson, the sacked environment secretary, was reported by the Daily Mail to have boasted to David Cameron that he had "reversed a 25-year consensus" on the environment among the UK's three main parties.

There are fears that this tendency could grow in the run-up to the election or after it, depending on the outcome. The next year is a crucial one in climate change negotiations, because governments around the world have committed to forging a global agreement in Paris late next year that would commit countries to steep cuts in emissions. In previous rounds of the UN talks, the UK has played a key role in paving the way for such a historic agreement.

An early commitment by the government to abide by the IPCC's advice, and to set out strong targets, will be essential, according to Yeo, one of the few remaining longstanding "green Tories", who was de-selected by his constituency party early this year.

He said: "Policymakers in the UK and around the world must now act on the IPCC's warning and work to agree a binding global climate deal in 2015 to ensure temperature rises do not exceed a point that could dangerously destabilise the climate."

The committee decided that the IPCC had addressed key criticisms and tightened its review processes for the fifth assessment report, known as AR5. But they also suggested the panel recruit a small team of non-climate scientsts to observe the review processes and the meeting at which the summary of the report for policymakers is agreed.

Yeo said: "What is starkly clear from the evidence we heard however is that there is no reason to doubt the credibility of the science or the integrity of the scientists involved. Policymakers in the UK and around the world must now act on the IPCC's warning and work to agree a binding global climate deal in 2015 to ensure temperature rises do not exceed a point that could dangerously destabilise the climate."

The committee includes his fellow former Tory minister Peter Lilley, a climate sceptic who voted against the UK's Climate Change Act.

In a nod to the Climate Change Act, Yeo said there was no scientific basis for reducing the UK's carbon budgets, which some in industry have urged the government to do.

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One More Time: US & World CAN Swiftly Convert to 100% Renewable Energy

SustainableBusiness.com News

By Rona Fried

Yet more research shows how the US can achieve 100% renewable energy by 2050, this time from Stanford University.

The Solutions Project has developed models for every state and the US as a whole.

Take California

For California, 55.5% of all energy would come from solar, 35% from wind and the rest from hydroelectric, geothermal, tidal and wave energy.

For 100% electricity, here what would be needed:

- 25,000 onshore 5-megawatt (MW) wind turbines
- 1200, 100 MW concentrating solar plants
- 15 million, 5-kilowatt residential solar PV rooftop systems
- 72, 100 MW geothermal plants
- 5000, 0.75 MW wave devices
- 3400 1 MW tidal turbines

For heating, fossil fuels would be replaced by electric/geothermal powered heat pumps and heat exchangers; solar-powered hot water; and high temperature industrial processes would run on electricity and hydrogen combustion. Vehicles would be either electric or fuel cell propelled.

This infrastructure would consume 0.9% of California's land, mostly for solar plants.

Published in the *Energy,* it shows that converting California's energy infrastructure is both technically and economically feasible and that it would result in a sustainable, inexpensive and reliable energy supply ... while creating hundreds of thousands of jobs and saving billions of dollars in pollution-related health costs.

It would "eliminate air pollution mortality and global warming emissions from California, stabilize prices and create jobs - there is little downside," says lead author Mark Jacobson, professor of civil and environmental engineering, and Director of Stanford's Atmosphere/Energy Program.

While there's an initial cost for upfront infrastructure investments (which are rapidly dropping), they are more than repaid by eliminating fuel costs. Energy demand would decline by about 44% and energy prices would stabilize.

After job losses in fossil fuel and nuclear-related industries are accounted for, there would still be a net gain of 220,000 jobs in California.

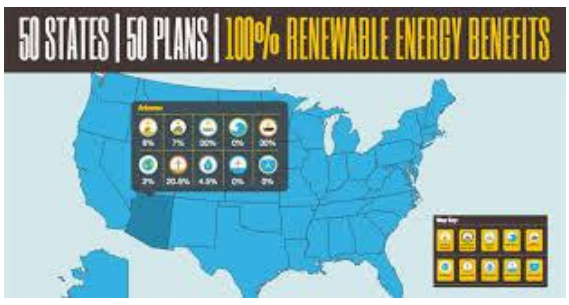
And it would save over $100 billion a year on health care costs - almost 5% of California's 2012 gross domestic product - while cutting $48 billion a year in damage from extreme weather.

Mark Jacobson is a prolific researcher. Over the past five years, his studies show:

- cutting black carbon emissions is the key to saving the Arctic ice cap
- offshore wind can power the entire East Coast and protect cities from hurricanes
- For every 1 degree Celsius of global warming, 1000 more people will die in the US from respiratory illness and asthma - the first study connecting health effects with climate change.

All US States

Each report Jacobson produces drills down to every detail - exactly how many devices are needed; their footprint and spacing area; costs; numbers of jobs, air pollution and climate benefits; and policies necessary for each state.



For the US as a whole, all new energy sources could be renewable by 2020, about 80-85% of existing energy replaced by 2030, and 100% replaced by 2050.

Doing this would create about 5 million construction jobs and 2.4 million operations jobs for energy facilities alone, while eliminating roughly 62,000 premature deaths a year and avoiding $510 billion a year in heath care costs.

He doesn't stop with the US, of course. Renewable energy can also power the world, with wind providing half the energy by 2030, solar providing 40%, and geothermal and marine energy, 10%.

Why does he cross nuclear, biomass, natural gas and coal with carbon capture and storage, off the list?

"If we have a limited amount of money to spend, we want to spend it on the best technologies, not ones that are mediocre," he said at his presentation for the American Association for the Advancement of Science.

Numerous studies show the US and the world can transition completely to renewable energy by 2050: Civil Society Institute; Greenpeace and the European Renewable Energy Council; and the US National Renewable Energy Lab.

<Source>

Toledo's poisoned water: Here's what will make things worse

By **Samantha Williams**

Thankfully, the taps are back on in Toledo.

It's a stunning situation: a major American city perched on the shores of one of the world's biggest sources of fresh water deprived of clean drinking water due to pollution, failing infrastructure and climate change. All preventable issues.

After a three-day "no drink" ban on water from Lake Erie, folks in northwestern Ohio and nearby communities in Michigan can drink the water again. But it shines a bright national spotlight on the growing issue of Lake Erie's water quality that has been vexing to Ohioans and Michiganders for some time. And folks in the Buckeye State have to recognize that Ohio unfortunately has moved down a road that could make the issue more frequent.

The sources of the algae bloom are multifaceted. They include an array of water pollution sources (see the suite of blogs posted by NRDC's Midwest Program staff, including Karen Hobbs and Rob Moore). And it is clear that worsening climate change impacts will continue to exacerbate the issue: more violent storms flush ever-more fertilizer-laden runoff into the lake, while its shallow waters are warmed, making it more susceptible to the algae blooms at the heart of Toledo's water woes.

If we allow climate change to advance, we will see more and more of this type of situation. This isn't my assertion — it follows research from the Ohio State University. In a prescient report released just last month, OSU predicted that the projected increase in precipitation and the associated runoff that are occurring more frequently because of climate change likely would lead to a larger-than-average bloom of harmful blue-green algae in Lake Erie this summer. Unfortunately, nobody forsaw that these impacts would be quite so damaging to Toledo's half-a-million residents.

The issue in Lake Erie isn't surprising or new; after all, the algae blooms could be seen from space covering half the lake a couple years ago.

Just last summer, The New York Times declared that "Lake Erie is sick," noting that climate change — in addition to agricultural runoff — is a major contributor of the toxic blooms that become more widespread and start occurring earlier every year. Longer storm seasons and more severe storms are contributing to an excessive amount of phosphorus in the lake, systems that the National Center for Water Quality Research notes have increased by 13 percent since 1940.

Algae bloom on Lake Erie seen from space (Credit: NOAA Great Lakes Environmental Research Laboratory)

But what is surprising is how aggressively the state of Ohio has run headlong in the opposite direction from policies that would help make sure the experience in Toledo this weekend remain isolated, rather than the norm.

Toledo's troubles come the same week that Ohio joined a suit pushing against the EPA's historic Clean Power Plan, designed to slash carbon emissions from our nation's power fleet. And it would seem that the state is working overtime to undercut any tools that would help to mitigate the problem, having just passed a law that freezes Ohio's energy efficiency and renewable energy policies for the next two years.

Two months into the release of the draft Clean Power Plan, it is well-known that these clean energy policies are an important part of the calculus as the state devises its plan to cut carbon and start to tackle the root cause of climate change. The unfortunate events in Toledo over the last few days underscore what was already clear — that Ohio's recent policy decisions are woefully shortsighted.

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The strange relationship between global warming denial and... speaking English

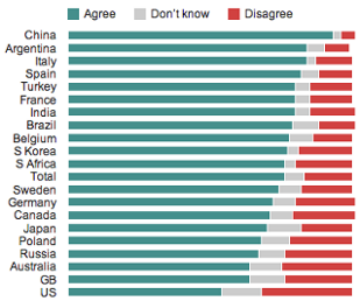
Polling from IPSO Mori shows US clearly the worst in its climate denial, followed by UK and Australia, reports Climate Desk

By Chris Mooney, *for theguardian.com*

The English language media in three of these four countries are linked together by a single individual: Rupert Murdoch. Photograph: Pool/Getty Images

Here in the United States, we fret a lot about global warming denial. Not only is it a dangerous delusion, it's an incredibly prevalent one. Depending on your survey instrument of choice, we regularly learn that substantial minorities of Americans deny, or are sceptical of, the science of climate change.

The global picture, however, is quite different. For instance, recently the UK-based market research firm Ipsos MORI released its "Global Trends 2014" report, which included a number of survey questions on the environment asked across 20 countries. (h/t Leo Hickman). And when it came to climate change, the result was very telling:



Ipsos MORI Global Trends, 2014 Photograph: /Ipsos MORI

Note that these results are not perfectly comparable across countries, because the data were gathered online, and Ipsos MORI cautions that for developing countries like India and China, "the results should be viewed as representative of a more affluent and 'connected' population."

Nonetheless, some pretty significant patterns are apparent. Perhaps most notably: Not only is the United States clearly the worst in its climate denial, but Great Britain and Australia are second and third worst, respectively. Canada, meanwhile, is the seventh worst.

What do these four nations have in common? They all speak the language of Shakespeare.

Why would that be? After all, presumably there is nothing about English, in and of itself, that predisposes you to climate change denial. Words and phrases like "doubt," "natural causes," "climate models," and other skeptic*mots* are readily available in other languages. So what's the real cause?

One possible answer is that it's all about the political ideologies prevalent in these four countries.

The US climate change counter movement is comprised of 91 separate organizations, with annual funding, collectively, of "just over $900 million." And they all speak English.

"I do not find these results surprising," says Riley Dunlap, a sociologist at Oklahoma State University who has extensively studied the climate denial movement. "It's the countries where neo-liberalism is most hegemonic and with strong neo-liberal regimes (both in power and lurking on the sidelines to retake power) that have bred the most active denial campaigns—US, UK, Australia and now Canada. And the messages employed by these campaigns filter via the media and political elites to the public, especially the ideologically receptive portions." (Neoliberalism is an economic philosophy centered on the importance of free markets and broadly opposed to big government interventions.)

Indeed, the English language media in three of these four countries are linked together by a single individual: Rupert Murdoch. An apparent climate sceptic or lukewarmer, Murdoch is the chairman of News Corpand 21st Century Fox. (You can watch him express his climate views here.) Some of the media outlets subsumed by the two conglomerates that he heads are responsible for quite a lot of English language climate scepticism and denial.

In the US, Fox News and the Wall Street Journal lead the way; research shows that Fox watching increases distrust of climate scientists. (You can also catch Fox News in Canada.) In Australia, a recent study found that slightly under a third of climate-related articles in 10 top Australian newspapers "did not accept" the scientific consensus on climate change, and that News Corp papers — the Australian, the Herald Sun, and the Daily Telegraph — were particular hotbeds of scepticism. "TheAustralian represents climate science as matter of opinion or debate rather than as a field for inquiry and investigation like all scientific fields," noted the study.

And then there's the UK. A 2010 academic study found that while News Corp outlets in this country from 1997 to 2007 did not produce as much strident climate scepticism as did their counterparts in the US and Australia, "the Sun newspaper offered a place for scornful sceptics on its opinion pages as did The Times and Sunday Times to a lesser extent." (There are also other outlets in the UK, such as the Daily Mail, that feature plenty of scepticism but aren't owned by News Corp.)

Thus, while there may not be anything inherent to the English language that impels climate denial, the fact that English language media are such a major source of that denial may in effect create a language barrier.

And media aren't the only reason that denialist arguments are more readily available in the English language. There's also the Anglophone nations' concentration of climate "sceptic" think tanks, which provide the arguments and rationalisations necessary to feed this anti-science position.

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New energy-rich sorghum offers ethanol without the corn

By Marc Gunther, *for theguardian.com*

As scientists around the world research biomass feedstocks — trees, shrubs and grasses that are designed to produce energy — a California startup called **NexSteppe** is betting that fast-growing, drought-resistant sorghum will emerge as a crop to sustainably fuel cars, trucks and power plants.

Sorghum, **a millenia-old cereal grain**, today feeds animals and people. It is turned into flour, syrups and beer, and used in gluten-free products. In Asia, sorghum is made into couscous, and across Africa, it's consumed as a porridge.

Last year, though, NexSteppe introduced two new brands of sorghum seeds, dubbed Palo Alto and Malibu, that were bred expressly to be energy crops. They grow on marginal land and in a variety of climates, and they climb to a height of 20 feet after only four months of growth.

"Sorghum is naturally very heat and drought tolerant," says Anna Rath, NexSteppe's founder, president and CEO. "It originated in Africa. It's a camel of a crop, if you will."

Although NexSteppe has done almost no marketing outside of Brazil, its biggest market, the company's sorghum is now being grown by farmers in 15 countries, including China, India, South Africa, Germany, Canada and the US.

"We identified a market need that wasn't being met," Rath told me, when we met at NexSteppe's office in South San Francisco, across the bay from San Francisco International Airport. "Until now, crops have always been developed for animal feed and food—with the exception of cotton and tobacco. But there's a growing need for energy that wasn't being addressed."

Rath, who is 38, is a former McKinsey consultant with degrees in biology and genetics, as well a doctorate from Yale Law School. She started NexSteppe with about $1m from friends and family in 2010. Since then, the company has raised about $40m from venture capitalists and from DuPont, which has major investments in biofuels, including **a cellulosic ethanol plant under construction in Iowa**.

NexSteppe isn't the only company developing dedicated energy crops.**Ceres**, a small public company where Rath previously worked, breeds sorghum, switchgrass and miscanthus, but its products have been slow to reach the market. Meantime, the US government and **university scientists backed by a 10-year, $500m grant from BP** are extensively researching energy crops and biofuels production.

Why do we need dedicated energy crops? First of all, **environmentalists say**, reducing carbon pollution from the transportation sector will require widespread uptake of biofuels; vast, existing fleets of cars, trucks, buses and planes will need liquid fuels (but not gasoline or diesel oil) for decades to come. Second, most of the world's biofuels today come from two feedstocks: corn in the US and sugarcane in Brazil. Neither is an ideal energy crop, experts say.

"We don't view using food crops for fuel as a generally good idea," says **Heather Youngs**, a senior fellow at the **Energy Biosciences Institute**(EBI), a BP-funded research project at UC Berkeley. EBI is doing basic research on an array of crops with appealing sustainability profiles, including perennial grasses like miscanthus. Since 2006, the US energy and agriculture departments have also funded **basic research into the genomics of plant feedstocks** for bioenergy.

Brian Siu, a senior policy analyst at the Natural Resources Defense Council, says biofuels ideally should be made out of organic waste or crops that don't require much water or chemical use. "We have a lot of concerns with corn ethanol," he says. "Corn is currently produced with a chemical-intensive process. It uses lots of fertilizers. It uses lots of pesticides." Biofuels made from corn also cost more than fossil fuels, so they require government mandates or subsidies, which are controversial.

While sorghum is also grown for food, Rath says, it "needs a lot fewer carbon inputs than corn or sugarcane". It also produces more biomass per acre per year than corn or sugarcane. NexSteppe has commissioned an independent analysis of sorghum's sustainability profile, but it's not yet available.

<Source>

Nettles, tofu and snail poo: sustainable textiles made from the unexpected

The global textile industry is among the most polluting and wasteful in the world, but there are some weird and wonderful material innovations out there

By Hannah Gould, *Guardian Professional*

Snail poo

Sample of snail's excrement. Photograph: Lieske Schreuder

During a snail plague in her garden that involved old paper boxes, Dutch designer Lieske Schreuder discovered that if snails eat coloured paper it dyes their poo.

From here, Schreuder bought hundreds of snails, built a laboratory and collected their bright-hued poo, using a machine she built to grind and mix it and turn it into flexible threads. It takes around five days for nine snails to produce the amount of poo necessary for one metre of thread.

The use of snail poo in fashion is probably limited to haute couture and limited further by the fact the material is temporary and will eventually biodegrade.

Schreuder assures anyone concerned that paper is of a similar cell structure cellulose to plants and trees and that no snails are harmed in the making of snail poo thread.

Soy fabric is made from by-product of tofu. Photograph: Mediablitzimages (UK) Limited/Alamy

Tofu waste

Soy fabric is made from the by-product of soy foods such as tofu and soybean oil. The soy protein is liquefied and extruded into long, continuous fibres that are cut and processed like cotton. While soy fabric production helps reduce waste, only 2-3% of the world's soy supply is certified (pdf) and the crop has links with poor labour conditions and deforestation in the Amazon.

Wolffish skin

Icelandic tannery, Atlantic Leather is taking perch, salmon, wolffish and cod skin, a by-product of the fisheries industry and turning it into leather for luxury fashion.

Biorubber

Outdoor clothing company Patagonia partnered with clean technology company Yulux to create a wetsuit less dependent on the synthetic, petroleum-derived material, neoprene. The resulting co-developed wetsuit which will be part of Patagonia's Autumn/Winter 2014 collection, is 40% neoprene and 60% plant-based biorubber derived from the desert plant, guayule.

Patagonia is making the biorubber available to the rest of the surf industry in order to encourage volume up and force price down.

Abandoned sleeping bags

In 2011 the Association of Independent Festivals found that one in six tents were left behind at festivals. Some 12,000 tents were abandoned at the Isle of Wight festival in that year alone. Taking tents, tarpaulins and sleeping bags left behind at the the 2013 Secret Garden Party festival, design students at Nottingham Trent University turned festival waste into fashion.

View of tents on the campsites at Glastonbury festival 2008. Photograph: David Levene

Recreated cotton

The 2014 State of Sustainability Initiatives Review which charted the development of identity cotton initiatives, has estimated that by 2020 organic and standard compliant cotton could account for a quarter of global production.

Going even further, Swedish companies recently presented the world's first garment made entirely from recycled cotton after Scientists at Stockholm's Royal Institute of Technology developed a way of recreating the fibre.

Nettles

The use of nettles for fabric dates back to the Bronze Age in Denmark, where nettle fibres have been found in burial sites. In a four-year project funded by the UK government department Defra (Department for Environment, Food and Rural Affairs), Camira Fabrics and De Montfort University sought to make the common stinging nettle fashionable once again.

A perennial crop often considered a pest, nettles grow on land often unsuitable for other crops without the need for pesticides, herbicides or much water.

Photograph: Linda Nylind for the Guardian

The fibres in nettles are strong and elastic with in-built fire retardant properties and the linen-like material it can be spun into is naturally anti-bacterial and mould-resistant. Back in 2006, Dutch fashion label, Brennels started growing its own nettles in eastern Europe.

Coffee

Coffee is one of the world's most widely traded tropical agricultural commodity. Since the early 1980s coffee consumption has increased by around 1.2% every year, rising to 2% more recently. In Japan, the world's third largest importer of coffee, the taste for coffee has been even stronger at around an annual increase of 3.5%.

From coffee to crop top? Photograph: Puerre Andrieu /AFP/Getty Images

That's lots of cups of coffee, and a lot of coffee waste. Taiwanese fabric manufacturer Singtex is adding coffee ground waste collected from coffee shops to cotton to create an odour eating, UV protective and fast drying fabric. Singtex claims the the textile is perfect for denim and outdoor wear like running and cycling gear.

More like this:

- Fashion meets renewable energy – clothes that charge your smartphone
- Seven fabrics inspired by nature: from the lotus leaf to butterflies and sharks
- **Advertisement feature:** H&M makes jeans from recycled cotton

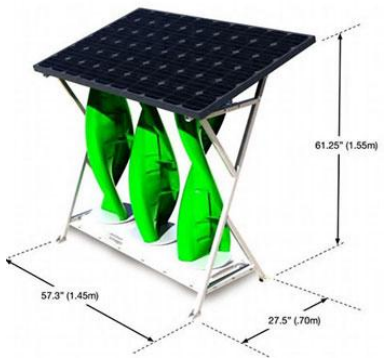
The fashion hub is funded by H&M. All content is editorially independent except for pieces labelled advertisement feature. Find out more here.

<Source>

Law Firm Chooses Hybrid SolarMills for Renewable Energy

SustainableBusiness.com News

A law firm on the Caribbean island of Jamaica has commissioned an innovative renewable energy system that combines solar and wind into one device - hybrid "SolarMills."



Not only will the 50 SolarMills provide renewable energy, they will protect against surges during extreme weather events. Located less than a quarter-mile from Kingston's coast, typical wind gusts reach 60 miles per hour. The devices will produce 25 kilowatts of wind and 55 kilowatts of solar energy, generating 106,000 kilowatt-hours a year for Myers, Fletcher, & Gordon.

The law firm expects to save $2 million in energy costs (quite expensive on Jamaica) over its 25-year lifetime, with a payback period of less than four years.

WindStream Technologies combines vertical axis wind turbines with solar panels and a patented system of integrated electronics. Marrying the two resources captures energy at all times of the day and year. They are manufactured in Indiana.

WindStream competed for and was awarded the project for its ability to maximize energy production and ROI within the confines of limited roof space.

<Source>

A startup develops a technology that may make solar cells cheaper than natural gas

Source: energyandcapital.com

A startup company based in Durham, North Carolina says they have developed a technology that will make solar cells cheaper than natural gas.

The company is called Semprius, and they say that their revolutionary solar panels will – if mass produced – allow for solar energy prices lower than 5 cents per Kwh.

For reference, the EIA projects that new natural gas plants can produce electricity for around 6 cents per Kwh.

Their technology involves stacking compatible semiconductors that can absorb different frequencies of light. By doing so, they say that the efficiency of the panels could go well over 50%.

Traditional solar cells only have an energy conversion rate of 25%, so by doubling the output of the technology it seems that Semprius believes they could eventually solve solar's biggest problem…cost.

So far their prototypes have clocked an efficiency rating of 43.9% for the first one and 44.9% for the second one.

Not only do they do this by using different types of semiconductors, but they also make their solar panels out of a series of incredibly small solar cells.

These cells are only about 1 millimeter long, and allow for faster cooling and more light absorption which is how they project that once mass produced their technology could be cheaper than natural gas.

I'll believe it when I see it…

I don't mean to be a naysayer, but a lot of solar companies have made a lot of promises over the years, and if half of them came true it feels like we would never need to drill an oil well again.

Add to that that any startup company has to make a big promise like this or they won't get noticed by deep-pocketed angel investment firms who could help fund research and mass production.

But if their promises are true we would also be remiss if we hadn't kept our eye on them.

Of course, they are still a start up so we can't buy any shares yet, but they could become a great investment in the future if they ever go public.

Read the full article *here*

<Source>

Sequestering Carbon, Helping Pollinators Along Our Highways

SustainableBusiness.com News

By Rona Fried

As I drive between New York and Maine each summer, I look along the sides of highways, thankful for the wildflowers and native plants I see, and nauseated by the increasing presence of oriental bittersweet - which is creating walls of vines where there used to be trees. Mostly, however, there's mowed grass.

It turns out I'm not alone in these thoughts. With pollinators in trouble, nonprofits are working with transportation departments to plant wildflowers in the medians and along the sides.

And scientists also have ideas for how to use the 5 million acres of road-side land in the US - for storing carbon.

Even without any effort, these strips of land are sequestering the amount of carbon released by 2.6 million cars each year, according the Federal Highway Administration's Carbon Sequestration Pilot Program, which began in 2008.

While trees - which do the best job at carbon absorption - can't be planted next to roads, there are plenty of soil management steps than can be taken, along with planting native, small shrubs, says Rob Ament, a biologist at Western Transportation Institute at Montana State University, that's studying it. Another benefit would be reduced need for mowing, which cuts emissions and labor costs.

Under a five-year, $1 million grant from the federal Highway Authority, New Mexico is doing research along its 7,500 miles of state roads, reports *Daily Climate*. They've been able to boost carbon capture rates 35%-350% over passively managed areas. Native grasses produced the biggest gains.

And there's potential revenue - New Mexico could earn about $1 million in carbon credits a year, and much more if the US implemented cap-and-trade.

<Source>

UK Economy Grows Greener, But World Heading for 3-4°C of Warming

- UK is the most improved nation in PwC's annual index of carbon efficient growth in G20
- But globally, current rates of carbon emissions will burn this century's IPCC carbon budget within 20 years
- Globally, annual reductions need to be five times current levels

The UK is one of the most carbon-efficient economies in the world, according to new analysis by **PwC**, coming second in an Index of G20 nations.

The data, compiled by PwC in the sixth annual **Low Carbon Economy Index**, **"2 Degrees of Separation – Ambition & Reality"**, analyses how countries grow their economy, while reducing their greenhouse gas emissions (GHGs) linked to energy.

The UK, third from the bottom in the 2012 list, is now second in the league of G20 nations on their change in rate of carbon intensity – the amount of carbon dioxide emitted for every $GDP the country produces.

The UK achieved a 4.8% reduction in carbon intensity, four times the average level achieved globally. This is better than reductions achieved during the dash for gas in the nineties but is still 1.2% short of what is needed.

It means that for every $1 million of GDP, the UK emits 206 tonnes of CO2, making UK factories, homes and offices more carbon efficient this year than Turkey, Germany, the US, China and India. However, due to their higher levels of nuclear and renewables power, France and Italy are amongst four nations who beat the UK's in the report on this measure.

In the UK, improvements in energy efficiency, a record growth in renewables of almost 34%, (the highest growth of all the G20) and the closure of several coal fired power stations all contributed to its improving performance.

Country	Carbon Intensity (tCO2/2013$m) 2012-13	Change in Carbon Intensity 2012-13	*Change in Carbon Intensity 2011-12*	Annual Average Change in Carbon Intensity 2008-2013
World	323	-1.20%	*-0.80%*	-0.60%
G7	281	-0.20%	*-2.70%*	-1.90%
E7	404	-1.70%	*-0.10%*	-0.30%
Australia	338	-7.20%	*-5.30%*	-4.60%
UK	206	-4.80%	*2.40%*	-2.90%
Italy	172	-4.10%	*-3.50%*	-2.90%
China	561	-4.00%	*-1.40%*	-1.60%
South Africa	635	-3.00%	*-1.50%*	-3.00%

Top five nations in PwC Low Carbon Economy Index, with corresponding carbon intensity rate of reduction/increase last year. © PwC

Leo Johnson, Partner, Sustainability and Climate Change, PwC, commented, "The UK is starting to turn the corner on carbon. Through increased efficiency and investment in renewable, the UK has started to decouple growth from carbon. The challenge now is getting a policy platform in place that accelerates this transition. Our current burn rate is taking us to four degrees. Keeping it to two degrees means decarbonising at more than five times our current rate."

"A business logic has started to emerge. It's about minimising the downside the UK in terms of flooding, energy costs and food security. It's also about attracting investment, boosting jobs and liveability."

Jonathan Grant, Director, Sustainability and Climate Change, PwC, said, "Doing business in a changing climate is becoming very real for UK plc. Some of the high street's biggest names are conducting risk assessments of long-term climate trends and the implications for their supply chains and business operations."

"Not only that, our analysis shows that the top ten destinations for UK foreign direct investment were exposed to almost $ 100 bn of economic losses from weather related events last year. Multi-billion pound UK investments are wrapped up in infrastructure, technology, retail, food and energy sectors, making this an issue on everyone's doorstep."

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'India is fifth largest producer of wind energy'

PTI

DUBAI: India is the fifth largest producer of wind energy with the sector alone constituting 68 per cent of the total renewable energy produced in the country, India's ambassador to the UAE T P Seetharam has said.

Annual growth rate of renewable energy in India in the last decade has been about 22 per cent, said Seetharam, who was was earlier this month appointed India's permanent representative to International Renewable Energy Agency (IRENA).

India is one of the 21 members of the Abu Dhabi-based IRENA and the current vice-chairman of its council.

Seetharam said hydropower, bio-energy and solar energy are other areas that have good potential and sharing experiences and international cooperation is the way forward to tap this potential.

"There are plans during the 12th five-year plan (2012-17) to add an additional renewable capacity of 30 GigaWatts. This includes 15 GigaWatts of wind, 10 GigaWatts of solar, 2.7 GigaWatts of biomass and 2.1 GigaWatts of small hydro," Seetharam told PTI.

Further, he said that all these require huge investment. According to him, during the 12th five-year plan, the projected investment into renewable is to be four times above the 11th five-year plan.

The 11th five-year plan had projected an investment of Rs 892 billion and for the current plan it has gone up to Rs 3,186 billion.

Seetharam said that renewable energy solutions are relevant to India as they can be generated in remote areas that are difficult to access from the central grid. Renewable energy allows you to produce energy where it is consumed even in remote areas where you can have wind, solar or biogas.

India recently became the 19th member to designate a permanent representative to IRENA, an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation.

IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy in the pursuit of sustainable development.

<Source>

A smart grid will soon be able to switch off appliances in your house

Pilot project to be implemented in Indiranagar; Escoms hope to reduce power wastage through this

Did you forget to turn your fan off when you left home? In a short while, Bescom will itself turn it off through a smart grid and reduce unnecessary consumption of energy in your home.

People of swanky Indiranagar will soon be testing the country's first ever 'smart grid' project. The project not only helps in saving power for Escoms, but alerts people about excess and unnecessary usage.

Cleared by Central Power Research Institute (CPRI), Bescom had embarked on the Rs 87-crore project in 2012. Subsequently, Bescom had hired the US firm KEMA as consultant to conduct feasibility studies in Electronics City and submit a project report. But owing to technical hurdles the company, scheduled to submit a report by July 2013, sought permission till December 2014.

Pankaj Kumar Pandey, Managing Director, Bescom told Bangalore Mirror that the electricity company will itself execute the project now at Indiranagar, with assistance from Power Grid Corporation of India (PGCI). "They will be submitting a DPR (detailed project report) after doing a field survey at Indiranagar and based on the report in about a month or two, we will take up work," Pandey said.

'Smart' in technology!

The technology is about integration of information and communication into electricity transmission and distribution. The project will help people plan their energy consumption according to their daily requirement and interact with power company directly about their requirements. Using the digital technology to transmit power, the Escoms can control appliances at consumers' homes to save energy and thereby reduce cost and ensure transparency.

Giving insight into the way technology works, a senior engineer said, "Consumers can control their power use sitting at office or any other place. If they forgot to switch off any appliances, they can easily cut off power just by sending an SMS to the grid which will immediately stop transmission of power to it. Besides, you can also plan your requirements based on consumption pattern.

Companies can keep tab on your consumption and whether you are exceeding your sanctioned load. In case if anybody is using excess power than required, they will be sent SMSs directly by the grid to cut down." The project was the result of an agreement between then Prime Minister Manmohan Singh and US President Barack Obama, who inked a pact for cooperation in energy efficiency. Electronics City in Bangalore was chosen for the project for its diverse and quality population which had high knowledge of technology.

<Source>

Empowering Telangana Farmers with Free Solar Pumps

Telangana faces a power shortage due to the huge demand from Hyderabad city, industries and agricultural pump-sets. The Andhra Pradesh Electricity Regulatory Commission (APERC) advisory of 16 June 2014 to the Telangana Government says there are 18.14 lakh electric- pump sets in use. APERC estimates the total power consumption these pumps at 9,771 MU per year. At Rs 5 per unit this cost is estimated to be Rs 4,874 crore per year. This power supply requires generating capacity of 1,133 MW, which at Rs 7 crore per MW means a capital cost of Rs 8,000 crore. APERC estimates that some Rs 860 crore a year can be saved if “Demand Side Management” measures are adopted - which has not been possible so far. A better way is to carry out a one-time “Supply Side Management” project. That will require replacement of all existing pumps by solar-pumps which will be given free of cost to wellfarmers by Telangana Discoms. In India, the cost of solar-pumps varies between Rs 3.5 to Rs 5 lakhs per unit. However, costs in the US average Rs 3 lakhs. These units are simple and come in kits which farmers can erect themselves. In bulk supply unit prices may fall further. Installing 18-lakh solarpumps would cost Discoms about Rs 54,000 crore. This is a huge amount but it makes economic sense. Till 2004, the Government of India (GoI) provided a subsidy of 80% of the cost of solar-pumps. Thereafter, this was reduced to 30%.

How can solar-pumps make sense as opposed to grid power?

There is acute shortage of grid power 2) The cost of a grid and its distribution losses are high, while solar-pump are located at well-site even where no grid is available 3) Solar power is available in day time unlike grid supply 4) Quality of grid power is low and results in motor burnt-out. 5) Farmers are without power in crucial crop phases when transformers burn due to overload. 6) Farmers are harassed by linemen and electricity officials for ensuring grid supply. 7) Solar-pumps need no maintenance and have no running cost 8) Solar-pumps ensure farmer’s control over water delivery and this enables them to extend their cultivated area by adopting non-rice crops and by using drip irrigation

If all the 18-lakh wells are provided with solar-pumps free by the Telangana Discoms, the real cost to Discoms works out as follows:

a) The total grid power saved and sold to industry at Rs 9 per unit will earn Discoms an extra Rs 8,740 crores per year. An equal amount will be saved by industry as their captive generation is now costing them Rs 18 per unit. Industry will benefit , employment and tax revenues will increase and new industry will be attracted. b) If the GoI’s 80% subsidy is restored, the remaining 20% cost to Discoms will be a one-time cost of Rs 10,800 crores - a pay-back in 15 months. c) If the GoI sticks to its 30% subsidy, the Discoms will have to fund a one-time amount of Rs 37,800 crore and will be made up in 4 years - as before, by sale of saved power to industry. d) Pollution and carbon emissions will be reduced when industry stops using diesel for captive generation. e) Discoms will get internationallyawarded carbon credits for reducing emissions which are encashable. Given this possibility, the Telangana Discoms should put together a proposal through GoI to the World Bank (WB) for financing purchase/installation of 18-lakh solar-pumps with a long term loan. First, the WB loan will help GoI and the State to spread their subsidy payment over the loan period. Second, the WB welcomes power-saving projects and it fits into its agenda of reducing greenhouse-gas emissions. Third, the WB will provide cheap loans on long tenure and it may also provide an IDA soft loan/grant component. Fourth, Discoms would pay their share of subsidy through the sale of power saved to industry and sale of carbon credits. Fifth, farmers could be allowed to use grid power if necessary but with metered payment. Sixth, Telangana Government will not have to continue to subsidise free power every year freeing these funds for development. Seventh, Discoms can avoid depriving industry of power and also charging it high prices in order to cross-subsidise free power. Eighth, WB will tender the purchase internationally and get the best technical equipment at a lowest cost under its strict procurement procedures. This scheme will make lakhs of Telangana farmers and their families free from the harassment of Discom officials as well from the uncertainties of power supply to their crops. Farmers will cease to be subjects of Discoms and become ‘empowered’ citizens of the State and make them more independent. It will reduce the need for farm-loan waivers. Telangana State will then usher in a real and permanent change in the lives and livelihoods of its farmers and their families and ensure their sustained prosperity.

<Source>

6,500 solar streetlights; 1,950 solar water pumps installed in Punjab

Punjab Energy Development Agency (PEDA) has successfully implemented Biogas Development & Solar Water Heating Programme under which 1.6 lakh biogas plants and 29 lakh liter per day solar water heating systems have been installed in the state, informed chief parliamentary secretary Desraj Singh Dhugga here on Tuesday.

He also informed that besides, 6,500 solar street lights, 1,950 solar water pumps have also been installed in the state. Dhugga said that solar power projects of 250MW were under execution and scheduled to complete during 2014-15. He said that state government had also successfully partnered the completion of 7.5MW solar plant on a single roof which is the largest such plant in India.

The state was shortly going to notify net-metering guidelines on solar power which will provide a major thrust to the solar rooftop programme in the state.Dhugga said that state had fixed ambitious target under New and Renewable Energy Policy 2012, which incentivizes solar and biomass based technologies and energy conservation measures, thereby, working towards sustainable energy sources.

<Source>

28 States prepare climate action plans

An analysis of state action plans to combat climate change reveal a lack of innovative approaches and a high variation in budgets apart from the fact that many did not move ahead from the business as usual scenario. However, the exercise by 28 Indian states is one of the largest sub-national action plans in the world and has at least started a conversation on decentralised planning for climate action.

The Centre has approved the climate action plan for Himachal Pradesh so far with a budget of Rs 1,560 crore. Minister of state for environment Prakash Javadekar said in Parliament that the National Steering Committee on Climate Change has endorsed the plan by Himachal Pradesh.

The analysis in the report, "From Margins to Mainstream" State Climate Change Planning in India as a Door-opener to a Sustainable Future' by the Centre for Policy Research, authored by Navroz K Dubash and Anu Jogesh is based on an analysis of five States over two years. It says that while it was positive that States were preparing action plans, some of the plans in their current avatar were are not immediately actionable. The study finds shortcomings in approach, process, formulation of outcomes and implementation efforts.

These shortcomings are united by a common thread – a tendency to prematurely view state climate plans as vehicles for generating implementable action rather than an opportunity to redirect development towards environment sustainability and climate resilience. Ms Jogesh said that there was much ambiguity on funding for these plans and some States had hugely differing budgets, for instance Orissa pegged it at Rs 17,000 crore for five years while Haryana's plan costs Rs 55,000 crore. There was no systematic framework for arriving at these numbers. The ministry of environment and forests has set aside Rs 90 crore for State action plans.

Following the Centre's mandate, all state plans are aligned with the national action plan on climate change. But this may have reduced the scope for local experimentation. In some state plans, sector based recommendations go as far as to match national mission objectives. For instance, suggestions for actions in the water chapter of five state plans map closely with objectives in the National Water Mission, the study said.

An analysis of the state plans of Himachal Pradesh, Karnataka, Sikkim, Madhya Pradesh and Odisha says that the plans were not geared to facilitate big changes. Even as the Centre's advice to States was to focus on adaptation, mitigation can be found in plans were issues like energy efficiency was a local imperative. However, energy was not looked at in a substantive way and many states, for instance, tend to offer existing renewable energy targets.

The Madhya Pradesh report presents 30 year old figures on hydropower generation in the Narmada and the Sikkim report, while acknowledging threats to hydropower generation as a result of climate change, circumvented any discussion on policy approaches to hydropower generation or any other energy source in the state, Ms Jogesh said.

State climate change action plans are treated synonymously with sustainable development planning. This approach usefully injects environmental issues into development planning, but represents a lost opportunity to internalize climate resilience. The study finds the plans looked at the business as usual scenario and not at how climate change could worsen the scenario.

<ReadMore>

Ujaas Energy Ltd commissions first grid connected roof top solar PV power plant in UP

After successfully commissioning the first grid connected roof top solar PV power plant with the facility of bi-directional and net-metering in the Hyderabad and then in Odisha, Ujaas Energy Limited(Formerly known as M And B Switchgears Ltd.) is happy to declare commissioning of first grid connected roof top solar PV power plant in the state of Uttar Pradesh in city of Noida and Greater Noida. These plants are executed under the allocation from SECI-Phase-II and under JNNSM.

The company has successfully installed and commissioned 5 x 100 KW grid connected roof top solar PV Power Plant on the roofs of the head quarters of Navaratna PSU NFL (National Fertilizers Limited), Ansal Plaza a leading mall, Maha ratna PSU NTPC, leading tobacco product manufacturer Baba Global in Noida/Greater Noida. Company also informed that they will soon be commissioning couple of more grid connected roof top solar power plants with the facility of bi-directional metering in the state of UP in various other cities of UP like Lucknow, Kanpur etc.

Speaking on this the Jt. Managing director of Ujaas Energy Limited, Mr Vikalp Mundra expressed his pleasure and said that these plants with the grid connectivity and bi-directional metering will bring green revolution in the state of Uttar Pradesh. Since these plants are grid interactive and with the facility of bidirectional metering, the excess generation from these plants does not go waste and gets exported to the grid and can be adjusted towards future usage. Since these projects are battery less, they are maintenance free and highly cost effective.

On this rare achievement he most prominently mentions that the same was possible because of the active support and encouragement from the renewable energy department of the state UPNEDA. He further said that the Principal Secretary Additional Energy Sources Sh. Jivesh Nandan ji and Principal Secretary Energy Sh. Sanjay Agrawal ji personally ensured that the these projects get connectivity permission and more such projects can be encouraged in the state. Proactive decision and support from Dir. Commercial Sh. Sanjay Kr. Singh ji and entire team of UPPCL and UPNEDA made it possible to get the connectivity permission. Further the team of Noida Power Corporation Limited after making the feasibility study also provided the NOC and connectivity permission.

Uttar Pradesh is a big state and has significant power crisis. Moreover the state has large industries and commercial installations. If all the industries, commercial buildings, college & universities, hospitals and other large roof owners go ahead with these grid connected solar plants a major requirement of their power can be catered and utilities power can be given to the masses more effectively.

<ReadMore>

Green energy to be used to run 2,200 mobile towers

For the first time in India, solar power will be extensively used to run 2,200 mobile towers to be set up in nine Naxal-affected areas.

The mobile towers, to be set up at a cost of Rs 3,216 crore, will be operated without any support from electricity or generators.

This is for the first time in India that green energy will be used so extensively to run such a large number of telecom towers, official sources said.

Solar energy will be used to avoid interruption of electricity supply, which is irregular in most of the areas. Diesel-run generator sets create lots of pollution in addition to the problem of regular supply of fuel.

A technology developed indigenously by an Indian vendor will feed the towers with solar power to function normally in addition to charging the battery simultaneously.

On August 20, the Union Cabinet gave its approval for the project to be implemented in one year.

The Ministry of Home Affairs has been pushing for installation of mobile towers in Naxal-hit areas since 2010. The absence of mobile services has made it tough for security forces to operate and get timely help in critical situations, leading to loss of lives in some incidents.

The lack of telecom infrastructure in Left wing extremism affected states -- Jharkhand, Bihar, Chhattisgarh, Madhya Pradesh, Maharashtra, West Bengal, Odisha, Uttar Pradesh and Andhra Pradesh -- severely compromises the position of the security forces vis-a-vis the Maoist ultras.

Most of the towers will be set up in secured locations like police stations or camps of security forces so that the extremists cannot target them for destruction.

<Source>

India Plans To Add 10,000 MW Wind Energy Capacity Every Year

Indian wind turbine manufacturers and project developers have been advised by the government to make efforts to increase annual capacity addition to five times its current level, a leading Indian newspaper has reported.

The new Indian government is looking to promote aggressive investment in the wind energy sector after it re-introduced financial incentives in this year's budget. The current rate of annual capacity addition is around 2,000-3,000 MW. The government has restored the accelerated depreciation tax benefits in addition to the existing generation-based incentives with a hope to rekindle growth in the sector.

On May 31, 2014, India had an installed wind energy capacity of just over 21,200 MW, with an estimated 2,000 MW to be added between April 2014 and March 2015. Wind energy has a share of almost 67% in India's renewable energy capacity. Wind energy is clearly a favourite for the project developers, as well as financial institutions, as it is a proven technology. The Indian government is expected to take several additional measures to boost wind energy infrastructure in the country. A national wind energy mission is slated to be launched soon, which will, in all likelihood, implement capacity addition targets higher than those set under the ambitious national solar mission.

The national wind energy mission will also include the central and state governments to implement additional regulatory and financial incentives for project developers. This will lead to more project developers getting into the market which, in turn, will spur competition and drive tariffs down.

<ReadMore>

Government planning to light up border with solar power plants

The government plans to light up national border with solar power plants, some of which could also fence the areas. The proposal, a brainchild of Prime Minister Narendra Modi, is to set up 1,000-mw plants on defence land and supply the electricity at a fixed price ofRs 5.5 per unit for 25 years.

The proposal aims at providing electricity access to armed forces which are the largest consumers of diesel in the country.

The proposal comes at a time when the Centre plans to de-control diesel prices.

The government had in the budget documents indicated de-regulating diesel prices in the current financial year. Presently, under-recovery on sale of diesel stands at Rs 1.78 per litre.

The new and renewable energy ministry has prepared the draft proposal that will now be circulated for interministerial consultations before it is put before the Union Cabinet for approval, a senior government official said. "The grid-based projects will be bid out to solar projects developers with a condition that they should use made-in India equipment.

The plants could fence borders at places which need to be illuminated," he said.

The idea to build solar energy projects along national borders was first mooted by Modi during his interaction with the officials of new and renewable energy ministry.

"The plan is to tap the solar potential in collaboration with the defence ministry at border areas which are mostly barren or abandoned lands," an official in the new and renewable energy ministry said.

Minister of state for power, coal and renewable energy Piyush Goyal on Friday said that the government was concerned about large number of households which do not have electricity access and therefore was planning to deploy renewable energy sources in a big way.

The minister met solar power producers, equipment manufacturers along with officials in the renewable and defence ministries on Friday.

<Source>

Chamba Climate Meet-2014

International Conference on "Development, Biodiversity and Climate Change: Issues and Challenges"

3rd to 5th October 2014

Chamba, (H.P.), India

The Chamba Climate meet 2014, International Conference on “Development, Biodiversity and Climate Change: Issues and Challenges” is being jointly organized by Asia Climate Change Education Center, South Korea in collaboration with Commission on Environmental, Economic and Social Policy, National Centre for Good Governance, Department of Personnel & Training, Govt. of India and others. The conference is scheduled to be held at Govt. Post graduate College, Chamba, Himachal Pradesh from 3rd to 5th October, 2014. The topics of interest include Green Economy and Sustainable Development, Impact of Climate Change on Traditional Agricultural Practices, Environmental Impact Assessment: Success and Failure, Cities and Climate Change: Issues of Preparedness, Adaptability and Management, and Impact of Climate Change on Human Existence, Changing Behaviour and Livelihood. Speakers from different countries are expected to give their deliberations.

<ReadMore>

6th International Conference on Corporate Sustainability and Responsibility

8th and 9th October, 2014

Berlin, Germany

The 6th international conference on corporate sustainability and responsibility shall take place on 8th and 9th October, 2014 at Humboldt-Universität zu Berlin, Germany. The conference will focus on “Innovating for Sustainability” by exploring the integration of the vast knowledge they possess on organizational and product innovation with the work on CSR.

The topics include interesting topics like Sustainability and innovation, Investors and sustainability, Embedding sustainability into organizations and CSR networks and cooperation. Speakers from different universities, consultants, sustainability practitioners are expected to participate in the conference.

<ReadMore>

ICSEA 2014

2014 2nd International Conference on Sustainable Environment and Agriculture

October 29-30, 2014

San Diego, USA

2014 2nd International Conference on Sustainable Environment and Agriculture (ICSEA 2014) will be held in San Diego, USA during 29-30 October, 2014. ICSEA 2014 is sponsored by the Asia-Pacific Chemical, Biological & Environmental Engineering Society (APCBEES). It is one of the leading international conferences for presenting novel and fundamental advances in the fields of Sustainable Environment and Agriculture. It also serves to foster communication among researchers and practitioners working in a wide variety of scientific areas with a common interest in improving Sustainable Environment and Agriculture related techniques. Topics of interest for submission also include: Tropical Agriculture, Biodiversity, Climate Change, Environment, Water Management and Soil Conservation and Food Sovereignty and Food Security.

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COSRA 2014

The Inaugural Conference on Social Responsibility in Asia (COSRA 2014)

October 29-31, 2014

Hiroshima, Japan

The 2014 Inaugural Conference on Social Responsibility in Asia (COSRA 2014), to be held in Hiroshima, Japan, is an international conference that offers a platform for scholarly and applied conversations among a wide variety of stakeholders concerned with the continual challenge of advancing the social responsibility agenda: people, planet, and growth. As the fields of social responsibility, sustainable development and sustainable business cross over into multiple areas and disciplines, authors are expected to give their deliberations on a range of topics, perspectives, and disciplines. With the theme of **Balancing the Triple Bottom Line** the conference will promote a critical understanding of the innovative and organic approaches concerning social responsibility toward sustainability.

The conference is being organized by The Pacific Rim Education for Sustainable Development Alliance (PRESDA), Japan. Climate Change and Sustainability, Reducing Emissions from Deforestation and Degradation (REDD), Science & Technology of Sustainability, Sustainable Business, Production and Consumption, Sustainable Energy Policies and Sustainable Development figure among the topics.

<ReadMore>

The Times of India, Delhi dated July 27, 2014

Depleting ground water levels cause for worry

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New Delhi: Ground water levels in various parts of India are declining as the country could not adequately recharge aquifers in deficit areas where it has been used for irrigation, industries and drinking water needs of the growing population over the years.

The Central Ground Water Board (CGWB) has told the ministry of water resources that around 56% of the wells, which are analyzed to keep a tab on ground water level, showed decline in its level in 2013 as compared to the average of preceding 10 years (2003-12) period.

The CGWB, a government agency, came to this conclusion by analyzing 10,219 wells across the country. It found that 5,699 wells had reported decline during that period. It also concluded that agriculture sector is the biggest user of water followed by domestic and industrial sector.

Sharing the Board's data, the ministry of water resources had last week told the Lok Sabha that the ground water was continuously being exploited due to population growth, increased industrialization and irrigation.

"As a result, ground water levels in various parts of the country are declining... The state governments have been advised to take suitable remedial measures to check ground water exploitation and ensure recharge of aquifers in water stressed areas", said the MoS for water resources, Santosh Gangwar, in his written response to a question.

Depleting ground water level may be a real worry if one looks at the future demand of water in India. It is estimated that the country would need 1,180 billion cubic meter (BCM) of water annually by 2050. India has, at present, annual potential of 1,123 BCM of 'utilizable' water with 690 BCM coming from surface water resources and remaining 433 BCM from ground water resources. In view of this projection, the country would not be able to meet its demand unless it recharges its aquifers and uses water more efficiently and judiciously.

The government has decided to set up a National Bureau of Water Use Efficiency under its 'National Water Mission' to promote water conservation in a big way, keeping in mind the future requirement.

The CGWB has, on its part, recently signed a memorandum of understanding (MoU) with Indian Institute of Remote Sensing to facilitate a collaborative study "to assess the impact of ground water abstraction" in India.

GOING DOWN & DOWN

Depleting ground water level in the country:

No. of wells analysed across the country during 2003-13 to find out ground water level | **10,219**

Comparison of ground water data for the pre-monsoon 2013 with decadal mean of the pre-monsoon (2003-12) shows the following result:

No. of wells showing fall in ground water level	No. of wells showing rise in ground water level	No. of wells showing no change
5,699	4,450	70

Fall in water level in wells

	(Figures in %)
Tamil Nadu	76
Punjab	72
Kerala	71
Karnataka	69
Meghalaya	66
Haryana	65
West Bengal	64
Delhi	62

Rise in water level in wells

	(Figures in %)
Dadar& Nagar Haveli	80
Arunachal Pradesh	66
J&K	62
Madhya Pradesh	58
Puducherry	57
Chhattisgarh	55
Assam	54
Rajasthan	51

OTHER BASIC FACTS

- India has **18% of the world's population**; It has **4% of water resources** of the world
- **Annual per capita availability of water decreases** from **6,042** cubic metre in the year **1947** to **1,545** cubic metre in **2011**
- Annual per capita availability of water was **1,816** cubic metre in **2001**
- Annual per capital availability of water will further **reduce** to **1,340** cubic metreby **2025** and to **1,140** cubic metre by **2050**

(Source: Ministry of Water Resources)

The Times of India, Delhi dated July 28, 2014

No end to waste on river bed

Dumping Continues; Area Near Smriti Van Getting Choked

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New Delhi: The city seems to be failing to conserve its eco-sensitive river zone. Despite repeated orders by National Green Tribunal (NGT) against dumping of any waste on the river bed, the Yamuna Riverfront Development Project site near Sarai Kale Khan is being used as a dumping ground for construction and demolition waste by several agencies.

The marshy area near Smriti Van is gradually getting choked with waste and mounds of excavated soil, said experts. "The area used to be a good marshland. Since Master Plan 2001, this area has been designated for Rajiv Gandhi Smriti Van and a lotus pond project. Its unique marshy character made the area a filtration zone for the sewage water coming from nearby drains," said Manoj Misra of Yamuna Jiye Abhiyan.

Marshy areas also play an important role in managing flood and are unique ecosystems with rich biodiversity, especially birds.

Misra claimed that about 18 hectares of the river bed land was allotted to Delhi Transco by Delhi Development Authority (DDA) "without carrying out any land use change or getting any clearance from the Yamuna standing committee or any environmental impact assessment".

Several government agencies and even private firms have projects in the area. Delhi Metro also has a construction site but its spokespersons claimed that DMRC had not violated any rule.

An expert committee of the environment and forests ministry, which includes IIT Delhi professor A K Gosain and former JNU professor Brij Gopal among others, has been reiterating the issue before the NGT bench. "No authority is checking this kind of dumping. Dumping and recycling should happen only at designated places identified by the government. Projects will generate waste but a safe, alternative site needs to be provided to dump it. We have recommended that a separate body be constituted to monitor dumping and recycling," said Gosain.

Such large-scale dumping also increases the possibility of flooding as the river will follow its natural course if water flow goes up due to rain or any other reason. It affects groundwater recharge, too.

The committee, headed by ecologist C R Babu, is also drafting a report that will decide the fate of DDA's controversial riverfront development project. The committee had advised in May that the project be scrapped as it involves construction on the river floodplains. Instead, it suggested, a 52km stretch of Yamuna in Delhi and UP be declared a 'conservation zone' under the environment protection act.

"One can only landscape it without affecting the floodplains," said Gosain.

MAKING IT A RUBBLE PLAIN

Photo: Sanjeev Rastogi

July 2014 | Show-cause notice issued to **DMRC asking why they shouldn't be fined ₹ 5 lakh for dumping construction waste** near CWG Village

July 2013 | NGT bench orders that **any person found dumping debris on the Yamuna river bank would have to pay a fine of ₹ 5 lakh** on the basis of "polluter pays" principle

Apr 2013 | A committee set up by NGT recommends a May 31, 2013 **deadline for various agencies to clean up construction debris**

Feb 2012 | **Petitions filed** by activist Manoj Misra against waste dumping on Yamuna floodplains listed

Delhi generates about 4,000 tonnes of construction waste daily. Most of it ends up in desolate areas like the Ridge and Yamuna floodplains

The Economic Times, Delhi dated July 29, 2014

GenY Entrepreneurs at Helm of Solar Energy Biz

usiness families' next generation takes interest in solar power projects

MITUL THAKKAR
NEW DELHI

It's the land of the rising sons. Many second-generation entrepreneurs from families that run businesses ranging from alcohol to education are seeing a new dawn in solar energy.

These families include those controlling the Emami Group, Ruchi Group, Mohan Breweries, Hero automobiles, Nova dairy products, Sintex water tanks, Cargo Motors and India Gate basmati producer KRBL.

Business is easy and profitable, and brings tax benefits, the stamp of being eco-friendly, as well as unlimited, free supply of the key input — sunlight. This year's weak monsoon has made it even more attractive as sunny days in the usually cloudy period has brightened the slack season.

The Munjal family of Hero MotoCorp has given responsibility of its renewables business to Rahul Munjal, who earned his degree in economics from University of Rochester, US. Karan Dangayach, whose father heads water tanks maker Sintex, saw sunshine after studying marketing and sustainable enterprise at University of Michigan. He has promoted Shashwat Cleantech to develop solar projects and market solar water pump solutions.

Solar power inspires Ketan Mehta, 25, who studied at the Indian Institute of Technology-Roorkee and set up Ray Power Infra instead of joining his father's Jodhpur National University. The cost is higher for solar power than conventional sources on a per-megawatt basis, but these projects don't require huge funds since their size is usually small at between 1 MW and 50 MW, Mehta said. "Hence, there is no entry barrier for those interested in the energy sector."

Mehta aims to commission 100 MW of solar power projects on its own and 200 MW of capacity as an engineering procurement and construction contractor in a year.

"It is refreshing to deal with this set of second-generation entrepreneurs, most of whom have had exposure to quality education in the West that has an influence on their thinking.

The common theme among this set of promoters is a genuine concern for the environment plus their conviction that they can lead the change from profitability to sustainability, which is essential for the growth of their enterprise," said Sujoy Ghosh, country head of First Solar for India, a US-based solar power equipment maker.

Kameswara Rao, PwC India leader for energy utilities and mining, said limited risk and assured returns over long period make solar power attractive. "Also, presence in renewable energy helps companies to showcase their commitment towards environment," he said. "Unlike conventional power projects, solar power has a very little downside due to shorter execution period."

Kuldeep Saluja, who runs the ₹1,700-crore dairy firm that sells the Nova brand of milk products, is helping his 30-year-old son Sharad Saluja to install 10 MW of solar power project. "No other business offers you payback period of less than six years and assured returns for 19 years," the senior Saluja said. The family has also invested ₹300 crore on wind projects.

National Solar Energy Federation of India chairman Pranav Mehta said renewable energy has given opportunity to a large number of new generation entrepreneurs in the power sector, which has been monopoly of the government and large industrial houses.

Sunny Days Ahead?

Interested Business Families

Scions of the Emami Group, Ruchi Group, Mohan Breweries, Hero automobiles, Nova dairy products, Sintex water tanks, Cargo Motors and India Gate basmati producer KRBL eye sector

Rationale Behind the Push

- Business easy and profitable
- Unlimited, free supply of key ingredient – sunlight
- The eco-friendly stamp

"No other business offers you payback period of less than six years and assured returns for 19 years"
Kuldeep Saluja, *owner of diary firm selling Nova products*

The Times of India, Delhi dated July 31, 2014

India, US hold joint panel meet on climate issues

Vishwa.Mohan@timesgroup.com

New Delhi: Nearly ten months after setting up a joint working group on combating climate change, India and the US on Wednesday held its first meeting where both countries agreed to coordinate on many issues including the contentious one of phasing out climate-damaging refrigerant hydrofluorocarbons (HFCs).

New Delhi, however, stuck to its stand of handling the refrigerant issue under the multilateral UN convention which safeguards the interests of developing countries. It merely discussed the "scientific and technical aspects" of the issue so that both countries may prepare a common strategy without diluting India's stand.

Both countries agreed to cooperate in the areas of clean energy, smart grid and energy efficiency, development of technology and sharing of information on best practices on adaptation measures specifically for extreme weather events.

The discussion was preceded by a meeting between environment minister Prakash Javadekar and US special envoy on climate change Todd Stern. Javadekar underlined the importance of quickly capitalizing the Green Climate Fund (GCF) and using the money to purchase Intellectual Property Rights of climate-friendly technologies, saying these technologies should, thereafter, be provided to developing countries free of cost.

AFP

TEAMING UP TO GO GREEN

Deccan Chronicle, Hyderabad dated July 31, 2014

Moisture is heating up Earth

Washington, July 30: Human activities are directly responsible for rising levels of atmospheric water vapour, the most abundant greenhouse gas and a key driver of global warming, scientists say.

Scientists at the University of Miami Rosenstiel School of Marine and Atmospheric Science and colleagues have found that rising levels of water vapour in the upper troposphere will intensify climate change impacts over the next decades.

Lead scientist Professor Brian Soden said: "The study is the first to confirm that human activities have increased water vapour in the upper troposphere."

The atmospheric moistening traps additional radiant heat and further increases temperatures. Climate models predict that as the climate warms from the burning of fossil fuels, the concentrations of water vapour will also increase. — *Agencies*

The Times of India, Delhi dated August 03, 2014

LG declares war on pollution

Asks Babus To Implement Panel's Suggestions Like A Mission

TIMES NEWS NETWORK

New Delhi: Lieutenant governor Najeeb Jung has directed the departments to implement policies on air and water pollution like a "mission".

On Friday, he accepted the recommendations by a high-powered committee headed by the chief secretary. The committee suggested a number of short- and long-term policies that can help Delhi deal with the pollution crisis. 'No tolerance zones' for parking, hike in surface parking rates, introduction of Euro-V fuel, regulating the entry of vehicles not bound for the capital, tightening pollution under control (PUC) norms are some of the highlights.

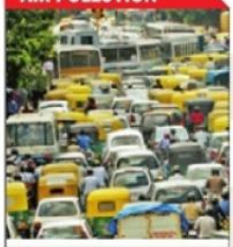
The LG had constituted the panel in May after a World Health Organization report claimed that Delhi had the highest air pollution levels among 1,600 cities in the world. The measures for checking water pollution include optimum use of sewage treatment plants, reuse of treated water, disposal facilities for toxic as well as construction and demolition (C and D) waste, notification of sanitation bylaws to sternly deal with littering and similar offences.

While accepting the recommendations, Jung told all departments to submit a separate work schedule for time-bound implementation within three weeks. He also asked for sub-plans from each department.

IMPROVING ENVIRONMENT

KEY SHORT-TERM MEASURES

AIR POLLUTION



- Effective implementation of pollution under control (PUC) norms for all vehicles
- Regulating entry and exit of non-destined vehicles in Delhi
- Adoption of a parking policy with clearly marked-out 'No Tolerance Zones'
- Introduction of Euro-V norms for vehicles to be registered in Delhi
- Promotion of non-polluting, battery-operated vehicles
- Promoting use of Metro and other public transport to help reduce traffic
- Prohibition of illegal burning of garbage; making provisions for conversion of horticulture waste to refuse-derived fuel (RDF)
- Setting up of air quality monitoring stations in NCR
- Action plan for green Delhi to be implemented more robustly
- Running public awareness campaign against air pollution

WATER POLLUTION

- Treatment of all sewage and industrial effluents
- Optimum utilization of treated wastewater from sewage treatment plants (STPs) and common effluent treatment plant (CETP)
- Prevention of dumping of solid waste in drains
- Land for treatment, storage and disposal facility for hazardous and construction and demolition waste
- Notification of sanitation bylaws for strict punishment for littering and other offences
- Water efficient fixtures, rainwater harvesting and groundwater recharge to be popularized

"Legislative amendments needed to implement the recommendations should be taken up on priority," said Jung. The project implementation unit at the LG's office will monitor the progress on a quarterly basis. "This needs to be taken up on a mission mode by all government agencies."

The committee has also proposed some long-term policy changes. Developing a public transport plan and its time-bound implementation, amendment of the central motor vehicle rules to include vehicular pollution norms, setting up trans-shipment zone in the bordering areas to keep out heavy vehicles, shifting of inland container depots to areas outside Delhi, establishing an urban transport fund to promote public transport are part of the long-term strategy to control air pollution.

Crucial remedies for Yamuna include 100% treatment of sewage and industrial effluents within three years to stop untreated discharge from entering the river. Removal of all encroachments from the floodplains is another suggestion.

The lieutenant governor had set up the high-powered committee chaired by the chief secretary with special commissioner of police (traffic), Delhi Police; secretary (environment); commissioner (transport) and additional secretary (DPCC) as its members.

The WHO report had found concentration of PM2.5 (fine, respirable particles) was the highest in Delhi at 153 micrograms per cubic metre, while the WHO standard is 10mg per cubic metre. In Beijing, the level was 56mg.

'Set up agency for rainwater harvesting'

TIMES NEWS NETWORK

New Delhi: With the National Green Tribunal focusing on rainwater harvesting in Delhi, resident welfare associations are saying the city needs a nodal agency to successfully implement the project. Though civic agencies annually allocate funds for rainwater harvesting, it is rarely done.

Since the last two years, the RWA of New Rajinder Nagar has been running from pillar to post to implement rainwater harvesting in the area. The project was sanctioned in stages but is yet to be completed. "The project got delayed due to multiplicity of authority. The civic agency constructed the channels long back but we didn't get permission to connect them to the nearby DJB borewell. It took almost four months to get permission from DJB," said Neeraj Gupta, president, New Rajinder Nagar RWA.

There should be a single-window clearance system for rainwater harvesting projects, he said.

Maintaining infrastructure for rainwater harvesting is another concern. "It is not the RWA's responsibility. We can only assist the civic agencies in identifying the problem. In many colonies rainwater harvesting is not being done due to poor maintenance of infrastructure," said Pankaj Aggarwal, president of Safdarjung Development Area RWA.

The Times of India, Delhi dated August 04, 2014

Ants hold key to fighting global warming?

New York: Ants may be cooling the Earth by helping trap carbon dioxide from the environment, a new study has claimed.

A long-term experiment tracking the ants' effects on soil suggests they cooled Earth's climate as their numbers grew.

"Ants are changing the environment," said lead study author Ronald Dorn from the Arizona State University in Tempe.

Certain ant species "weather" minerals in order to secrete calcium carbonate— better known as limestone. The process traps and removes a tiny bit of carbon dioxide gas from the atmosphere, Dorn said.

This ant limestone factory is a small-scale version of the massive planetary-cooling process that takes place in the oceans, known as carbon sequestration, 'Live Science' reported.

YES, THEY CAN: A long-term experiment tracking the ants' effects on soil suggests they cooled Earth's climate by trapping carbon dioxide

Dorn discovered that ants were powerful weathering agents by tracking the breakdown of basalt sand. His experiment shows that ants appear to break down the minerals 50 to 300 times faster than sand left undisturbed on bare ground.

According to Dorn, the ants may be scavenging calcium and magnesium from the minerals and using these elements to make limestone. In the process, the insects may trap carbon dioxide, a greenhouse gas, in the rock, the report said.

The transformation could take place when ants lick sand grains and stick them on the walls of their nests, but Dorn said the process is truly a scientific mystery. The study was published in the journal Geology. PTI

Deccan Chronicle, Hyderabad dated August 04, 2014

AP's solar parks to add 1,300MW to power grid

M. ROUSHAN ALI | DC
HYDERABAD, AUG. 3

Andhra Pradesh government will set up two solar parks of 1,000 MW and 300 MW in Anantapur and Guntur districts respectively.

The AP Energy department and Non-conventional Energy Development Corporation of Andhra Pradesh Limited [Nedcap] have been given 500 acre land in P. Kothapalli of Anantapur district, while the land for the one at Guntur is yet to be finalised.

The market value of each acre has been fixed at ₹2 lakh and 10 per cent of the total marklet value per acre would be the lease amount to be paid by Nedcap.

Officials said that the state which was reeling under 22 million units power deficit per day when the TD took charge two months ago, has as on date achieved almost zero power deficit. The power demand in AP is around 135 million units currently and it is almost being met without any scheduled power cuts, officials added.

Chief Minister Chandrababu Naidu has asked officials to focus on improving all forms of energy generation i.e., hydel, thermal, gas, solar, wind, bio-mass, and nuclear, and set them a target of generating at least 7,000 MW of power in the next five years.

"When our government assumed office on June 8, the state was reeling under a power deficit of 22 million units a day. As on date, the deficit has become almost zero as we could draw additional power from NTPC (172 mw), Simhapuri (130 mw), other states (75 mw) and even the Krishnapatnam unit has started to function from July 25," information minister Palle Raghunatha Reddy said.

500 MW WIND POWER TO BE REALISED WITHIN A YEAR

AMRITA DIDYALA | DC
HYDERABAD, AUG. 3

The AP government plans to add 500 mw of wind power capacity in the state within a year and is revising the wind power potential estimates in the State.

AP has a typical advantage of high wind velocity which has been tapped scarcely. In its bid to focus on renewable sources of energy, AP is looking at wind power with lot of interest now.

To ensure 24 hour uninterrupted power supply, the state has charted out plans to give utmost priority to enhance the generation capacity by promoting renewable energy sources.

The APERC has been receiving a number of proposals for approval of individual PPAs.

The Times of India, Delhi dated August 06, 2014

Now, connect battery-free devices to Wi-Fi

Tech Uses Radio Signals As Power Source

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London: Scientists have created the world's first technology that can connect battery-free devices to Wi-Fi.

University of Washington researchers say soon your wristwatch or other wearable device will communicate directly with your online profiles, storing information about your daily activities where you can best access it — all without requiring batteries. Or maybe battery-free sensors embedded around your home could track minute-by-minute temperature changes and send that information to your thermostat to help conserve energy.

The university's engineers have designed a new communication system that uses radio frequency signals as a power source and reuses existing Wi-Fi infrastructure to provide internet connectivity to these devices.

Sensors could now be embedded in everyday objects to help monitor and track everything from the structural safety of bridges to the health of your heart. But having a way to cheaply power and connect these devices to the internet has kept them from taking off.

"If such devices are going to take off, we must provide connectivity to the potentially billions of battery-free devices that will be embedded in everyday objects," said Shyam Gollakota, a University of Washington assistant professor of computer science and engineering. "We now have the ability to enable Wi-Fi connectivity for devices while consuming orders of magnitude less power than what Wi-Fi typically requires."

This work builds upon previous research that showed how low-powered devices such as temperature sensors or wearable technology could run without batteries or cords by harnessing energy from existing radio, TV and wireless signals in the air. This work takes that a step further by connecting each device to the internet, which previously wasn't possible.

The challenge in providing Wi-Fi connectivity to these devices is that conventional, low-power Wi-Fi consumes three to four orders of magnitude more power than can be harvested in these wireless signals.

Fastest external phone charger developed

Researchers have invented the world's 'fastest' external phone charger which ends the need to plug your smartphone into an electricity socket and can charge your device in 15 minutes. The Petalite Flux battery is small enough to fit in a pocket and has been created by Leigh Purnell, an Aston University graduate. It will be launched on the Indiegogo crowdfunding website. PTI

The Economic Times, Delhi dated August 04, 2014

GREEN DELHI
Plantation Drive

A CONSUMER CONNECT INITIATIVE

Renewing the greening vows

A tree plantation drive, that spanned three leading women's colleges in the city, is a perfect example of how activists, students, government agencies and the community at large can work in tandem towards a cleaner, greener environment

SHAILJA.KATYAL@TIMESGROUP.COM

The role of trees, besides their aesthetic appeal, is significant in purification of air, prevention of soil erosion, conservation of water, restoration of the ecological balance, and creating a natural resource for medicines, among other things. Unfortunately, the overall green cover of Delhi is diminishing and, as a consequence, pollution is increasing at an alarming rate. Increasing the green cover through tree plantation is one of the easiest yet effective means to reduce this imbalance.

With this objective in view, The Times of India and Indraprastha Gas Limited (IGL) jointly organised a plantation drive at Gargi College and Kamala Nehru College on July 30 and Maetreyi College on July 31. The event was supported by Delhi Parks and Garden Society, Department of Environment, Government of Delhi. The co-sponsors for the drive were Bombay Suburban Electric Supply (BSES) and Delhi Transport Corporation (DTC).

L to R: Dr. Shashi Tyagi, S.D. Singh, Gautam Sen, Sanjiv Kumar, Malose W. Mogale, Kavita Ashok and Vijay Handa


L to R: Kavita Ashok, Ravinder Gupta, Vijay Jolly and Mukesh Gupta plant a sapling

Among the dignitaries present on the occasion were Meenakshi Lekhi, BJP National Spokesperson and Member of Parliament from New Delhi Lok Sabha Constituency; the chief guest, Sanjiv Kumar, IAS, Secretary-Department of Environment, Govt. of Delhi; S.D. Singh, CEO-Delhi Parks & Garden Society; Kavita Ashok, social activist and personality development coach; Malose. W. Mogale, High Commissioner of South African Embassy; aviation advisor Vijay Handa; Gautam Sen, Associate Vice President, The Times of India Group, Delhi; and Dr. Shashi Tyagi, Principal, Gargi College, Delhi. Vijay Jolly, Convenor, BJP Overseas Affairs, and Ravinder Gupta, Dy. Mayor, North Delhi, also lent their support to the drive. In her welcome address, Dr. Tyagi said: "More than 5 lakh people migrate to Delhi every year in search of a livelihood. This puts tremendous pressure on the infrastructure. A lot of green cover has to be sacrificed to make way for new roads and buildings. We all have to make an effort to restore the green cover."

Meenakshi Lekhi highlighted the need for energy-efficient systems to meet the demands of urbanization. "Smart cities need smart citizens. And 'smart citizens' means *'kum daam, zyaada fayda'*. We have to conserve our resources and empower ourselves for the future by putting efficient systems in place."

Sanjiv Kumar described Delhi as one of the greenest capital cities in the world. He exhorted the audience to remain vigilant and inform the authorities if they see any flouting of the green norms. "All of you are our eyes and ears. Our department does not have the staff strength or the resources to monitor each tree personally. All residents of this city can be our resource base," he said.

In the end, Kavita Ashok pointed out how, in this mad rush for urbanization, we are faced with this dichotomous situation wherein we have more space for people and less space for the environment. "People must consider it their personal responsibility to keep the surroundings clean and green. When we start practicing social and civic etiquette in our daily lives, we will automatically develop a love for the environment," she emphasised.

People must consider it their personal responsibility to keep the surroundings clean and green. When we start practicing social and civic etiquette in our daily lives, we will automatically develop a love for the environment.
Kavita Ashok, social activist


Smart cities need smart citizens. And 'smart citizens' means *'kum daam, zyaada fayda'*. We have to conserve our resources and empower ourselves for the future by putting efficient systems in place.
Meenakshi Lekhi, Member of Parliament from New Delhi

IGL: LARGEST CNG DISTRIBUTION COMPANY OF INDIA

Indraprastha Gas Limited (IGL) operates nearly 300 CNG stations and supplies PNG to more than 4.77 lakh households spread across Delhi, Noida, Greater Noida and Ghaziabad.

'The CNG Revolution' scripted by IGL, by way of supplying and popularizing 'green fuel' for transport sector, resulted in stark reduction and control of city's pollution levels over a decade back. Today over 750,000 vehicles in Delhi and NCR are running on CNG, including 400,000 private cars, and their numbers are growing.


Narendra Kumar, MD, IGL

The company makes its best efforts to educate its customers about the handling of fuel. Safety of the customers is of prime concern to IGL for which it is following a systematic approach in complying with various safety guidelines. As an organization born with an objective of cleaning the environment in Delhi, IGL has been using eco-friendly practices in its day-to-day operations. Apart from laying stress on creating green areas around its CNG stations, IGL also promotes green initiatives of Delhi government, wherein saplings are distributed from select CNG stations.

The Times of India, Delhi dated August 06, 2014

To save Yamuna, law only recourse

Bring River Zone In EPA Act Ambit By Declaring It Eco-Sensitive: NGT Panel

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New Delhi: An experts' committee constituted by National Green Tribunal on restoration and beautification of Yamuna has recommended legal protection for the river zone by notifying it as an eco-sensitive area under the Environment Protection Act.

The committee, headed by the additional secretary, ministry of environment and forests, and the vice-chairman, Delhi Development Authority, has also recommended constitution of an apex body under the lieutenant governor with officials from MoEF and Delhi government to look into maintenance of flow in the river and restoration of natural storm water drains.

NGT had constituted the committee on May 30 and asked its members to prepare the report in consultation with former JNU professor Brij Gopal and IIT Delhi professor A K Gosain. The committee's report is clearly contrasting with Delhi Development Authority's riverfront development plan which involves construction of parking lots, mounds and pathways, and having boating facilities.

The report instead takes a very ecological approach. It quotes Australian river expert D Mussared—"Floodplains are as important to rivers as bark is to trees. Most of the processes that drive life in rivers happen around their edges. Just as the sap flows through the outermost ring of trees, not through its centre."

The committee has observed that the flood carrying capacity of the river has been greatly reduced by encroachment and waste dumps. These need suitable dredging of accumulated sediment and solid waste. "It should be ensured that the floodplain fulfills its primary role of passage of flood waters and recharge of groundwater," it states.

The report recommends that all fly ash dumps from power plants in the floodplains should be removed as a priority as they are a source of arsenic toxicity. Sites of heritage value like Qudsia Ghat, Yamunabazar, Majnu ka Tila and Old Railway Bridge should be "developed with great care so as to minimize any adverse impact on the river zone".

It recommends that debris and municipal solid waste be quantified and then removed by using data from irrigation and flood control department. "Waste water without tertiary treatment should not be permitted to enter the river. No industrial waste should enter the river." The tribunal accepted the committee's report on Tuesday and has given two weeks time to respondents to submit objections or suggestions.

RESTORING THE FLOW EXPERT PANEL'S RECOMMENDATIONS FOR YAMUNA

- Flood-carrying capacity of Yamuna has reduced a lot due to waste dumps and encroachments. Riverbed should be restored to its original level through suitable dredging of accumulated sediments
- Create new wetland habitats for biodiversity conservation
- Conserve riverine ecosystem as a model of an ecologically sound urban riverscape, which also meets cultural, spiritual and religious needs
- Conserve and restore existing wetlands—wetlands north of Wazirabad, near Garhi Mandu, sub-zones VI and VII. Connect wetlands for water movement
- Leave a fringe of 50-100m on either side of river channel for vegetations like grasses and bushes
- Plant native species on floodplains
- Dredge back area retrieved from Millennium bus depot into floodplains
- Treatment wetlands be developed at mouth of drains
- A land management division of DDA under a director-level officer be set up to inspect and inform the enforcement branch on a daily basis for immediate remedial action
- Agricultural use of riverbed be regulated for farming by two peasants cooperative societies only for organically grown vegetables, fruits and flowers
- All natural drains falling into Yamuna be restored as natural tributaries of the river and these may carry only storm water

The Times of India, Delhi dated August 06, 2014

'Trap waste from colonies with no sewerage'

Times News Network

New Delhi: A committee constituted by National Green Tribunal to look into Delhi's drainage problems and consequent pollution of Yamuna has submitted its interim report. The committee has suggested that sewage from un-sewered colonies can be trapped at outfall points before they fall into a storm water drain and be directed towards sewage treatment plants.

It has also advised that in future Delhi adopt a decentralized system of STPs so that sewage from all parts of the city can be treated before entering Yamuna.

The committee, which has IIT professor A K Gosain as member, said it did not get any fresh information on natural drains in Delhi so that they can be identified and restored. Instead, the committee suggested that it can use the 1976 drainage master plan for Delhi as a reference document for natural drains. The NGT bench directed that 1976 maps be used and also be presented to the bench.

The committee also recommended all industries, dairies and slaughterhouses be relocated from residential areas so that they don't add to the treatment burden. It quoted guidelines for decentralized water management prepared by ministry of urban development and IIT Chennai to show how a decentralized system of STPs can be managed effectively.

The Times of India, Delhi dated August 07, 2014

Cigarette butts to power gadgets

Used Filters Can Help Store Energy

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London: A group of scientists from South Korea have converted used-cigarette butts into a high-performing material that could be integrated into computers, handheld devices, electrical vehicles and wind turbines to store energy. The researchers have demonstrated the material's superior performance compared to commercially available carbon, graphene and carbon nanotubes.

It is hoped the material can be used to coat the electrodes of super capacitors—electrochemical components that can store extremely large amounts of electrical energy—whilst also offering a solution to the growing environmental problem caused by used-cigarette filters.

It is estimated that as many as 5.6 trillion used-cigarettes or 766,571 metric tonnes are deposited into the environment worldwide every year.

In their study, the researchers demonstrated that the cellulose acetate fibres that cigarette filters are mostly composed of could be transformed into a carbon-based material using a simple, one-step burning technique called pyrolysis.

As a result of this burning process, the resulting carbon-based material contained a number of tiny pores, increasing its performance as a super capacitive material.

SMOKING FOR SCIENCE?

"A high-performing super capacitor material should have a large surface area, which can be achieved by incorporating a large number of small pores into the material," said Professor Jongheop Yi from Seoul National University.

"Our study has shown that used-cigarette filters can be transformed into a high-performing carbon-based material using a simple one step process, which simultaneously offers a green solution to meeting the energy demands of society. Numerous countries are developing strict regulations to avoid the trillions of toxic and non-biodegradable used-cigarette filters that are disposed of into the environment each year—our method is just one way of achieving this."

Deccan Chronicle, Hyderabad
dated August 07, 2014

KCR says Andhra leaders did not encourage green house cultivation in TS

Free power to greenhouses: CM

C.R. GOWRI SHANKER | DC
HYDERABAD, AUG. 6

Free power will be provided to green house cultivation, which ensures controlled environment for cultivation of various crops, especially horticulture, in Telangana state.

Chief Minister K. Chandrasekhar Rao, who made the announcement, also said that soon a pilot project would be taken up on 1,000 acres for green house cultivation besides providing drip irrigation to all sections of farmers irrespective of caste and community, to give a fillip to vegetable cultivation. "I was told by officials that power supplied for green house cultivation was on commercial tariff. We will come out with a new policy to provide free power for green house cultivation. Andhra leaders did not encourage green house cultivation in Telangana," he alleged.

Taking a dig at the Opposition who were provoking farmers, he appealed to them to observe restraint reassuring them the government was trying to do its best to get additional power and promised to make the state power surplus in three years.

Mr Rao was speaking at a function after launching *Mana Vooru, Mana Kuragayalu* scheme to promote vegetable cultivation in Telangana at Professor Jayashankar Agricultural University, Rajendranagar on the occasion of Prof. Jayashankar's 81st birthday celebrations. He also unveiled a statue, and set a foundation stone for a new research institute costing nine crore.

Stating that the people of Telangana were deprived of nutritious food, he said while the demand for vegetables in Telangana was 110 lakh tonnes, the production was a meagre three to four lakh tonnes. A big chunk of vegetables come from outside, he added.

"We have to create horticulture hubs in 50 km radius of Hyderabad. I am a farmer and have 60 acres of land. I found that agriculture is being done in unscientific manner. We need to grow soil specific crops to ensure better returns," he said.

Mr Rao undertakes large-scale green house cultivation in his farm near Gajwel.

Describing stoppage of seed production in the agricultural university he asked seed companies to become partners with the government and farmers in improving seed production in the state and make Telangana as the seed hub of the world."If the seed companies do not co-operate, we will set up our own seed corporation and take up seed production on a massive scale on par with international standards," he added.

Chief Minister K. Chandasekhar Rao speaks to farmers who have put their produce on display at the Mana Vooru, Mana Kuragayalu programme held at Professor Jayashankar Agricultural University, Rajendranagar, on the occasion of 81st birthday celebrations of Prof. Jayashankar.

We have to create horticulture hubs in 50 km radius of Hyderabad. I am a farmer and have 60 acres of land. I found that agriculture is being done in unscientific manner. We need to grow soil specific crops to ensure better returns

— K. CHANDRASEKHAR RAO
Telangana CM

The Times of India, Delhi dated August 08, 2014

Adopting sustainability is an advantage. It gives you a lower cost structure, more resilience and variability in costs

ANDREW WINSTON, Author, speaker, adviser

Green is Good

The purpose of business is to solve the world's problems profitably. Today's biggest problem is sustainability *by* **Priyanka Sangani**

When someone asks him 'Why is it important to set science based goals?' Andrew Winston answers 'because it is'. Then he uses the metaphor of a sinking boat to make his point. If the boat is inundated, you won't ask people how much water they can bail out of the boat. It's a specific amount of work that everyone needs to do to ensure that the boat doesn't sink. It's not very different when to comes to setting sustainability goals. "If you look at our water and carbon situation, it's clear that everyone needs to do some amount of work to fix the situation," says Winston.

An expert on how companies can navigate and profit from environmental and social challenges, Winston is the author of the recently released, *The Big Pivot*. His earlier books, *Green to Gold* and *Green Recovery* laid the framework by arguing that businesses that factor in sustainable goals into their business plans are laying the ground to be successful in the future. "Like genetic markers to ill-health, we are seeing the warning signs world over: giant storms that take out electricity grids, droughts, record breaking typhoons. These symptoms that tell us that we need to act with urgency to create a different kind of business world that drives prosperity in new ways," he says.

We need to act with a level of urgency to create a different kind of business world that drives prosperity in new ways

People argue that there have always had mega storms, but the fact is, their frequency and magnitude has changed. Situations like the floods in Thailand in 2011 which threw the supply chains of many auto majors out of gear are a grim reminder that the impact on business in increasingly direct and global. "We are seeing signals not only environmentally but also in the price of doing business. Commodity prices are fundamentally rising and it doesn't matter where you live or what kind of economy your country has. You are dealing with the same pressures," says Winston.

The discussion has long moved from whether it makes business sense to tackle these challenges to how to manage business effectively in light of these challenges. It's time for business to fundamentally change how it operates, make the 'big pivot'. Solving the world's biggest challenges profitably needs to become the core pursuit of business. Be it water, energy or transport, there are huge multi-trillion dollar markets that are at play.

Companies often ask why they should take it upon themselves to set sustainable or science based goals if it's not mandatory or if others aren't doing it. "That's always a challenge with sustainability," Winston says. "If you think it's a disadvantage, then its harder to take it on. My point is that adopting sustainability is an advantage. It gives you a lower cost structure, more resilience and variability in costs." Of course it's not without its costs, but we have to look at where we want to be and work back from there.

Winston suggests companies take a good hard look at their impact and footprint, not only of their own organisations but up and down the value chain. Once they see where they stand on these parameters, they can understand their impact, risks as well as opportunities for innovation. There are a few companies that have started taking baby steps towards doing this. Unilever is one such company where CEO Paul Polman understands the scale of these pressures and is focused on growing the company through the lens of sustainability. Closer home, Infosys and GE India have done a significant amount of work in this area. "The basic thing is to find ways of using less resources and doing it efficiently and quickly. There are various strategies you can adopt, but the starting point is for companies not to think of this as philanthropy," says Winston, who has created a website bigpivot.com where companies list their goals and share their progress.

There are three key pivots: vision, valuation and partner pivot, which provide a framework for companies to work their way through this change. Countries like India and China come with their own set of challenges with more people joining the burgeoning middle class everyday. As parts of the world get richer, there will be challenges as to what kind of lifestyle they want to adopt. While you can't stop people from persuing a middle class lifestyle, there is also the question whether 9 billion people can live the way the western world does. The solution lies in leapfrogging technology, something that's already happened in other areas like communication.

"As more people enter the energy system in rural India and China, provide renewable energy to them. You don't have to block progress but it can be done more mindfully. You can decouple growth from materials," says Winston. Here, he expects emerging economies to take the lead in building new models of commerce – from scratch even in some cases. After all, it can be an amazing opportunity – not to mention a highly profitable one – for those willing to try.

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5 POINTS TO PONDER

5 SET SUSTAINABILITY GOALS BASED ON SCIENCE

4 BUSINESS NEEDS TO CREATE PROSPERITY IN NEW WAYS

3 DECOUPLE MATERIALS FROM GROWTH

2 SUSTAINABILITY ISN'T PHILANTHROPY BUT A GREAT BUSINESS STRATEGY

1 THIS WILL LEAVE YOU BETTER POISED TO TAKE ADVANTAGE OF FUTURE OPPORTUNITIES

The Times of India, Delhi dated August 10, 2014

Delhi's 1st solar tariff this month

Citizens Can Now Produce Electricity, Govt To Also Notify Net Meter Rules

Jayashree Nandi & Richi Verma

New Delhi: Delhi Electricity Regulatory Commission will finally notify regulations for net metering and the city's first solar tariff this month. It means that private players and individuals can set up rooftop solar systems and supply energy generated to the grid.

All transactions to and fro from the grid will be metered. The policy gives individuals the freedom to tap as much solar power as they require. Experts, however, say the solar tariff needs to provide more financial incentives if it is to become successful.

"The net metering proposal is at an advanced stage. It's likely to be released this month. It's meant for anyone who plans to supply renewable energy to the grid. For large private players, the tariff will be decided on a case-by-case basis depending on capital cost and the solar regulations we have. For individuals, the energy they produce can offset their electricity bills," said DERC chairperson P D Sudhakar.

The timing of the solar policy announcement will coincide with the net metering, and will explore the option of incentives. "We are looking at various options specific to the type of consumer. We may offer subsidies in lower slabs for initial capital expenditure and more incentives to large customers like DMRC or malls. The policy is still being finalized and is new for us, too," said a senior official.

Another proposal to subsidize solar rooftop projects is by way of the ministry of new and renewable energy waiving loan interest rates. "For instance, if the individual takes a loan of 80% of the cost at 12% interest, 9% interest will be paid by MNRE. The individual will still have to pay a substantial amount in instalments," said a source.

Experts said that financial incentives are critical to make solar power generation a success story in Delhi. "Why should people install solar PV systems if there is no financial incentive for them? They will build an extra floor instead. Only 30% subsidy from the ministry is not attractive. DERC has the opportunity to set an example for state governments by providing preferential tariff to individuals," Abhishek Pratap, senior campaigner for renewable energy at Greenpeace India, said. Pratap added the tariff in Gujarat is favourable for rooftop solar power generation which has picked up in that state.

Discoms, meanwhile, seem optimistic. Sources at Tata Power Delhi are looking forward to the net metering notification and a tariff-based incentive for solar PVs. "We have already commissioned a study funded by United States Trade and Development Agency to assess what could be the feed in tariff for rooftop solar. As of now there is no tariff for solar rooftop only for solar. We are hoping that the economics of this is finalized," said a senior official. They will start procuring net meters once the notification is made.

HERE'S HOW YOU CAN GENERATE POWER AT HOME

THINGS TO CHECK IF YOU'RE PLANNING TO INSTALL A SOLAR PHOTO-VOLTAIC SYSTEM

- Roof is strong and stable enough to bear weight of panels
- Roof has no or minimal shadow from other houses or trees
- South-facing orientation assured
- Buy panels from Ministry of New and Renewable Energy-listed companies
- Ask company if it will provide maintenance
- MNRE will provide 30% subsidy on your installation

WHAT CAPACITY SOLAR PANELS DO YOU NEED?	1 BHK | 2.5-3.5kW	2 BHK: 5.5-6.5kW	3 BHK: More than 10kW
	Cost: ₹4 LAKH	Cost: ₹7 LAKH	Cost: ₹12 LAKH

DELHI'S ROOFTOP SOLAR POLICY

- Focused on government buildings
- PWD to take up projects
- No clarity on whether there will be preferential tariff for individuals
- NDMC area to be developed as Solar City with help from MNRE

ONGOING SOLAR PROJECTS

- Fifteen solar plants installed at Tata Power Delhi's licence area with total capacity of 1.65MW
- Twelve solar plants in NDMC area by Tata Power Delhi
- Twelve 1kW-capacity standalone battery backup solar lighting system in portacabin-type office of government housing RWA
- Projects at four schools—Sarvodaya Kanya Vidyalayas in Mayur Vihar Phase I, Mangolpuri, Jwalapuri and RK Puram Sec-12
- Projects at four government hospitals—Deen Dayal Upadhyay Hospital, Jag Pravesh Chandra Hospital, Satyawadi Raja Harishchandra Hospital, Chacha Nehru Bal Chikitsalaya

City's largest solar plant at Dwarka Sec 21 Metro stn

TIMES NEWS NETWORK

New Delhi: Delhi Metro on Monday started operations on the largest rooftop solar plant in the city. The project, launched by urban development minister M Venkaiah Naidu, is a first-of-its-kind initiative through which Delhi Metro Rail Corporation will produce power for all operations at Dwarka Sector 21 station.

Naidu switched on the new, solar-powered lights on platform 1 of Sector-21 station remotely from Metro Bhawan on Barakhamba Road.

The plant,which can generate up to 500kW every day, is the largest of its kind in NCR under the Renewable Energy Service model and is a result of cooperation between DMRC and Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) through 'ComSolar', a project that supports commercialization of solar energy in India.

"This initiative to meet DMRC's power requirements is an all-out effort to promote renewable energy. The need of the hour is to promote renewable energy as 80% of our fossil fuel is used to meet our power needs and it's not a very happy situation," Naidu said. Also present were Union minister of state for power, coal and renewable energy Piyush Goyal and DMRC managing director Mangu Singh.

As per the model for the roof-top plant, the developer invests, owns and operates the plant while DMRC buys the electricity. DMRC will install three more rooftop plants at Anand Vihar ISBT and Pragati Maidan stations, and the DMRC residential complex at Pushp Vihar with a joint peak generation capacity of 25kW.

Goyal, meanwhile, lauded the contribution of E Sreedharan in the launch of Metro services in the country.

DMRC also promised to generate 20MW of solar power in the next three years.

The Times of India, Delhi dated August 12, 2014

Sponge-like plastic to soak up CO_2, reduce pollution

London: Scientists have developed a sponge-like plastic that soaks carbon dioxide (CO2) and might ease our transition from polluting fossil fuels towards new energy sources, such as hydrogen. The material—a relative of the plastics used in food containers—could play a role in cutting CO2 emissions, and could also be integrated into power plant smokestacks in the future.

"The key point is that this polymer is stable, it's cheap, and it adsorbs CO2 extremely well. It's geared towards function in a real-world environment," said Andrew Cooper from the University of Liverpool in the UK. Cooper and his team intend the adsorbent, a microporous organic polymer, for an application that could lead to reduced pollution. The new material would be a part of an emerging technology called an integrated gasification combined cycle (IGCC), which can convert fossil fuels into hydrogen gas. PTI

The Times of India, Delhi dated August 13, 2014

As 'dirty' factories thrive, toxins spread across city

NGO Studies 51 Industrial Areas, 18 Found Flouting Norms

TIMES NEWS NETWORK

New Delhi: Industrial pollution is not restricted to the peripheries but is silently causing damage inside the city. On the Edge, a study by an NGO, has identified 18 potential pollution hotspots in the capital.

Unsafe, and often unorganized, methods of e-waste dismantling, dyeing, lead acid battery recycling, cathode-ray tube (CRT) dismantling and other processes have given rise to health and environmental concerns, says the Toxics Link study. Delhi has more than 1.2 lakh industries and 29 industrial estates, necessitating a watch over acid and lead fumes, as well as groundwater and air pollution.

The researchers assessed 51 industrial areas on five parameters—industrial processes, chemicals used, emissions, disposal technique and occupational health hazard. They found that 18 of them were flouting the norms.

Prem Nagar in Mandoli houses 110 lead acid battery recycling units. There is no understanding of pollution control, claims the report. "Most units in this area rely on coal-to-fuel crude furnaces and recover lead in a crude manner. While recycling, battery acid is dumped on the ground, waste pile or into a waterbody. As lead plates are melted, lead ash settles in the surroundings, collects on clothing or is inhaled by workers," it says.

A large amount of waste at Seelampur, where e-waste is recycled, comes from the US and Europe. Workshops emit lead fumes and the melted lead solder often finds its way to nearby drains. "The working conditions are appalling with poorly ventilated rooms and no safety measures," says the report about Moti Nagar, which recycles CFL devices.

The landfills at Ghazipur, Bhalswa and Okhla are responsible for toxic leachate contamination of air and groundwater. The Najafgarh drain basin, which includes Wazirpur, Naraina, Anand Parbat and Okhla industrial areas, is the largest surface drain joining Yamuna and contributes to over 50% of the wastewater discharged into the river. Wazirpur is one of the worst managed areas with 1,200 small units, a majority of which are involved in steel pickling.

The report also highlights the need to address toxic smoke and dust from open dumping, burning and spilling of chemicals. "In 2011, MCD was supposed to close down around 22,000 units, but not much seems to have been done" said Satish Sinha of Toxics Link.

SPOTS OF BOTHER

1. Samaypur | **Activities:** Dyeing, plastic moulding
CONCERNS: Acid fumes, chemical discharge

2. Badli | Plastic moulding, steel utensils
CONCERNS: Unhygienic conditions

3. Libaspur | Plastic moulding, lead acid battery recycling
CONCERNS: Acid fumes

4. Bhalswa | Dumping MSW (municipal solid waste), medical waste
CONCERNS: Untreated leachate causing groundwater pollution

5. Ranhola village | Plastic grinding, textile waxing
CONCERNS: Waste water diverted to river

6. Najafgarh | Dyeing, printing, plastic moulding, pharmaceuticals
CONCERNS: Untreated waste water released into drains

7. Moti Nagar | CFL trading & assembly
CONCERNS: Mercury emissions

8. Anand Parbat | Plastic moulding, metal work
CONCERNS: Air pollution from coal chimneys

9. Wazirpur | Steel work, metal polishing
CONCERNS: Acid fumes, water contamination

10. Mayapuri | Dye casting, textiles, printing, automobile dismantling
CONCERNS: Spent oil discharge

11. Mustafabad | Plastic grinding, CFL recycling, e-waste dismantling
CONCERNS: Leaks from CRT (cathode ray tube) regunning

12. Mandoli | Metal works (copper, zinc, aluminium, brass), plastic extrusion, e-waste processing, lead acid battery recycling
CONCERNS: Spent acid with lead particles disposed of in nearby drains

13. Old Seelampur and Shashtri Park | E-waste dismantling and dyeing
CONCERNS: Lead fumes

14. Yamuna Vihar and Gokulpuri | CRT regunning, automobile repairing
CONCERNS: Lead dust exposure

15. Ghazipur | Dumping of butcher waste and MSW
CONCERNS: Groundwater contamination, air pollution

16. Okhla | Textile, plastic moulding, printing press
CONCERNS: Groundwater contamination

The Times of India, Delhi dated August 13, 2014

Cleanliness drive cosmetic, city a mess

Reality Check By TOI Reveals Overflowing Garbage Dumps And Debris

Photos: Sanjay Sekhri

An overflowing garbage dump at Turkman Gate

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New Delhi: Will the city be free from garbage and dirt by August 15? A week-long sanitation and cleanliness drive was launched with much fanfare by the administration a few days back, but a reality check reveals that it has remained sporadic. While the civic agencies are making tall claims publicly, the enormity of the task rules out making any significant difference by the end of the exercise.

TOI took a round of the city. Overflowing garbage dumps and waste and debris along the roads were a common sight though the corporations claim to be removing 30% more of garbage daily as part of the drive.

Hardly 500m away from the north and south corporations' headquarters, Civic Centre, on Jawahar Lal Nehru Marg, at Turkman Gate, one found a huge garbage dump with the waste spilling on to the road. "It is a shame that the corporation has failed to clean the area visible from its own office. In the past one month, hardly anyone has been seen cleaning the area," said Ramesh Babbar, a local trader.

Across the city, on CV Raman Road, outside New Friends Colony, there is a huge garbage pile. The residents have complained to the corporation several times since during peak traffic hours, this stretch becomes a bottleneck. "Never are the bins placed on the road clean. From the dhalao, garbage spills on to the road," complained Madhu Arora, a resident living just across the road.

Similarly, in Lajpat Nagar-I's B-block, just outside a government school, garbage has remained dumped for days. Several complaints have been made but to no avail. "From the school principal to parents, everyone has complained about the heap of garbage outside the school. It is very difficult for the girls to pass through this stretch. The stench is overpowering, especially during monsoon, and diseases are rampant in the area. The lane is narrow and the parked cars and garbage ensure that it remains blocked," said area councillor Abhishek Dutt.

Waste along the roads is a common site at New Friend's Colony

Across the river, near Laxmi Nagar's V3S mall, the story is no different. There is a dhalao virtually in the middle of the road and the garbage spills out, making the space even narrower. With massive gridlocks during peak traffic hours, it is a nightmare for commuters. "With shops and a mall nearby, there are cars parked on the road, and the dhalao only adds to the chaos. It's a breeding ground for mosquitoes, and for pedestrians, it's a nightmare. But the corporation isn't doing anything despite several complaints," said BS Vohra of East Delhi RWA's Federation.

But corporation officials are patting themselves on the back. A rally of school children was organized by North Delhi Municipal Corporation for City Zone on Tuesday to create awareness about sanitation, health and hygiene. "From every zone we are removing around 150 metric tonnes more than usual. On an average, Delhi produces 7000 metric tonne of waste everyday, but for the past one week, we are removing more than 9000 metric tonnes," said Mukesh Yadav, south corporation's spokesperson.

The Times of India, Delhi dated August 14, 2014

Modi to miss UN's climate meet in NY

Indrani Bagchi & Vishwa Mohan | TNN

New Delhi: Prime Minister Narendra Modi will miss a climate change summit, being spearheaded by the UN, on September 23 in New York.

KEEPING AWAY

Modi is scheduled to be in New York to deliver his first address to the UN General Assembly later that week before flying down to Washington to meet US President Barack Obama. However, Obama is expected to speak at the climate change summit where almost 70 heads of states are expected.

The summit will be hosted by the UN secretary general Ban Ki-moon for generating "political momentum on climate action" ahead of the December climate deal negotiations in Lima, Peru. Climate change negotiations have moved up in Obama administration's priorities, as the world works towards a final global climate deal in Paris in 2015.

Modi has a keen interest in addressing climate change, having even authored a book on it. But several considerations went into India's decision to keep him away. First, the summit is not connected with the negotiations on climate change, except to build a political momentum at the highest levels before the key negotiations first in Lima and then Paris. Second, if Modi is present on September 23, he would have nothing to do until September 30 when he meets Obama.

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

The Times of India, Delhi dated August 16, 2014

PM's slogan: Zero defect, zero effect

Asks Industries Not To Compromise On Quality Of Products, Environment

Vishwa.Mohan@timesgroup.com

The PM addresses the nation from Red Fort on Independence Day on Friday. **For steps to download & use Alive app, see P 2**

New Delhi: At a time when India's "right to grow" pitch caused concern among environmentalists sceptical about New Delhi's commitment to cut greenhouse gas emissions, Prime Minister Narendra Modi's "zero defect and zero effect" remark on Friday came as a clear message that the country would not compromise on its goal of environmental protection.

Asking small and big industrialists and youth not to compromise on quality of products and environment, Modi said, "Don't compromise on two points—first zero defect and second zero effect".

"Let's think about making our product which has 'zero defect' so that it does not come back (get rejected) from the world market and 'zero effect' so that the manufacturing does not have an adverse effect on our environment", said the PM while delivering his maiden I-Day speech.

While exhorting industry to make India the manufacturing hub of the world, Modi said, "I am confident that we would achieve our goals if we carry our dream of manufacturing sector with zero defect and zero effect". His remark gives a clear message that the country will move on its low-carbon and sustainable growth trajectory while adopting clean technology and renewable energy in a big way.

It also assumes significance ahead of the New York climate summit which is being organized by the UN on September 23 to give a political momentum to the climate change negotiations before coming out with a global climate deal in Paris next year.

Reacting to Modi's remark, UN Intergovernmental Panel on Climate Change (IPCC) chief, RK Pachauri said, "It has been quite clear right from the beginning that the PM is very much concerned about climate change. The remark shows his commitment to achieve the twin goals of development and environmental protection. Even his remark and overemphasis on cleanliness has direct bearing on environment".

Asked how the country would go for this amid varied challenges on different fronts, Pachauri told the **TOI** that India would do this by making it a "people's movement". He said, "Government alone can't do this. We have to tell the people that both development and environment protection can go together if we adopt the right approach".

The Times of India, Delhi dated August 21, 2014

'Tap treated waste or pay'

TIMES NEWS NETWORK

New Delhi: If government agencies continue to use groundwater for non-potable purposes like irrigation, horticulture, in cooling plants, for washing purposes in railways and transport, they might end up facing legal action by Delhi Jal Board.

In a workshop held on Wednesday to promote use of treated effluent for non-potable uses, the DJB CEO asked agencies like Delhi Metro Rail Corporation, PWD, CPWD, Pragati Power Corporation Limited, NTPC, the three corporations and the railways to submit their plans for using treated effluent within a month, failing which the water utility would initiate legal action on banning further use of groundwater.

At present, DJB is supplying 142 million gallons per day of treated effluent to government agencies and has another 200MGD to provide, except that government agencies have not yet shown

RAP FROM DJB

an interest in taking up the offer. "The treated effluent can easily be used for horticulture purposes in parks, gardens, water bodies etc. Right now, agencies are either using treated water or ground water. In view of the severe shortage of water in the capital, this is sheer waste of time, energy and money. The current water demand in Delhi is 1,080 MGD and DJB is able to supply 840-850 of filtered water. If we substitute water being used for non-potable purposes with treated effluent, we might actually be able to meet the gap of 240 MGD," said senior DJB officials.

DJB has set up a one MGD waste water treatment plant in the CWG Village. A 10 million liter per day tertiary treatment plant is being set up at Okhla as a pilot project from which treated effluent will be used for construction in Okhla and bus washing at DTC depots. Another 40 MGD project under PPP is being looked at where effluent will be treated at a tertiary level.

'Use rainwater in big properties'

New Delhi: Delhi Jal Board told the high court on Wednesday about the efforts to encourage rainwater harvesting. This includes making it mandatory for properties of 500 sq m or more and raising tariff of violators.

DJB, represented by advocate Sumeet Pushkarna, submitted the "incentives and disincentives" given by it to promote RWH before a bench, which is hearing a plea seeking that RWH be made mandatory for buildings here.

The note was submitted after HC asked if there was a policy for implementing RWH in Delhi. It cited provisions in the Delhi Water and Sewer Tariff and Metering Regulations of 2012 for giving rebate to those who implement RWH and waste-water recycling systems/measures. TNN

The Times of India, Delhi dated August 23, 2014

'Climate change is real and happening in India'

New Delhi: Ahead of the UN climate summit which is to be organized in New York on September 23 to give a political push to future negotiations, Indian scientists on Friday emphasized the need to take urgent steps to address the issue of climate change that has potential to adversely affect the country.

Taking stock of climate change and its implications for India, scientists from JNU, IIT Delhi, IARI and UCAS Bangalore highlighted country-specific points in the recent IPCC reports covering agriculture production, increase in sea-level, floods, droughts and cyclones, carbon dioxide content in air, temperature change and associated heat wave and melting of Himalayan glaciers.

"Climate change is real and happening in India. These issues have a direct impact on our daily lives and it is necessary that we start taking measures to address the issue," said V Rajamani of School of Environmental Science, JNU. It was noted during discussions that the years 1983-2012 was probably the warmest 30 years in the last 1,400 years. TNN

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

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