

## **Generating Employment and Boosting the Capital Market by Greening the Economy**

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Amidst worldwide slowdown and credit crunch, both Barack Obama and Gordon Brown are bending backwards to boost employment. Environment offers the greatest opportunity to do so and turn the economy around in the bargain. There is a huge potential for generating wealth and employment by greening the economy. It is going to unleash the biggest innovation in the history of business.

The future of humanity lies in harnessing solar energy. 1% of sunlight received by the earth can meet humanity's demand for power for another 20 years. But to make it happen calls for a 180 degrees shift in our thinking. Green revolution is going to be like no other revolution in history. Biofuels is another area. We don't mean biofuel that competes with food. We are talking about agricultural waste that produces nothing. With right technology, 600 million tonnes of agricultural waste of India, can produce cellulosic ethanol equivalent to 80000 mega watts of power, i.e. 60% of India's installed capacity and create 30 million new jobs. Think of the holistic solution, the shift will provide in solving poverty, rural regeneration, removing imbalances and regenerating the planet. Why not use Doha round for transfer of appropriate technologies for global benefit instead of a haggling platform for race to the bottom in meeting commitments of Kyoto protocol?

The impact of energy crisis is going to be far more pronounced than credit crisis.. Can a portion of the hundreds of billion dollars of government bailout of banks be used to plough into clean and renewable energy? Recognition by markets and policymakers that the only way to achieve sustainability is to speed up innovations and investments in R&D for cleaner fuels and especially solar technology. This will fuel the capital markets and pay itself many times over by creating a world which is not only prosperous but much more equitable, greener, cleaner and sustainable.

Rather than giving huge bailouts to banks and platinum parachutes to those who wrecked the economy, let us spend tax payer's hard earned money on regenerating the planet and creating jobs for our people. The New Apollo Program is a comprehensive economic investment strategy developed by the Apollo Alliance to build America's 21st century clean energy economy and dramatically cut energy bills for families and businesses. It estimates that the investment of \$500 billion over the next 3 years can create more than 5 million high quality green-collar jobs in US.

Let us scale that up for the world. A massive green economic stimulus package like this could even pay for itself in more ways than can be imagined. Human race would need huge amount of energy in decades to come. Oil is incapable of meeting that demand. It can cut down our dependence on fossil fuel. 1% of solar radiation can meet world's entire energy needs right upto 2020. As Thomas Friedman says, "We don't just need a bailout. We need a buildup."

A report released by the U.S. Conference of Mayors says that we can create over 4 million green jobs if we aggressively shift away from traditional fossil fuels toward alternative energy and a significant improvement in energy effort. Another report just released by the Political Economy Research Institute and the Center for American

Progress shows that the U.S. can create two million jobs over two years by investing \$100 billion in a green economic recovery plan. The report also shows that this investment would create four times more jobs than spending the same amount of money within the oil industry.

Green For All, an environmental outfit in US together with its partners are proposing a Clean Energy Corps that includes a revolving loan fund to finance the ambitious retrofitting of the nation's building stock. An investment of less than \$3 billion per year would provide financing and can be expected to create close to 120,000 green jobs a year and 600,000 over five years, while also lowering home heating and electricity bills for homeowners and small businesses.

The biggest stumbling block in inducing capital markets to engage effectively in green issues is the lack of measures for pricing natural wealth. The reason that natural capital has remained off balance sheet is the difficulty in obtaining cost information for the book building process and price discovery. Current turmoil in the market is a challenge to financial analysts and accountants to improve environmental accounting and determine true values of our natural assets.

It is for that reason that last year's environment conference – the 9th World Congress on Environment Management held in Palampur from 30 May –1st June 2008 launched a global human chain to put PROACTIVATE – an eleven point holistic model of growth conceived originally in early 2006 on the world map. The model focuses on pricing and trading natural assets like other goods so that their preservation and not destruction adds value. The launch has helped change a lot of mindsets. Investors worldwide have realized the value of trees, greens, glaciers, forests, lakes, ponds, rivers, hills, mountains and bio-diversity. For instance it has discovered that growing rain forests is infinitely more profitable than destroying them for grazing cattle or selling timber. Canopy Capital, a natural capital fund, has announced guaranteed payments over five years to the Iwokrama International Centre in Guyana in return for rights to their ecosystem. The rain forest reserve is two and a half times the size of London. The Centre manages the rain forest on behalf of the Commonwealth. The proceeds will be used to provide livelihood for the 7,000 indigenous people dependent of the reserve and to help support the conservation of the rainforest.

For far too long our economic growth has been dependent on destroying nature to produce trinkets of questionable value. Why our GDP is measured only in terms of financial capital? Why market capitalization is determined only by the profits from destruction of natural capital? Why should we not embark on the price discovery of each piece of natural capital that we own and use the securities exchange to trade it? Think how our world can be greened if natural assets – lakes, ponds, greens, glaciers and streams are treated as securities and traded like other stock. Holders of these securities would be competing to upgrade them and within years the face of the planet can be changed.

The evidence shows that winning companies are aggressively responding to environmental challenges with a wave of innovations in alternative energy. In India Suzlon, lack lustre company so far, has generated Rs 13700 crores for its promoter Tulsi Tanti through a recent IPO. Wind-turbine companies which had mini-busts in 2000 and 2004 are roaring today. Investor interest is switching to companies that develop the

enzymes which break down plant matter and turn it into fuel. Wind turbines are being developed that ride 10 Km up in the jet stream to capture 100 times as much energy, which is transmitted to Earth on supporting cables. The U.S. military and India are studying the use of solar satellites for producing energy.

“Novozymes, a Danish company, was considered a boring old specialty chemicals company until the enzymes operation was recognized,” says Ronnie Lim, head of sustainable investments research at Morley, a fund management group.

Brazil is already meeting 40% of its transportation requirements from ethanol. Bio fuels can be produced without sacrificing land for food crops. India’s 600 million tonne agricultural waste can generate equivalent of 80,000 mega watts of electricity, ie 60% of its installed capacity, and empower the rural India by creating 30 million new jobs. Radical advances in energy conservation are taking shape. Hybrid cars, solar panels, windmills, ethanol plants, nuclear fission, desalination, biofuels, organic farming, precision farming and bioengineering are but few examples. Light Emitting Diodes (LEDs) are saving 90% of the energy wasted by incandescent lights. The experts of TechCast project directed by Bill Halal, Professor of Innovation and Technology at George Washington University detail “scores of new fuel cell technologies developed to create H2 directly from biomass. Photosynthesis is offering the prospect of converting sunlight into energy as plants do, at 100% efficiency.

Corporations are greening their businesses at an astronomical pace. Greentech could be the greatest business opportunity of 21st century. Cleaner energy companies that attract 1% of venture capital before 1999 are now getting 8% of all investment. The world market for pollution control was \$500 billion in 2000. It is expected to rise to \$10 trillion in 2020, larger than automobiles, health care and defence.

Lee Scott, CEO of Wal-Mart and Stuart Rose, CEO of Marks and Spencer both admit that they started their sustainability drive as “a defensive strategy”, but it has turned out a cash cow creating value for both customers & company in an unprecedented way while protecting environment.

DuPont claims to have reduced GHG emission by 50%. Dow Corning has made \$1 billion through eco-embedded innovations. Ford has boosted productivity and saved money by rebuilding its River Rouge plant in Detroit ecologically, installing skylights and a ‘living roof’ that reduces toxins. Several companies have followed suit. Genzyme Corporation uses waste steam for heating. The New York Jets stadium was designed to use solar cells and wind turbines to reduce energy. It now sells excess energy to the city’s electrical grid. UPS & FedEx are equipping vans with hybrid and fuel cell engines to reduce fuel costs & pollutants. Starbucks claims it saved \$36 million in 2001 through CSR and sustainability projects that helped keep employees loyal and cut down turnover costs.

The trend is unmistakable. California Edison increased its use of renewables from 1% in 1985 to almost 30% today, and California now requires 20% of its energy to be renewable by 2017. Maine now derives 30% of its energy from hydroelectric plants and other renewables. Hawaii, and other states aim to produce 20% of all energy from renewables by 2020. The U.S. DoE thinks renewables will reach 28% by 2030, and the EU expects renewables to reach 22% of energy use by 2010.”

Melting of glaciers is reducing the water supply for future generations. Water promises to be in the 21st century what oil was in the 20th century. Gangotri glacier the font that supplies fresh water to millions in India is receding by 23 meters every year. Desalination technologies will change the equation. According to TechCast studies, innovations in desalination have brought down the overall desalination costs from \$20 per gallon in 1950, to \$6 per gallon in 1960. The cost is now approaching 1 cent per gallon. Ovation Products claims it can distill water contaminated with anything into pure drinking water for 1 cent per gallon.

New business models are emerging which are material efficient and service based. The classic example is Interface Corporation, a \$ 1.1 billion company that provides “carpet service” rather than selling carpets. They learnt to recycle carpets and found recycling makes carpets last four times longer and uses 40% less fabric while reducing the amount of replaced carpeting by 80%. This resulted in 35 fold reduction in overall use of materials. Ray Anderson the CEO says: “Sustainability doesn’t cost. It pays. Our costs are down. Our products are the best they have ever been. Our people are motivated by a shared higher purpose. And the goodwill in the marketplace is astonishing. Doesn’t it feel good to have this kind of commitment made by the company that you are part of? Don’t you feel proud?”

Smart investors are realising that modern technology can give multiple benefits. The intimate interplay between a DNA molecule, the IT power, atomic matter, bioengineering has driven commercial innovation through the roof. Bridgestone, the Japanese tyre company no longer sells tyres in Europe. They charge customers on “pay as you use” basis. Tyres have sensors to track their usage. So instead of proliferating models, the company focuses on improving the durability of tyres. Because customers pay on usage, even the poor can afford thus the company enhances its market, improves its sales and boosts social inclusion. Lots of other companies operate similarly multiple agenda that improve their bottomline, alleviate poverty and save the planet.

Solar energy is ripe for breakthroughs and offers the best opportunity for investors. The material which forms the basis of the vast majority of today’s solar cells, silicon is expensive and cumbersome. There is no compelling reason why new materials of a tenth of a twentieth the price of silicon could not be used. Eventually thin-film technology will prove a cheaper replacement. However, there may be other solar opportunities through these cell technologies. Stephen Mahon of the Low Carbon Initiative, which recently launched a £44.5m (\$82.5 m) environmental fund, says it is investing in Heliodynamics, a company which use mirrors to focus the suns rays and thus increase the power generated.

But nanotech can provide plastic solar cells at \$0.20/watt and increase efficiency. Nanosolar Company is mass producing solar cells at far less cost by simply printing them, and expects to increase the global supply 20-fold. The world’s largest solar power plant, located in the Mojave desert, is 30% efficient. The CEO says that “11 square miles could produce as much energy as Hoover Dam.” The consensus is that costs will become competitive with other energy sources about 2012 to 2015, and some experts estimate solar and wind power will reach 10% of U.S. energy by 2013.

Nuclear fission produces no pollution, has a sound safety record, and compares with oil on cost. New designs like the pebble bed reactor are immune to meltdown, and waste can be stored safely if coated in glass or socked away in stable mountains for 200,000

years. A “fast breeder” design recycles spent fuel to reduce radioactive waste from 95% to 1% of the fuel used. Worldwide, the number of nuclear power plants is expected to grow from 435 today to 600 by 2010.

Organic farming is making the planet and humans both healthier. It uses less resources, improves the soil, reduces drought and erosion and improves profit through higher yield. Studies also show that organic foods produced a “dramatic and immediate” drop of pesticide levels in the bodies of children. “Free range” chicken, and grain-fed beef have less fat, less cholesterol, less vitamin A & Omega Acid compared to ‘factory raised’ chicken or animals. Vegetables also lose nutrients when grown with chemicals. Surveys show 90% of the public favors organic produce.

Innovations in precision farming are unfolding new opportunities of profits for companies with improved soil productivity, healthier people and healthier planet. It involves the computerized control of irrigation, seed distribution, fertilizer, and pesticides to suit variations in land identified using GPS and geographic information systems. Twenty percent of farmers in the U.S. are adopting these practices because PF reduces the amount of costly chemicals needed, raises yields, and protects the environment. A farm equipment manufacturer said, “In 10 years, every farmer will use this technology.”

Our greatest challenge is to dematerialize this world. What will happen to this planet if all 8 billion people own cars, cookers, refrigerators, washing machines, plasma televisions and flush their toilets with the same intensity of water as only a few millions can afford today? The saving grace of poverty is that the per capita use of natural material by the poor countries is a fraction of rich countries. Do we realise we are able to breathe fresh air only because 5 billion people cannot afford to buy these objects. Our obsession with materialistic growth is a recipe for disaster. Even Adam Smith had a problem with capitalism’s wasteful materialism and rued, “how many people ruin themselves by laying out money on trinkets of frivolous utility”.

The real challenge for the capital markets is replacing the acquisitive model of growth by one that creates competitiveness and enjoyment through experiential growth without impacting environment.

A whole lot of companies like the Disneyworld and Nintendo are creating huge wealth by letting people have fun. Others like Japan’s Bridgestone and US’s Interface Corporation no longer sell their products and charge customers usage. Indian Premier League has set a shining example of creating wealth in sport. Why limit IPL to Cricket? Why not IPL for Kabaddi? These models have a huge innovation and wealth creating potential. Kahneman, a Nobel economist at Princeton University and Daniel Gilbert a Psychology professor at Harvard University and author of “Stumbling on Happiness” reckon people cherish experiences over commodities. People love ‘doing’ than ‘having’.

In a national survey of more than 12,000 Americans conducted by Harris Interactive on behalf of Northwestern Mutual Financial Network, respondents were asked to think of an experiential and a material purchase they had made with the “aim of increasing your happiness.” Van Boven, a Colorado University professor found that when asked which made them happier, most respondents chose their experiential investment over their material possession. The most durable amusements are the ones which have application and attention.

The bottom line is: can we base a national economy on GDP growth which is determined by credit growth, mortgage growth or credit default swaps? This is the real cause of greed and Affluenza, in the words of James Olivier. The influenza of affluence. Why don't we put people happiness first? People cannot be happy in an arid world. Greening of the economy and its infrastructure not only greens the planet and creates employment, it would spur innovation and transform businesses as never before. We would wipe out imbalances between continents, among nations and within nations and regenerate both urban and rural areas. Our growth will be measured in terms of number of solar panels, wind turbines, smart bio-fuels, cellulosic ethanol based generation of electricity and a massive program to weatherize every building and home. All this will create new jobs and give fillip to spending while greening the planet.

The downturn in the financial market is a God-sent opportunity for both governments, investors and civil society to reflect on the current growth model and determine afresh drivers of true happiness and business's role in incorporating them in their business models. Can growth focusing only on fueling consumerism be sustainable? Would cluttering this planet with proliferation of products of questionable utility not harm the quality of life for our own children and their children? What world would we bequeath to our children if our economic growth pursues the model we have adopted during the last 200 years for the majority of the population who are still poor? If the answer is yes then why business should not be in the driving seat and reinvent itself to use this change as an opportunity of growth unseen in a million years.

These are some of the questions posed at the upcoming 4<sup>th</sup> Global Conference on Social Responsibility in Vilamoura. We are however conscious that, in this globalised world of instant communication, these issues cannot be resolved without global action. As we have noticed in all previous campaigns relating to humanity's challenges - peace, poverty, pollution, terrorism, cyber security, corporate fraud, corruption and now the global meltdown, our progress has been stymied because our thinking is compartmentalized and action is piecemeal. We owe it to our children to lead from the front in developing a forum of global governance that could advance this agenda in a holistic manner. The model for this global governance will have to be different and designed more imaginatively. We need to factor the inadequacies of our current global financial system to regulate itself, lack of will and teeth of the global agencies like United Nations, World Bank, IMF, WTO, Doha Round. We have to think of designs that involve governments, businesses, and civil society for common good by harnessing the strength of their diversity, dissent and difference through dialogue and disclosure.

We are conscious that our attempt to raise these significant issues at the Vilamoura IV is yet another "audacity of hope". We persist because there was never a better time to raise these issues and because the alternative could be catastrophic to human race.

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