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Switch to Circular Economy Soon

With global business houses like Unilever, Renault, Philips and Cisco joining the Ellen MacArthur Foundation the idea of Circular Economy has gained critical momentum. The 'take-make-dispose' model is slowly but surely making way for 'made-to-be-made-again' model. Businesses are expecting to reap huge gains by driving costs down.

By **Benedict Paramanand**

Mining companies no longer want to sell minerals to producers. Instead, they want to lease it to them. Washing machine companies want to lease machines to communities and not sell single pieces to consumers. Cars and scooters are being designed in such a way that most of the parts can last a life time and more.

Welcome to the 'Circular Economy' model that could soon replace the 'take-make-dispose' model. A good beginning is being made with the World Economic Forum taking it up this year. The serious talk is about why it is inevitable to shift from a throughput and linear manufacturing model to a restorative model where almost nothing goes waste. This model is the ultimate form of biomimicry – nothing that Nature produces goes waste.

Inside

This is not some fashionable concept touted by nerdy economists any more. Already, Unilever, Cisco, Kingfisher, Philips and Renault have joined Ellen MacArthur Foundation (education) which is promoting the circular economy model globally. This group represents key industry players working to pilot and test circular economy practices at scale. Their industry expertise reach across information technology, retail, healthcare, consumer lifestyle, lighting, automotive and FMCG.

The circular economy is enabled by disruptive information technology and the design of materials and products to flow in effective cycles and at high quality – 'made to be made again'. It promises billions of dollars of materials cost savings every year.

Conditions are ripe today for the circular economy model to spread widely and quickly – upward trending and volatile materials and energy prices, difficult credit conditions are going to be the key value driver for the coming decades. A recent book titled 'A New Dynamic: Effective Business in a Circular Economy' features leading thinkers and practitioners in the field. It offers a comprehensive overview of the model, business case studies, the performance economy, history and the entrepreneurial opportunities.

Why Circular Economy

Paul Polman, CEO of Unilever, the newest member to join the Ellen MacArthur foundation said: "The concept of a circular economy promises a way out. Here products do not quickly become waste, but are reused to extract their maximum value before safely and productively returning to the biosphere. Most importantly for business leaders, such an economy can deliver growth. Innovative product designers and business leaders are already venturing into this space."

Ken Webster, an expert in Circuler Economy told **SustainabilityNext** in an interview that resource companies such as mining, steel, metals are realizing that they are losing their precious molecule even as prices are going up. "The old saying was - today's products are tomorrow's resources at yesterday's prices. For 100 years price of metals has been falling and it was silly to keep it. Now the challenge is, it's going to be more expensive and so they are exploring different business models." Webster is head of learning at Ellen foundation and is that author of the influential book 'Sense and Sustainability: Educating for a Low Carbon World'

Unilever believes it has the potential to pilot circularity across global fast-moving supply chains, and with two billion consumers worldwide using a Unilever product each day, the opportunity to test it at scale is clear. The foundation outlined a $ $700 billion opportunity for the FMCG sector in its second economic report in 2013.

The authors note: "The consumer goods industry is starting to embrace the potential of the circular model. For durables, the benefits of reuse have been more widely demonstrated. For consumer goods – such as food and beverages or apparel and their packaging – which are short-lived and often transformed during use, the economic benefits of a circular design seem initially harder to capture. Yet recovering part of the US $2.6 trillion of material value lost each year is a huge opportunity for fast-moving consumer goods companies and Unilever will prove to be an important pathfinder within the industry."

Towards Circular Economy - Toolkit

A collaboration between the World Economic Forum, the Ellen MacArthur Foundation and McKinsey & Company, the third volume of 'Towards Circular Economy' (January 2014) aims to reconcile the goal of scaling a circular model with the reality of a global economy and complex multi-tier supply chains. The key objective is to propose a very specific joint plan of action for industry leaders. In its previous reports, the Foundation focused on the economic and business benefits of such a circular model of development.

Q & A with Ken Webster

It's not a passing fad

How fast is the concept of 'Circular Economy' catching up?

In India, people are interested in keeping gold or silver locked up so they stop being productive. But why not retain some form of ownership with other metals like chromium or manganese?

There is a public building in Holland where every part is rented, the whole structure, all the windows, doors, it's designed for 20 years and when it gets taken down, it will return to the manufacturers or agents who have made the deal. Thomas Reilly is the architect who has put this together. In Europe, pay by wash washing machines for domestic customers is coming back because people like Bosch want to experiment with extended life they can get out of it.

One of Renault's most profitable factories' in the world is the refurbishment factory. And some make a great deal of money on refurbishing engines and gear boxes. So it's how to get those things back, how to recover things.

Our foundation is funded privately by companies not by governments. We convene people, we put up workshops, and we get in touch with the experts. We are working with McKinsey, who are our knowledge partners. They have three offices now which work on circular economy as a specialization. Accenture is working on it too. Two of the big consultancies are already finding ways to add value to firms. The big boys and girls are in there. It's not a passing fad.

How does the concept work for different sectors?

If you are in the business of fast moving consumer goods, it's difficult for you because it's a short cycle. You need to have reverse logistics. If you are in a specialist equipment area, heavy earth moving machines, aero engines or things with real durability, different business models are possible. For example Michelin leases their tires to the US military, they don't sell them. Rolls Royce will never sell you an engine for an airplane; they only sell power by the hour. It really depends on your product but there is a big interest in products and services and even changing products into services – like Philips could price its products depending on how much lumens you consume per month.

The other big thing is ICT (information, communication and technology) is really driving the ability to share assets or to exploit assets better like car rentals are much easier when you do it that way. So it's interesting how we will use assets in the future.

Confederation of Indian Industry

RESPONSIBLE GROWTH

A BUSINESS IMPERATIVE

26 February 2014, Crystal Room, Taj Mahal Palace Hotel, Colaba, Mumbai

Responsible business implies a way of doing business that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments. Innovation, efficiency and sustainability together are fundamental to responsible business.

The 1st edition of the Conference, aims to take a fresh look in shaping and leveraging the challenges faced by Industry in pursuing its journey to strike a balance between economic growth and social and environmental concerns, as based on the following sub-themes:

- **Responsible Growth for Future**
- **Responsible Growth and Environment – Need for new business planning**
- **Emerging Social Implications of Responsible Growth**
- **Making a Business Case for Sustainability**

Chief Guest	:	**Mr Arun Maira** Member, Planning Commission, Government of India
Special Address	:	**Mr Suresh Prabhu** Politician and Leader
Welcome Address	:	**Mr R Mukundan** Chairman, CII WR and Managing Director, Tata Chemicals Ltd
Conference Chairman	:	**Mr Pradeep Banerjee** Executive Director - Supply Chain, Hindustan Unilever Ltd

Who should attend?

- CEOs
- Presidents & Vice Presidents
- Directors
- Heads of Manufacturing
- Enviornmental Specialists
- Senior Executives
- Partners
- Sustainability Managers
- Consultants and Others

Speakers Invited

Dr Pragnya Ram
Aditya Birla Management Corporation Pvt Ltd

Mr H N Daruwalla
Godrej & Boyce Mfg Co Ltd

Ms Beroz Gazdar
Mahindra & Mahindra Ltd

Mr S R Lohokare
National Peroxide Ltd

Mr Pankaj Baliga
Tata Consultancy Services Ltd

Mr Satish Jamdar
Blue Star Ltd

Mr Ashok B Chakraborty
Indian Institute of Corporate Affairs

Mr Anand Padmanabhan
Wipro Ltd

Mr Shankar Venkateswaran
Tata Sustainability Group

Dr Yogendra Saxena
Tata Power

Mr Rohan Parikh
Infosys Technologies

Mr Subrata Mukherji
ICICI Foundation For Inclusive Growth

Mr K N Rao
ACC Ltd

Mr Yogesh Chandra
Coca Cola Foundation

Mr Sanjay Harlalka
Hindustan Unilever

Mr Saurabh Yadav
Suzlon Energy Ltd

Ms Bhavna Prasad
WWF Ltd

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- A discount of 10 % is available on nominations of 3 delegates and above
- Inclusive of Service Tax and Education Cess

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CONFERENCE ON SMART SUSTAINABLE CITIES

Confederation of Indian Industry

Conference Focus Areas:

- Sustainable Infrastructure Development
- Energy Efficiency & Green Power
- Waste Management

18 February 2014,
Hotel Radisson, Noida

Noida and Greater Noida Authority have agreed to partner CII for this initiative.

Some of the key confirmed speakers are:

- Mr Rama Raman, Chairman & CEO, Noida Authority and Greater Noida Authority
- Dr Praveen Kumar, Commissioner - Municipal Corporation, Gurgaon
- Dr Prem C Jain, Chairman, Indian Green Building Council & Chairman, AECOM India
- Mr V Suresh, Director, Hiranandani Palace Gardens Pvt Ltd & Formed CMD, HUDCO
- Mr VidurBharadwaj, Director, The 3C Company
- Mr Jens Burgtorf, Director, Indo-German Energy Programme, Deutsche GesellschaftfürInternationaleZusammenarbeit (GIZ)
- Mr MukundVasudevan, Managing Director, Pentair Water India Pvt Ltd
- Mr K S V Nair, Managing Director, Environ Technologies
- Mr Ashwini Aggarwal, Director, Applied Materials India Private Ltd
- Mr Prabhpreet S Shah, ExecutiveDirector, Creative Group

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International News

Plastic Bank in Peru

Plastic pollution is quite literally an ever-growing problem. Waste bottles, bags and packaging can be seen littering most urban environments – but unlike other forms of waste, they can take anything from 50 to 1,000,000 years to decompose. In addition, millions of small pieces of plastic flotsam are swirling around in Pacific Trash Vortex, damaging marine life. Such waste is a particular problem in poverty-stricken areas, where environmental regulations tend to be lax.

A new scheme aims to encourage people living in impoverished regions to tackle the problem. Plastic collected from homes or common littering sites, such as beaches, will be exchangeable at a 'Plastic Bank' for goods, 3D printed products (made from the plastic the bank recycles) and micro-finance loans. A pilot is being launched in Lima, Peru (where only 2% of plastic waste gets recycled), with plans to open Plastic Banks worldwide if it is successful.

Plastic Bank is a business: it will generate profit by selling on the plastic it recycles. But the founders seem confident that it will have a positive social impact too. "Global social and environmental crises are linked, and so are the solutions", says David Katz, CEO of Plastic Bank. "The crisis of waste plastics is an industrial problem that demands a transformative solution, like taking ocean-bound plastic waste and assigning it value."

The exchange rate for waste – which may feature subsidies to assist people in need – will be established during next year's pilot programme. Once set-up, Plastic Bank's computerized exchange platform will track the impact the bank is having on each member's standard of living. Shaun Frankson, Co-founder of Plastic Bank, explains that they hope the social improvement aspect of the recycled waste– which they term 'social plastic' – will increase its value to the end consumer (in the same manner as fair trade products).

"The Plastic Bank idea needs to be focused on careful instruction and training as to how sorting should be done", says Thomas Nosker, a plastics expert from Rutgers University.

IKEA Designs New Tents

IKEA and the UN are collaborating on the design and distribution of temporary shelters for those displaced by conflict and climate. Twenty-five of the flat-pack shelters are currently being tested in the Dollo Ado refugee camp in Ethiopia, home to over 190,000 refugees. A further twelve shelters will also be deployed to Lebanon, which hosts 500,000 Syrian refugees.

The 188 square foot shelters are made from rigid plastic panels attached to a lightweight frame. They can be assembled in about four hours by two people, and will comfortably sleep five. A 4,28W solar panel mounted on the roof can power a light after dark or charge a mobile phone. And they can be disassembled, moved, and reassembled at a different site.

As the shelters last for three years they could be a good alternative to canvas tents which, according to the UNCHR, currently house around 10% of the world's refugee

population – some of whom could be dislocated from their homes for as many as twelve years.

The IKEA Foundation is investing €3.4 million in the project, and is also offering its expertise in flat-packing and logistics. UNCHR brings 60 years of relief work experience that influences the design, the technical requirements and the choice of where to field test the prototypes.

Trials have shown that locally-sourced PET bottles can be recycled into the plastic panels, which could bring down the price tag for each shelter – estimated to be over €5,000 – making them far more expensive than a tent.

Developing World Overtake in e-waste

E- waste from China, India, Brazil and South Africa are expected to surge 33 percent between 2012 and 2017. In just three years, the annual volume of e-waste will rise to 36.7 million tons in developing nations compared to 28.6 million tons in the US, Europe, Japan and Australia combined, according to a report released by the United Nation's initiative StEp Initiative formed to tackle the enormous problem. China and the US lead the world on e-waste. Based on volume, China leads with 11.1 million tons, followed by the US at 10 million tons.

Kenya Takes Lead in E-waste Recycling

Kenya recently launched a large-scale e-waste recycling facility which many see as a model for waste collection and recycling in developing countries. Jointly developed by Kenya's government, NGOs, IT companies and e-waste recyclers, it creates a business model that ensures responsible recycling of e-waste while creating thousands of jobs.

Shipping containers will be set up at more than 40 collection points in Kenya, each functioning as an independent small business that purchases e-waste from newly trained individual collectors (generally from east Africa).

When a shipping container is full, business owners sell the contents to a central hub where the e-waste is processed into its components. Then they are sold once again, this time back to the technology industry for reuse. Each stage is designed to be profitable for participants, from individual collector to collection point to hub.

19 Countries Form Africa Clean Energy Corridor

19 countries have committed to developing an Africa Clean Energy Corridor to help the continent leap frog to renewable energy in the face of rising energy demand.

Led by the International Renewable Energy Agency (IRENA), stakeholders believe a regional approach can attract the most investment and optimize the renewable energy mix. The corridor will span eastern Africa, from Cairo to Cape Town, where transmission infrastructure is being built to meet growing energy demand.

Currently, Ethiopia hosts the continent's biggest wind farm and has plans for 800 megawatts of wind and one gigawatt of geothermal. The Corbetti Project is a new model for developing large scale power projects in Africa and is part of the Power Africa initiative President Obama announced last summer.

Financial Inclusion Report

Give Banking License to Mobile Money Companies

The **Nachiket Mor** committee report on financial inclusion has suggested that mobile wallet and mobile money companies be given the status of banks. This could revolutionize access to capital, which could have a cascading effect and increase the volume of banking activities. It has provided a larger framework to roll out the financial inclusion plan. Citing the example of Kenya, Mr. Mor said 50 percent of its GDP currently goes through mobile phones. Other recommendations include:

- Banking system should be a referee, not the captain.
- Adhaar, Bharat Broadband, mobile usage to speed up financial inclusion.
- Take one step at a time, don't waste time planning big things.
- Today banks are doing everything. We need banks to specialize in one thing to do it better and banks should be incentivized for doing that. Example: Agriculture and SME lending.
- Rejig priority sector lending by giving banks choice of choosing the sector instead of asking all banks to do all kinds of priority lending.
- Banks should be allowed to freely price farm loans based on risk. Incentivize banks that take on high risk priority lending.
- Loan waivers distort credit culture in rural areas. The waiver amount can be directly given to farmers instead of asking the banks to bear it.
- Interest subsidies should be directly given to farmers, not link it to the base rate of banks.

Infosys Has Largest Area as LEED Platinum-certified Office Space

With two of its buildings in Hyderabad awarded the highest LEED rating recently Infosys has the largest LEED Platinum-certified office space in India. It now has ten buildings covering 2.7 million square feet of space. It is second in ranking in the corporate category.

Infosys said it constructed these buildings with a holistic approach to sustainability, concentrating on areas such as water efficiency and harvesting, energy and atmosphere, materials and resources, and indoor environmental quality.

Infosys has taken big strides in the last five years to become sustainable in its operations. The company is working to reduce its per capita electricity consumption by 50 percent from 2007- 2008 levels and to source all its electricity needs from renewable resources by the end of 2017. Between 2007 and 2013, Infosys reduced its per capita electricity consumption by 40 percent. The company's per capita water consumption declined by 34 percent and GHG emissions dropped by 15.3 percent, during the same period. The company says it encourages employees to endorse sustainable practices that reduce their daily consumption of resources.

Save Red Panda, Save North East

Protecting animals like Tigers and Red Panda not only prevents their extinction, its impact is felt on the habitat they thrive in. Tata Housing has embarked on protecting the rich and diverse eco-system of the Indian North East, home to red panda, as part of its sustainability strategy.

Red panda is the indicator of the health of temperate forests. A healthy red panda population indicates undisturbed temperate forest with oak, conifers and rhododendron interspersed with bamboo. Red panda is found in four states of India – Sikkim, Arunachal Pradesh, Meghalaya and West Bengal. Major threat to red panda survival is poaching for its skin and also capturing of cubs for pets. Red panda shares its habitat with globally threatened species like musk deer, gaur, clouded leopard, common leopard and satyr among others. Through its tie up with World Wildlife Fund, Tata Housing helps in implementing management plans to secure the red panda habitat. Indirectly, this helps in the conservation to other species as well.

The good news is that strict protection accorded to wildlife by the local community after the formation of the Community Conserved Areas (CCA) seems to have had a beneficial effect on animal populations, including the rare red panda in a few zones.

Tata Housing's sustainability strategy

Tata Housing believes that the primary purpose of business is to improve the quality of life of people in the communities in which it operates. It has adopted triple bottom line (TPL) approach to business and endeavours towards equilibrium of people, planet and profit. Says Brotin Banerjee MD & CEO, Tata Housing in his sustainability report: "We have become one of the top real estate players in India in the residential segment and this has been possible because of our adherence to sustainability principles across the value chain of the organisation – a creative corporate culture, ethics and governance beyond compliance, customer centricity, operational excellence in green construction, employee engagement, treating suppliers as partners and shared growth with community and environment."

The company's integration of its sustainability strategy and business strategy is reflected in its comprehensive Sustainability Vision, which is: "We will build sustainability into everything we do so that our profitable growth helps reduce inequality and rejuvenates the environment." The company has mapped its value chain, identified the social and environmental dimensions of its competitive context and leveraged its core-competencies in

addressing those elements strategically from a long-term perspective.

Its strategy has been to build green homes using alternative technologies and alternative materials which are sustainable. It has adopted greener construction technologies like Pre-cast, Reinforced Hollow Concrete Blocks (RCB) and Mivan. It has mapped its carbon footprint across the company and has developed a roadmap for carbon footprint reduction as well as carbon abatement for the next 5 years. It is doing exceedingly well in achieving its carbon abatement targets. It has initiated steps to measurethe water footprint too which will help us develop plans to reduce water consumption.

The company engages closely with communities around the company's project sites, focusing on affirmative action for SC and STs, vocational skill development in construction related trades, educational development, environmental sustainability and community infrastructure development.

Coping with government direction on CSR spending

The company has been following a unique CSR budgeting policy which stipulates spending of 1 % of the net profit of the preceding year in CSR at the corporate level. In addition to that, six rupees per square foot in case of each premium and luxury projects and four rupees per square foot in case of each affordable and value housing projects are spent towards CSR initiatives. Together, the company spends more than 3 % of its net profit of the preceding year in CSR.

Achievements in the last 5 years and plans for the next 5 years

All the Tata Housing projects are Green buildings either pre-certified or certified with USGBC/IGBC certification. Tata Housing is one of the major contributors in achieving 1.51 Billion square feet of IGBC certified green building footprint in India. It has over 55.4 million square feet of registered green building footprint, of which 8.8 million square feet have already been certified.

In the year 2010-11, the company developed the roadmap for carbon footprint reduction for 5 years and carrying out carbon footprint assessment of all our projects since 2009-10. In the year 2012-13, it achieved 22% reduction in the carbon footprint against the target of 10%.

Rainwater harvesting and/or ground water recharging and water efficient systems have been designed and implemented in all of the projects. Water efficiency measures like use of gypsum plaster, use of curing compounds and use of treated waste water have been implemented which has resulted in conservation of fresh water by about 19,184 KL in the year- 2012-13.

In the year 2013-14, the company initiated the water footprint mapping and plan to develop a roadmap to reduce consumption of water. Energy audits of the office buildings also have been initiated and plan to introduce energy conservation activities at all offices across India. The company also conducts energy audits at sites to review construction activities and minimize the energy use in operations.

During the year 2012-13 the company spent INR 25 million in the focused CSR intervention areas viz. Tata Affirmative Action, Vocational Skill & Educational Development, Environmental Sustainability, Local Community Infrastructure Development and Employee Volunteering.

Challenges of achieving sustainability targets in India in the housing sector

The housing construction sector has a major environmental impact as it is the main user of primary resources like steel, cement, sand etc; a major user of energy and producer of carbon emissions; and creates large amounts of waste. The challenge to manage natural resources is using recycled and alternative materials in lieu of virgin materials like fly ash, gypsum plaster, which also help reduce carbon emissions. Some companies are using innovative ideas like use of pervious concrete or use of bio-enzymes which reduces use of cement for roads for road development; use of steel couplers instead of conventional overlap; reduce concrete consumption.

Why do Green Homes cost more

Green homes cost 5% to1 5% more because the capital cost of project increases with the use of alternative technologies and alternative materials which are required for designing and building Green Buildings. The alternative technologies used in green homes like renewable energy sources - solar and wind energy solutions, hybrid DG sets, low UV glass, insulation materials, energy efficient lighting & equipments, water efficient faucets & fixtures have more capital cost than the conventional. The use of alternative materials like AAC & Porotherm blocks in place of red bricks increase the capital cost of green homes.

Affordable Homes Strategy

In order to minimize the cost of construction Tata Housing has uses various low cost construction technologies. In our affordable home projects in Ahmedabad we have used Reinforced Hollow Concrete Blocks (RCB) technology which reduces usage of materials as well as labour cost since it does not require specialized labour. Another project in Bangalore uses Pre-cast technology where there is reduction in time of construction from 4 years to 2.5 years, thereby saving of interest cost by 50% and reduction in total cost of the project by more than 5%. It gives improved quality of construction and minimal wastage of materials and better inventory management with timely delivery.

Tata Housing's 48 % of the product mix consists of Value Homes (ShubhGriha) and Affordable Homes (New Haven), catering to the housing needs of the lower-half of the

pyramid, a cause immensely dear to the philosophy of the company. There is always a huge opportunity lost in selling value homes at a cheaper price to customers who cannot afford housing at the prevailing market rates. Yet Tata Housing has been serving the marginalised groups, who have less income through its ShubhGriha offerings.

In spite of selling at a low price, the affordable housing and values home are designed in accordance to Green Building norms as prescribed by IGBC with a Silver rating. While serving the low income community, we ensure that the projects are environmentally and economically sustainable.

We Need Energy Equivalent of Green Revolution

Harish Hande, **one of India's leading energy entrepreneurs, is founder of SELCO, a social enterprise which provides sustainable energy services to the rural poor, and winner of the Ashden Outstanding Achievement Award for Sustainable Energy.**

By **Martin Wright**

The Government drew precisely the wrong conclusions from the blackouts [last summer]. It said, effectively, "There are so many power failures that we've obviously got to ramp up the main grid as quickly as possible, and that means more coal and nuclear power. We haven't got time to wait for renewables…"

You can't treat a cancer with a Band-Aid

It's a massive misconception of what's really needed. It's like they're looking for a quick fix: a Band-Aid for cancer. But the best treatment for an unreliable grid isn't to pour yet more resources into it. More importantly, this isn't going to reach the 400-500 million people who have never had any electricity.

Spend money on decentralized energy to help the poor up, not fences to keep them out

There's mounting social unsustainability in rural areas: a growing sense of expectation and frustration. Just look at the conflict between the mining companies and tribal people. These companies have three or four fences surrounding their operations, because they don't know when or whether the tribals will attack. Which is a ridiculous situation to find yourself in! Instead of spending so much money on security, why don't we create equal opportunities for those people? And decentralized energy can bring those opportunities to their door. People don't realize the direct impact it can have. For 400 million people, decentralized energy makes economic, environmental and social sense today.

You don't have to be poor…

The middle class can enjoy the benefits of super-efficient hybrid minigrids, whether it's solar-wind, or solar-micro hydro, or biogas or biomass... They can bring reliable power to people suffering long hours of electricity cuts or voltage fluctuations.

Two things I'd do tomorrow to boost sustainable energy

First, I'd remove the taxes on solar and other renewables. Taxing renewables while subsidizing kerosene completely distorts the market and discriminates against the poor, who

> *For four hundred million Indians, decentralized energy makes sense today.*

want to replace polluting and dangerous kerosene with clean, safe solar.

Second, I'd outlaw inefficient appliances. For example, we have fans rated from one to five stars, and there's a huge difference between them: from 35W for the most efficient five star model to 80W for the one star. Why allow inefficient ones? They drain power from the grid, and they can't be powered by small-scale solar. The efficient ones do the job of keeping you cool just as well…

We need the energy equivalent of the agricultural revolution

Over the last few decades, we've seen a lot of effort by local technical institutes to create an 'ecosystem for agriculture', for example by training and equipping people on everything from repairing water pumps and motor windings through to selling fertilizers, and so on.

Exactly the same revolution needs to take place, through the same network of institutions, for decentralized energy. We need to train people in servicing and repairing solar, pico hydro [i.e. water power up to 5 KW], biogas and biomass installations. There are 600-plus technical institutes in the rural areas: just think what sort of an ecosystem that could create! Once you have a body of resourceful people out there, trained in these energy technologies, you will have pressure building up to push these products and services out through the villages, and that creates entrepreneurship. This is how the agriculture revolution took place in the 1970s, which resulted in India achieving self-sufficiency in food. We need to apply the same passion and rigor now to look at our real power requirements and decentralize our energy.

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http://www.forumforthefuture.org/greenfutures/articles/we-need-energy-equivalent-agricultural-revolution-says-harish-hande#sthash.XOkb8zbr.dpuf

Krya for the Eco-Conscious Soul

By **Vaani Anand**
(eco.alternatives11@gmail.com)

Preeti Sukumaran & Srinivas Krishnamurthy of Krya

If you think that detergents are found only on supermarket shelves, then be prepared for a clean, green surprise. It grows on trees and has been cleaning clothes since the time of the Buddha! Welcome to the world of Krya Detergent Powder (www.krya.in) which is completely organic, vegan and cruelty-free and their world of sustainable goodies.

Krya in Sanskrit means 'Action'. More specifically, the wiki says "Krya refers to a "completed action". Taking sustainability from thought to action are a young couple Preethi Sukumaran and Srinivas Krishnaswamy, both with IIM backgrounds. After doing the corporate circuit, they decided to kick their jobs and start Krya. "We felt there was surely a better way to make money. We started thinking: What would we do if we were to have our own company?" says Preethi.

Preethi has been a brand manager with Britannia, Henkel and Marico and Srinivas had worked with Johnson and Johnson in various capacities. After a few months of research they came up with a few nifty ideas for everyday products like detergent, dish-wash, mosquito repellents, hair and body powders; all made from plants. Soon they were living in a fragrant, surprisingly clean home and their hair and skin glowed with new energy. They realized that plant based products properly prepared and used, were not just good for the planet but also great for their skin, hair, clothes, dishes and homes. They started with a focus on an important mission to eliminate toxic substances at home and the development of alternatives to these synthetic or chemical products. And thus started Krya in May of 2010.

No Fragrance

Preethi and Srinivas design their products to fit easily into an urban dweller's busy life, to help make an easy transition to a more sustainable life. Preethi asserts "I design a product for a person like me. I don't get taken in by labels you see. I don't believe in making a product merely looking or smelling nice so I don't put in any fragrances". Krya is fanatical about using only organic, pure ingredients and they go the full length to be


Soapnut tree

ethical in every aspect of their business.

The Krya Product stable currently has the Krya Detergent Powder (400g and 100g packs), Krya Dishwash powder (350g and 100g) and Krya face wash powder. They soon plan to expand their product portfolio and enter the Skin, Hair and Home segments. Their product pricing is premium and Preethi is not apologetic about it. “Our products are superior and do a world of good. Anyone wanting to leave a better world for their children and think not just for today but also tomorrow will love our products”.

The magic ingredient which gives the soapberry (Soapnut) its halo is saponin, found in the fleshy outer part of the fruit. The pericarp of the soapberries contains saponins produce foaming solutions in water with a surfactant property which can used for cleaning.

Krya ‘manufacture’ their detergent by getting the friendly neighborhood village ladies to pluck the ripe fruits from the tree at Harvest time. After removing the seed (which is stored for re-planting), the pericarps are taken to a giant stone platform which has been specially built on the farm. The farm is in a dry, fiercely hot part of Andhra Pradesh. The fruits dry slowly under the sun for 3 days in the sun until they become brittle.

They are then cleaned and taken into the ‘factory’ where they are powdered in a large mill (similar to the flour mill that makes the atta then they mix natural, organic Calcium Carbonate to the powder. Calcium Carbonate, also called Limestone, helps keep our dried fruit powder dry, so that it remains a powder, and easy to use. And that completes the manufacturing. No heavy machines are used that are energy intensive. The process also does not release harmful vapors. No water is used in the ‘manufacturing’. The water that your washing machine used to wash clothes can be sent to your garden and is 100% natural and safe. The remaining detergent can be composted in the earth.

The packaging of Krya is made with completely recyclable and even printed with chemical-free ink. They do not test their products on animals and are vegan.

Alternative way of life

Is there a good demand for an organic detergent in India? “There are two sets of people. One that can be made aware and another that is blissfully unaware and is using chemicals recklessly. We don’t look at selling our detergent. We look at moving to an alternate way of life” emphasizes Preethi.

Krya is in the process of setting up a ‘manufacturing unit’ near Siruseri in Tamil Nadu. They don’t play for short stakes but for the long game. Wanting to be the P & G of Sustainability is not an easy journey. Though they don’t intend being a small company, they do not want to compromise on certain boundaries that they have set for themselves. For instance they are sure that they will never export their product. Exporting is against the very grain of sustainability where you spend precious fossil fuel to transport goods.

Grow local and use local is a sustainable mantra that Krya wants to live by. So they work within their boundaries of not wanting to make any liquid products or being vegan and hence do not use milk or honey or any animal derivatives in any of their products. “What sets us apart is that our customers perceive us as being inherently good and trust us with sustainability. We didn’t design our product to be different but to be sustainable. We are a sticky company and our customers don’t forget us easily” avers Preethi.

Running a company with such maniacal focus on values within the boundaries that define who you are is definitely a difficult task. In the corporate world, where customer preferences dictate sales and market conditions and other factors impact scalability, it may seem an uphill task for Krya to move up the growth curve. But a clear differentiation that it offers is the passion of the promoters and the success that their products have already received.

Do your daily morning krya and move to more sustainable options in your daily choices!

http://krya.in/

Taking Sustainability Thinking to Schools

Anurag Behar, Chief Sustainability Officer at Wipro presenting a trophy to the 2013 prize winners in Bangalore. Standing next to him is P.S.Narayan, Vice President and Head - Sustainability

Wipro's Earthian initiative reinforces its belief that if change is to be accelerated, it should start from schools. Three years in operation since 2011, Earthian has so far involved thousands of schools across India in not just talking about the merits of sustainable living, but through inter-school competition, it is able to engage students through intense projects.

Anurag Behar, Chief Sustainability Officer at Wipro and CEO for Azim Premji Foundation & Vice Chancellor, Azim Premji University says: "We started thinking of a program by which we can engage with young people and that's what the Earthian is about. It's been quite an extraordinary journey; it's our deep commitment to move towards better education and a sustainable world."

> *The model uses the 'Theater-in-Education' approach to internalize sustainability learning.*

In the first edition, nearly 1000 schools and colleges participated in writing a critical paper on one among different sustainability themes. Twenty entries are selected for a more comprehensive engagement to run over a three year cycle.

The second edition in 2012 went international with schools in Europe and the Americas taking part. The third edition took up water as its theme. The teams in over 600 schools were required to carry out a series of interesting activities around the measurement of water demand and water quality. Drawing from their empirical observations, the teams then got down to writing a paper that blended actual data with conceptual articulation on the challenges of water and its inter-linkages with the other dimensions of climate change, agriculture and biodiversity.

Designed jointly with a network of its partners, Earthian involves students and teachers in a varied set of learning activities: measuring the ecological footprint of school campuses, outbound learning about forest ecology and communities, place-based learning. The model uses the 'Theater-in-Education' approach to internalize sustainability learning.

Wipro has also launched an internship platform for the winning colleges that seeks to develop meaningful summer internship projects in areas like water, forests and product life-cycle analysis. It intends to expand this program in scope and scale.

Earthian tries to break new ground through experiential learning by tapping into the passion and interest of Wipro employees who volunteer as mentors for schools in their areas. It hopes Earthian creates a quiet revolution, ushering in changes in thinking and mindsets as well as in actions and behaviors.

10 Innovations Poised to Change Manufacturing

NASA, USAID, Nike and the U.S. State Department are participating in an international accelerator program for social good. The program is dedicated to shifting the environmental, economic and social impact of manufacturing through the year 2020 – cleaning up products we use every day, and introducing new composites to take the place of more expensive and less ecologically sensitive materials.

QMilk

Turns spoiled milk into bio-textile fabric that competes with cotton. The German company has started manufacturing prototypes for new antimicrobial, flame-resistant fibers made out of milk. The super soft fiber is 100% biodegradable, created only with renewable resources, produces zero waste and can be used to make clothing and home textiles. You can even eat the fiber, although it doesn't taste very good.

Geckskin

Adhesives inspired by the footpads of lizards, but without the residue. The Boston-based startup has designed the product to attach and release from surfaces repeatedly, without losing any of its adhesive properties. Think of it as a very powerful, velcro-like Scotch tape that never loses its strength. Potential applications include the home appliance sector and the military. Geckskin is still in its early-stages, several years away from putting anything out on the market.

Barktex

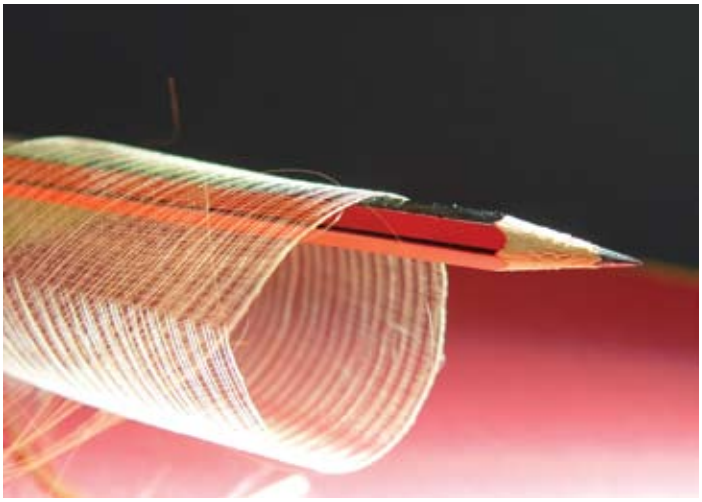
Transforming tree bark into leather-like materials, this agro-forestry company is the brainchild of a husband and wife team looking to scale their business. The process involves stripping the bark off of trees, soaking those strips in water and then, through a composite process, transforming the strips into a material that doubles as leather or upholstery. The project is designed to be low-energy compliant, ecologically safe and provides jobs for hundreds of farmers in Uganda. The goal is to take this model to other parts of Africa and the developing world.

Blue Flower

A textile initiative aimed at supporting and empowering at-risk women and reducing the environmental impact of manufacturing. The company's founder, fashion designer Eileen Fisher, wants to set up sustainable value chains across the world. The initiative is designed to help poor communities develop low-impact bio-fibers sourced from second-hand clothing, replacing viscose, an artificial textile treated with toxic chemicals.

Ambercycle

Harnesses engineered enzymes to degrade plastic bottles, such as soda bottles, making plastic recycling both profitable and sustainable. The system lowers the cost of recycling and uses organic processes with no carbon footprint. This also allows producers to re-use plastics and remove them from landfills.



Artificial Bee Silk

Bio-synthetic silk produced through the fermentation of honey bee cocoon silk. The process, created by Australia's national science agency, CSIRO, uses genetically engineered bacteria to reproduce highly-flexible "webs," which can be used for weaving and knitting, or formed into sponges, transparent films or nanofibers.

Benign by Design

Uses data collection and analysis to understand the impact of textiles. The Benign concept is intended to show businesses exactly how textile wear leads to fiber pollution, and offer solutions for controlling emissions. Benign has created a trade-off analysis system that scientifically selects the most cost-effective material with the smallest eco-impact. Dr. Mark Anthony Browne, who came up with the idea as a University of California post-doctoral fellow, says his program "will lead to low-cost effective fabrics that emit fewer and less toxic fibers...throughout their life cycle."

Ecovative

Completely biodegradable packing and insulation using mushroom materials. The product is designed to serve as a replacement for polystyrene, a synthetic polymer used to produce environmentally unfriendly products such as styrofoam cups and packing material. Ecovative materials "can be composted in low temperature home compost piles, and they will break down naturally," explains design director Sam Harrington. Other uses for the material extend to sandals, surfboards and insulation.

CRAiLAR

Making flax competitive in cost and comfort with cotton, Crailer is publicly traded on the Canadian stock market. In addition to its wide availability around the world, flax also uses far less water, pesticides and land mass than cotton, resulting in lower emissions. CRAiLAR's process uses 97% less of the life-cycle water needed to produce a kilogram of cotton. The final product is a soft, natural fiber that is nearly indistinguishable from cotton, without the high price.

Biocouture

Creates sustainable material from microbes, transforming them into haute couture. The concept was created by fashion designer Suzanne Lee, who envisions microbial cellulose as the catalyst for her innovative approach. Microbial cellulose can be grown in a bucket and used to create biodegradable home wares as well as fashion accessories. And, in keeping with her DIY philosophy, Lee also plans to use Biocouture to share recipes and educational tools.

Source: http://mashable.com/2013/10/06/sustainable-launch-forum/

Abetting Employee Financial Security

Sustainability strategy of a company is not all about carbon footprint or ecological impact on future generations. A holistic and progressive employee engagement is also an integral part. Employee engagement so far has focussed on learning and development, physical safety, mental health and even a pinch of spirituality thrown in.

What about financial security of employees? Should the financial transaction between the employer and employee end with transfer of salary to an employee's account? There's a lot a company can do if it decides to help an employee manage her finances better. Firstly, the CEO and the HR need to realize that a sense of financial security goes a long way in greater loyalty to the company.

In today's hyper-consumption driven culture, EMIs are found to be one of the biggest stress factors affecting productivity and morale of employees. Even if some companies have placed a ceiling on the extent of EMI an employee can pay from his salary, it is difficult to enforce because of the proliferation of various cards. It may be a good idea for companies to make it mandatory that employees declare their financial health status, as in, ratio of debt to saving to investments once a quarter. Whether it is impinging on the privacy of an employee is another debate.

A good beginning is being made with a few companies proactively helping employees manage their savings that earn better returns. H N Shrinivas, chief human resource officer of Indian Hotels says: "When companies have to make more from less, a medium to long-lasting opportunity for companies to support employees is to help them plan savings starting in the early years of their careers and also look for similar ways to augment value for themselves from new market-driven options".

> *While many companies focus on physical health and wellbeing of employees, very few companies facilitate a process with credible agencies to support associates to focus on financial health and security*

B. Sudhakar, chief human resource officer at Tata Projects, employing over four thousand employees, says: "While many companies focus on physical health and wellbeing of employees, very few companies facilitate a process with credible agencies to support associates to focus on financial health and security. This, I am sure will also go a long way in the retention of employees."

While resources-stretched companies cannot take this responsibility on directly, outsourcing is an option. For example, Alpa Shah trains corporate employees on mutual funds and related products, covering over fifteen thousand employees in six large companies, and 20 percent of them got enrolled in saving-schemes and investment for the first time! Based on this success, she now runs her own enterprise to cover more employees. She says: "These products accrue 12 percent to 15 percent return while banks and insurance providers give only 7 to 9."

While advising on debt instruments and mutual funds is easy, getting employees to invest in equity is tougher because of higher risk. Musa Kaiser who just started training 200 people in such financial-products has half of them invest for the first time. Musa suggests managements to seriously consider educational programs in personal finance for employees. For employees, as success coach Rita Davenport says: "Money isn't everything...but it ranks right up there with oxygen."

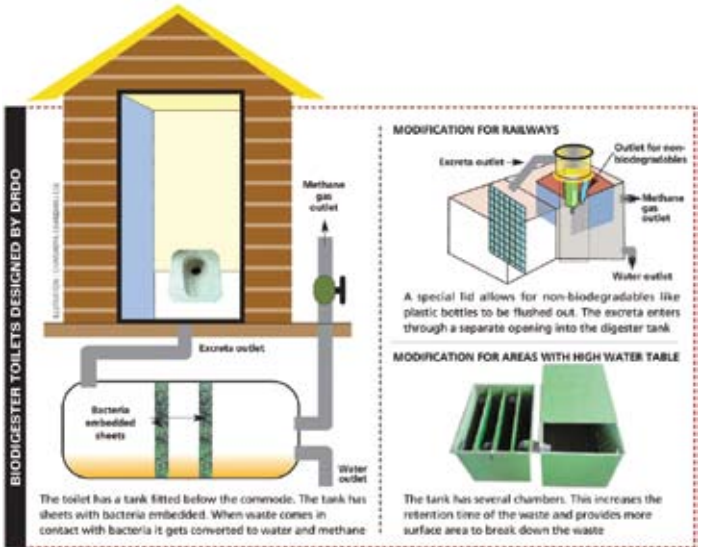
Affordable Toilets on the Go

Stink at railway stations may be bearable when Indian Railways installs DRDO's Bio-Digester quickly. The technology is 100 percent maintenance-free and allows complete elimination of pathogens without requiring the night soil to be disposed through sewage line and septic tank.

Since the need for septic tanks and sewage lines has been eliminated in this technology, the bio-toilets can be installed and ready for use within just 48 hours, compared to two months for the conventional toilets and at 70 percent cheaper. While a regular toilet costs around Rs.100,000, a bio-toilet can be put up at just Rs.30,000.

The bio-digester requires only an initial one-time charging with anaerobic bacterial inoculums if it is in regular use. The bio-degradation of the night soil leads to generation of bio-gas which can be utilized for cooking. The clean odourless water extracted after bio-degradation can be recycled for irrigation.

Currently, DRDO bio-toilets are being widely utilized by the defence forces in remote locations. The Indian Railways



Namita Banka (middle) campaigning against open defecation

signed a memorandum of understanding with the DRDO in 2010 to develop a bio-toilet for use in railway coaches to improve the environment in and around the railway infrastructure.

The bio-digester is a spin-off technology product developed by scientists from the DRDE, Gwalior, and Defence Research Laboratory (DRL), Tezpur, to treat biological wastes of soldiers serving in the high altitudes of Ladakh and Siachen.

Since 2012, Indian Railways has started to transform all on-board toilets into bio-toilets. With an average 18 million people travelling by train every day, Indian Railways is a lifeline but its toilets are in a pitiful state.

Banka Bio-loos

Namita Banka, founder and CEO of COWE (Confederation of Women Entrepreneurs), Hyderabad, started Banka Bio-loo which is a women-led organization engaged in promoting and developing innovative environment-friendly products and services for human waste management. Its main focus is to deal with the issue of open defecation.

It manufactures ELOO (Eco loo) using bio-digester technology from DRDO. Banka BioLoo was the first to commercialize this technology, which could well meet the sanitation needs of millions of Indians who have no access to sanitation.

She won the Cartier Women's Initiative Awards 2013 for her initiative.

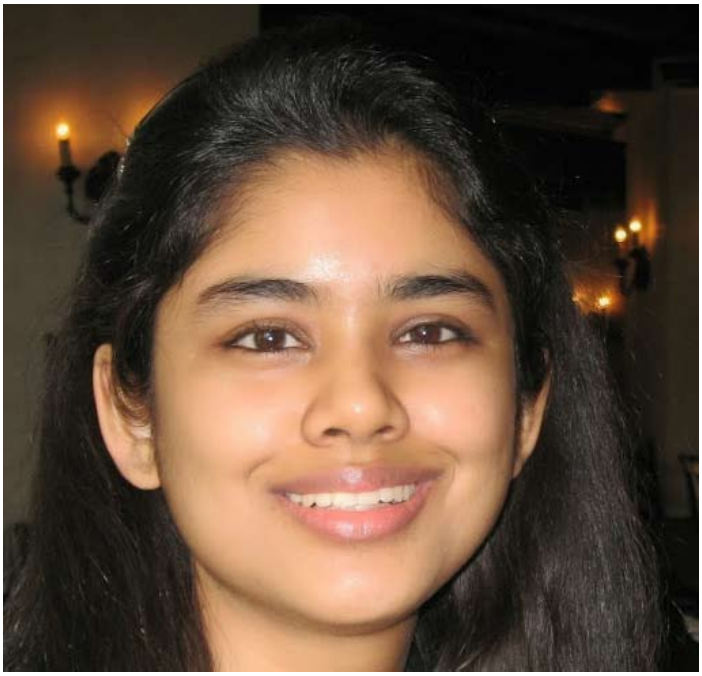
Google Impact Award for bio-loo promoter in villages

Sanchaita Gajapati Raju, 30, won the inaugural Google Global Impact Challenge India Award by polling the highest number of online votes for her vision of bringing clean drinking water and sanitation to villages in coastal Andhra Pradesh. Sanchaita set up her NGO, Social Awareness Newer Alternatives (SANA) in 2011.

With Rs 3 crore award money she plans to set up drinking water plants and bio-toilets in 10 villages in the districts of East Godavari and Vishakhapatnam in coastal Andhra. She aims at providing 54 million liters of clean drinking water in the next 3 years and establishing 20 toilets in each of the 10 villages.

Since its inception SANA has implemented two drinking water projects, one at a school in East Delhi and another at N Chamavaram village in East Godavari, Andhra Pradesh.

At Chamavaram, the villagers have been made stakeholders in the project and a nominal fee is charged from the users for the water they consume.



SANA has trained the locals in maintaining the solar powered water treatment plant, which draws water from the ground and purifies it to WHO (World Health Organization) standards for drinking purposes. The money collected from the villagers is used to pay the workers, who take care of repair and maintenance of the plant.

09.02.2050 - The End of the Age of Oil?

By Jonathan Porrit

Here is an amazing statistic: oil production last year was down to around 4 million barrels a day – from a high of 76 million barrels a day in 2017. The age of oil is well and truly over – and, happily for all of us, civilization hasn't collapsed!

I was in my late teens in 2017, but can still recall the most apocalyptic tone in which people used to speculate about the so-called 'peak oil' moment – the year in which we took more crude oil out of the ground than in any other. The answer it turned out was 2017, and the amount was 76 million barrels a day. While the world did not grind to a halt after this, few countries were properly prepared for the profound changes that ending their dependence on oil entailed – despite having had decades to get themselves ready.

Oil's last gasp

The peak oil moment might have come a lot earlier were it not for the last – gasp efforts of the oil companies as they took advantage of very high oil prices to go after the oil that would otherwise have been way beyond their reach, geologically and economically – especially from reservoirs in very deep water or very harsh conditions in places like the Arctic.

There were also very unconventional sources of oil and gas that added another 10 to 15 million barrels a day, such as tar sands – a kind of cloggy, bituminous fuel that had to be heated up before it could be extracted. Billions of dollars were spent on developing Canada's tar sands between 2005 and 20018, despite endless warnings this was sheer madness: a barrel of oil from tar sands emitted at least 50% more CO2 than a conventional barrel – at a time when we were already trying to reduce CO2 emissions per barrel. Investors in the tar sands got horribly burned in 2018. After the Emergency Report of 2016 from the Intergovernmental Panel on Climate Change, the USA grudgingly agreed to follow Europe's example in setting very tough carbon standards for liquid fuels – which the oil extracted from the tar sands simply couldn't meet – primarily because of the impact of weather-related disasters on public opinion. The Canadian economy nose-dived, so great was its dependence on oil exports to the USA and it didn't properly recover for another five years.

There was no going back when a year later a disastrous release of waste water from one of the largest tar sands operations, contaminated with mercury, lead and other toxic elements killed off almost every living creature along the 160 kilometer stretch of the Athabasca River. It's taken the Athabasca a full 30 years to recover.

The next 30 years after the peak oil moment was a story of managed retreat away from oil. Of the 4 million barrels a day used in 2048, almost all was used in aviation, shipping and the production of high-value chemicals. In 2017, there were 708 oil refineries operating worldwide; today, there are just 11 – two in the USA, two in China, one each in Brazil, the Netherlands, Indonesia and India and three in the Middle East (Abu Dhabi, Saudi Arabia and Iraq).

We shouldn't beat ourselves too much here. Oil was cheap and easy to get (until the turn of the century) and it was energy-dense, delivering a lot of energy for not much volume. It was also incredibly versatile, providing not just liquid fuels but also the basic feedstock for the entire chemical industry from plastic to pharmaceuticals'- even though no more than five percent of the oil was used for these purposes. So it was highly addictive – as a former US President, George W Bush once acknowledged.

Today's algae-based materials are now so cheap and useful that they have displaced almost all of the oil we once used for plastics, pharmaceuticals, paints, lubricants and so on. They still can't quite provide everything we need – hence the continuing requirement for small amounts of high-quality crude oil. Although for

A mega Bio-refinery in the Philippines, 2025

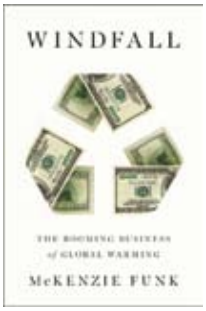
how much longer, I have no idea. As my daily Green Stream bulletins from the New Scientist keeps reminding me the pace of innovation is as intense today as it's ever been. Give us another 20 years and I suspect we will be down to a few hundred thousand barrels a day from those super-efficient oil wells in Iraq. And that will be it.

The Philippines: A case study

Here is a case study that my researchers have unearthed. Back in 2015 the Philippines was a very poor country, made all the poorer by unconstrained population growth. So punitive was the cost of importing that the Philippines government took the bold decision in that year to become the world's first all-renewable country.

It already had a lot of hydro and geothermal power to which it then added wind and solar on a vast scale. But the real breakthrough came with the revolution in the use of biomass. As a predominantly agricultural country the Philippines can call on huge amounts of forestry and agricultural wastes from the production of rice, sugar, maize and coconuts. With major support from the Asian Development Bank investment in bio-refineries and biomass power stations (using rice hulls and straw and maize cobs and stalks, coconut husks and the like as furls) took off in the early 2020s.

Excerpts published with permission.



Windfall: The Booming Business of Global Warming

By **McKenzie Funk**

Penguin Press HC, 2014 (An Amazon Best Book of the Month, January 2014)

In addition to having one of the cooler author names, Funk has written one of the more fascinating accounts of the coming economic impact of climate change. Rather than exploring the science or politics of an alarmingly warming world (a la An Inconvenient Truth), the author has focused exclusively on the economics and opportunism developing around climate change. The result is part eco-thriller, part adventure story, part investigative exposé. There's a wildly speculative and entrepreneurial game being played out there by some forward-thinking risk takers. Not a hand-wringer among them, these are the gamblers who see profit where others see doom.

Impressively researched over six years, Windfall takes us to the front lines: to the deck of a Canadian battleship, where the author blasts a machine gun into the ice cap; to formerly frozen Siberian lands, which investors envision as future mega-farms; to the Sudan, Greenland, Wall Street, and beyond. Like a mashup of Michael Lewis and Mark Twain, Funk is an intrepid investigator and a lively, smart writer. From eco hedge funds to dam building to desalination plants, he shows how climate change is creating new opportunities and a potential boon for cowboy entrepreneurs. This is the rare book that's both important and highly readable.

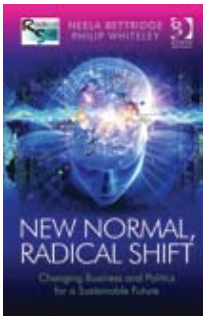
Making Sustainability Stick

By **Kevin Wilheim**

FT Press, 2014

This book provides the blueprint for implementation, breaking down barriers, and the steps required to integrate sustainability successfully into any business. It is laid out in easily digestible chapters, with action steps backed up from interviews with sustainability thought leaders, case studies, and the real life experience of the author, as well as over 40 interviews with CSR and Sustainability Directors at various companies on how to "get things done" based on their successes and temporary setbacks.

It provides the step-by-step roadmap for implementing sustainability successfully and focuses on "how" companies can realize the benefits of sustainability by engaging the head, heart, and hands of their employees. Also included is a checklist for implementation and tips on how to regain momentum or get "un-stuck" at the end of each chapter as well as additional helpful resources and exercises to overcome the most common barriers towards implementation.



New Normal, Radical Shift

Changing Business and Politics for a Sustainable Future

By **Neela Bettridge** and **Philip Whiteley**
Gower publications, 2013

Our traditional ways of looking at economics, business and politics are not fit for purpose. The causes of the recent crisis were behavioral and international, but our measures are superficial and financial, recorded at a national or company level. This is combined with a fervent quest for endless 'growth', no matter how unsustainable.

Theory has to catch up with reality. Many books chart different courses for economic and business management but New Normal, Radical Shift is different. Using examples from international organizations around the world, it analyses not only the business model that failed, but challenges wider economic and political beliefs that employees' interests always conflict with those of managers and business owners.

Neela Bettridge and Philip Whiteley argue that the right messages about good practice in business struggle to be heard, not because of indifference or inertia, but because dysfunctional philosophies are still supported not only within business and business schools, but also within political circles and by trade unions, NGOs and others campaigning for workers' rights.

The central belief of the 'old normal' is that profits are made by exploiting workers and the environment. In this book the authors' arguments - all supported by exemplary case studies -demonstrate that this belief is false, opening up enormous possibilities in a 'new normal' of enhanced working lives, environmental protection and business success.

Energy Efficiency

The Definitive Guide to the Cheapest, Cleanest, Fastest Source of Energy

By **Steven Fawkes**
Gower Publications, 2013

Energy risk has reappeared on the corporate and social agenda with a bang and the complexity of the issues has increased many-fold since the days of the last great wave of concern following the oil crises of the 1970s. Steven Fawkes' Energy Efficiency is a comprehensive guide for managers and policy-makers to the fundamental questions underpinning energy-efficiency and our responses to it. The result is the most comprehensive review to-date of the barriers and opportunities associated with improving energy efficiency. Clearly written and erudite, Steven Fawkes addresses every aspect of energy efficiency, including the huge and vitally important untapped potential offered by effective energy management and the application of existing technology. He also identifies barriers, such as the rebound effect and how they can be mitigated and he provides a comprehensive review of innovative energy efficiency financing options. This book is a 'must read' for anyone with an interest in energy supply and demand reduction.

The New Brand Spirit

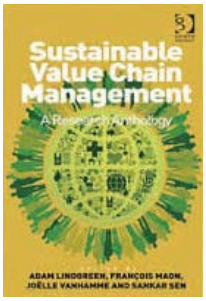
How Communicating Sustainability Builds Brands, Reputations and Profits

By **Christian Conrad** and **Marjorie Ellis Thompson**
Gower Publications, 2013.

Effective sustainability communication can deliver business value. Get it wrong, however, and the reputational damage will be costly. Stakeholders, and the general public as well as activists, are unforgiving of companies whose products, services, business practices or culture fall short of their socially responsible rhetoric.

Based on close to one hundred in-depth interviews with leading experts, Christian Conrad and Marjorie Thompson's The New Brand Spirit helps corporate communications and marketing professionals tackle this conundrum by providing a first-hand view of eight distinct and relevant stakeholder perspectives. Nineteen comprehensive and well-researched best practice cases from sustainability leaders like IBM, Unilever, Marks & Spencer and Puma will inspire all those tasked with communicating sustainability with practical and applicable tools and lessons learned.

The result is a book that will enable senior executives, corporate communication professionals and brand managers to decide when, to whom and how to communicate sustainability related messages - and when not to.



Sustainable Value Chain Management - A Research Anthology

Edited by **Adam Lindgreen, François Maon, Joëlle Vanhamme** and **Sankar Sen**
Gower Publications

The way organizations manage their value chain has changed dramatically over the past decade. Today, organizations take account of economic issues, but they also adopt a broader perspective of their purpose including social and environmental issues.

Yet despite its global spread, sustainable value chain management remains an uncertain and poorly defined ambition, with few absolutes. The social and environmental issues that organizations should address easily can be interpreted as including virtually everything. Current literature on the topic seeks to understand the effects and management of initiatives dealing with diversity, human rights, safety, philanthropy, community, and environment. However, the penetration of social and environmental considerations into value chain management is described as ‘desire lacking reality’ thereby making the idea a patchy success.

The objective of this research anthology is to investigate different angles of sustainable value chain management. The book’s 27 chapters fill holes and explore new fields; the chapters are organized in five sections: Sustainable value chains - context, drivers, and barriers; Sustainable value chains - managing activities; Sustainable value chains - managing networks and collaboration; Sustainable value chains - integrative perspectives; and Sustainable value chains - specific sectorial and industry perspectives.

Smart Sustainable Cities

18th February, 2014

www.cii.in

Seminar on Safer and Judicious Use of Agrochemicals and Applications of Green Chemistry

Feb 14, 2014 | Pune

http://www.ficci.com/events

Conference on Energy Management

Feb 25, 2014 | IHC, Silver Oak, India Habitat Centre, New Delhi, India

www.cii.in

Environment, Technology and Sustainable Development: Promises and Challenges in the 21st Century

2nd to 4th March 2014 | Gwalior, Madhya Pradesh, India

http://www.etsd2014.org/

Conference on Corporate Sustainability

6th March 2014 | Hotel ITC Park Sheraton, Chennai

www.cii.in

International Conference on Research and Sustainable Business

8th to 9th March 2014 | IIT Roorkee, Haridwar, Uttarakhand, India

http://www.iitr.ac.in/departments/DM/pages/Index.html

International Conference on "Environmental Earth Sciences: Accomplishments, Plans and Challenges

19th to 22nd March 2014 | Chennai, Tamil Nadu, India

http://www.ic-ees2014.co.in

ISO14001:2004 Environmental Management Systems Auditor/Lead Auditor Training Course

Mar 20-24, 2014 | FICCI, New Delhi

www.ficci.com

International Conference on Mitigation of Climate Change: Law, Policy and Governance

25th to 27th April 2014 | Delhi, India

http://clc.du.ac.in/full-Event.aspx?id=10

Green Landscape Summit 2014

Apr 25 to Apr 26, 2014 | Suzlon One Earth, Pune, Maharashtra, India

www.cii.com