

7-1-2013

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iRepository Citation

Iqbal, B. A., Hassan, M., Rawat, B., & Arslan, S. (2013). Business and climate change: trends, issues and challenges. *Business Review*, 8(2), 42-57. Retrieved from <https://ir.iba.edu.pk/businessreview/vol8/iss2/4>

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ARTICLE

BUSINESS AND CLIMATE CHANGE: TRENDS, ISSUES AND CHALLENGES

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Abstract

The present century i.e. 21st Century is the century of Business and Climate. These two issues are getting higher attention from both developed countries and developing economies. On the one hand, business has affecting environment and on the other hand environmental products are boosting business and therefore, there is close relationship between business and climate change

Looking into the growing grave concern from different sections over climate change, considerably due to industrial units, businesses had also started to take initiative in this regard. The paper, henceforth, concentrates on what had so far been done, and what more need to be done for maintaining ecological balance. The paper, as such, is divided into four parts. Section second briefly brings strategic information on climate change. Section third of the study traces-out distinct problems and barriers associated to climate change, particularly in Indian scenario. Finally section four of the study lays down various solutions for tackling the problem of climate change.

Key words: Business, Climate, ecological balance, carbon emission, human civilization, Industrial revolution.

PART I

Introduction:

Ecological Balance is an important requirement for the existence of all sorts of species present in the world. One can easily find evidences from history regarding impact climatic changes had brought for the world in general and human race in particular. Emergence of Human beings was, indeed, the outcome of this climatic change. Even, climatic change had been the reason for destruction and emergence of distinct species on the Earth.

Carbon emissions, which are considered as the most common reason for climatic change, are generated by the activities performed both by nature and by man. In past, climatic change, due to carbon emissions was the result of natural turbulence that took place due to the activities taking

place in ecological environment and because of ecological environment. Since the inception of human civilization, both natural and man-made (anthropogenic) forcing apparently contributed, more or less equally. Since mid-century, man's activities seem to have been by far the major contributor (Llewellyn, 2007). In short, there is transition in contribution to carbon emission from natural to human with the passage of time.

The very point has been evidenced by the isotopic 'fingerprinting' analyses. The analysis finds that, prior to the Industrial Revolution, atmospheric greenhouse gas concentrations, and hence Earth's temperature fluctuations, were driven primarily by orbital, volcanic, and solar 'forcing' (Llewellyn, 2007). However, presently human beings are considered as an important reason for this. Human race had been destructing the climate directly or indirectly. With the development of the civilization came industrial development. There are mounting proofs that following the industrial revolution of the 18th and 19th centuries, which commenced in Britain and has expanded to several parts of the world, the amounts of carbon dioxide, methane and other greenhouse gases in the atmosphere has increased somewhat. This leaves room for the suspicion that human industrial activities are believed to be a major contributor to Global Warming. (www.environmentbusiness.com)

Uncertainties in emissions scenarios feed into uncertainties in carbon-cycle modeling, which feed into uncertainties in climate modeling, which drive an even larger range of uncertain climate impacts (www.nature.com). Climate change is projected to result in a variety of physical effects, including sea level rise and changes in patterns of temperature, precipitation, and extreme weather events. These effects will in turn have implications for both managed and unmanaged ecosystems, human health, and other human systems, such as buildings, industrial processes, transportation, energy supply and demand, and infrastructure. (Sussman and Freed, 2008)

Thus, business activities are contributing to the environmental pollution, and thus climate changes, in number of ways due to which there are unpredicted phenomena's are taking place. One can easily find frequent evidences of impact of climate change - like rise in sea level and changes in patterns of temperature, precipitation, and extreme weather events - can make on the world. Thus, there is an immediate requirement of putting business activities under stringent scanner for saving the earth, and henceforth, human race.

Since long back, there had been growing concern over the issue. This had resulted in number of initiatives taken from distinct authorities and distinct sections of the society for conserving the earth from destruction. In this regard government authorities had framed various policies; society had raised concerns by promoting purchase of green products; and international organizations had been involved in framing international standards for Green Business Operations and consequent promotion of Green Business Activities. For example, The UN Climate Change Conference in Copenhagen in December 2009 may have kept international negotiations alive on the issue, but it certainly did not deliver a comprehensive agreement that would set the framework for international action (Economic Intelligence Unit, 2010). Even efforts made through Kyoto Protocol, Cancun Accord and many like this, though had made some impact overcome the problem, but the same were either resulted in disagreement or were not found to be ample to meet the crisis.

PART II

Strategic information:

Considering the growing concern over the issue, the environment—which is synonymous with climate change for many executives—has become an important topic for most companies these days. Companies know that consumers and employees care about the environment, and their interest often presents real business opportunities and risks. (www.mckinseyquarterly.com, 2010)

Since the concerns for climate change had been raised, governments around the world had been putting constant efforts to mitigate the problem. Governments launched the international climate change effort at the “Earth Summit” in 1992 with the signing of the United Nations Framework Convention on Climate Change (UNFCCC), which sets its ultimate objective as stabilizing atmospheric GHG concentrations “at a level that would prevent dangerous anthropogenic [human] interference with the climate system.” Recognizing the wide range in countries’ historical contributions to climate change and in their capacities to address it, governments agreed they had “common but differentiated responsibilities.” In keeping with that principle, developed countries agreed to “take the lead” and to assist developing countries in combating climate change. Developed countries also agreed to a non-binding “aim” of reducing their emissions to 1990 levels by 2000. (www.pewclimate.org, n.d.)

In 1995, recognizing the probable failure of the governments in achieving this voluntary target, governments adopted the Berlin Mandate, calling for the negotiation of binding targets for

developed countries (www.pewclimate.org, n.d.). These negotiations led to Kyoto Protocol, which was signed in 1997 and entered into force in 2005. The Protocol commits industrialized (known as Annex I) countries to reducing GHG emissions by an average of 5.2 per cent from 1990 levels until the period 2008–2012. In line with the UNFCCC (1992), which determined that countries have to act or be supported according to their “common but differentiated responsibilities and capabilities”, the Kyoto Protocol acknowledges that developing countries have the right to develop their economies as developed nations did in the past, and thus does not assign them binding GHG reduction targets. This does not preclude them from exploring options in the context of the global battle against climate change. In addition, some developed countries did not ratify the Protocol. The Protocol’s lack of coverage and of participation by a number of countries has been criticized, together with its short-term nature, lack of stringency and lack of compliance incentives the Kyoto Protocol has been applauded for allowing Annex I countries to reach their targets cost-efficiently through the establishment of flexible mechanisms: Emission Trading, Joint Implementation (JI) and the Clean Development Mechanism (CDM) (WIR, 2010). Other flexibility provisions include: setting emission targets as five-year averages, rather than single-year limits; counting a “basket” of six greenhouse gases, not just carbon dioxide; and providing credit for carbon sequestration (i.e., storage) in forests and farmland. (www.pewclimate.org, n.d.)

Another effort to meet climate challenge was made through “The Copenhagen Accord”, which set a long-term goal of limiting global warming to 2 degrees Celsius; called for a new multilateral climate fund and set goals of mobilizing \$30 billion in public finance in 2010-2012 and \$100 billion in public and private finance in 2020; further defined how countries’ actions are to be reported and verified; and called on countries to list mitigation pledges (economy-wide

emission targets for developed countries, and mitigation actions for developing countries) for 2020. (www.pewclimate.org, n.d.)

The Copenhagen summit, however, demonstrated the difficulty of achieving a new round of binding climate commitments (www.pewclimate.org, n.d.), as most countries with binding targets under the Kyoto Protocol showed strong unwillingness to commit themselves to new targets without commensurate commitments from the United States and the major emerging economies.

Box 1: International Action on Climate Change

1992	United Nations Framework Convention on Climate negotiated And ratified
1995	Berlin Mandate calls for emission targets for developed countries.
1997	Kyoto Protocol negotiated.
2001	U.S. rejects Kyoto Protocol.
2004	Russia ratifies Kyoto Protocol meeting threshold for entry into force.
2005	Kyoto Protocol enters in force; Kyoto partners open talks on post-2012 developed country commitments.
2007	Bali Action plan launches parallel negotiations under Framework Convention.
2009	World Leaders negotiate Copenhagen Accord.
2010	Cancun Accord agreed upon.

Source: www.pewclimate.org (n.d.), Climate Change 101 Business Solutions, Retrieved on: March 20, 2012. P-3. http://www.pewclimate.org/docUploads/1114_BusinessFinal.pdf

The Accord that was agreed at Cancun in 2010 has gained wide international acceptance, not because of its utility in terms of carbon reduction but because of its political usefulness. The Accord has developed no real teeth as the Carbon policy remains distinctly national among Accord signatories. Countries that initially stayed out of this club, however, faced carbon tariffs as states sought an excuse to impose trade barriers while maintaining the broad tenets of the increasingly fraying world trade apparatus. In fact, supposed progress on carbon is often used as a distraction from the failure of other international institutions and negotiations to address the ongoing economic malaise (Economic Intelligence Unit, 2010). Compendiously, the efforts made under various accords and summits etc. was directed towards reductions in either greenhouse gases emissions or global warming. However, disagreement on various issues put questions on its success.

PART III

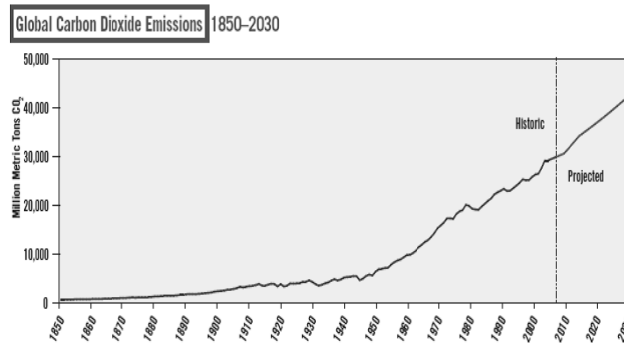
Constraints and barriers: an indian scenario

The global policy debate on tackling climate change is no longer about whether to take action. Against the background of common but differentiated responsibilities and respective capacities, it is now about how much action to take and which actions need to be taken – and by whom. (WIR, 2010)

Greenhouse gas (GHG) emissions have risen dramatically since the start of the Industrial Revolution. Globally, energy-related CO2 emissions have risen 145-fold since 1850—from 200

million tons to 29 billion tons a year—and are projected to rise another 36 percent by 2030 (Figure 1). (www.pewclimate.org, n.d.)

Figure 1: Global carbon Emissions



Source: www.pewclimate.org (n.d.), Climate Change 101 Business Solutions, Retrieved on: March 20, 2012. P-1. http://www.pewclimate.org/docUploads/1114_BusinessFinal.pdf

CO₂ comprises the majority of GHG emissions, at about 77 percent of the worldwide total (measured in global warming potentials). The remainder comes mostly from methane (CH₄) and nitrous oxide (N₂O), with small shares coming from fluorinated gases (SF₆, PFCs, and HFCs). The contributions of CH₄ and N₂O are significantly larger in developing countries, and in some cases are larger than energy-related CO₂ emissions. Emission estimates of CH₄ and N₂O, however, are subject to higher measurement uncertainties than energy-related CO₂ emissions. (www.wri.org)

Increases in global temperature, and the resulting effects on climate, are likely to have numerous impacts on physical and biological systems, differentially across Earth’s regions. Following table (Table 1) mentions various geophysical effects of climate change and its likeliness about its occurrence.

Table 1: Effects, Probability and Impact of Climate Change

Geophysical effect	Probability	Impact Likely to Occur Somewhere
Higher maximum temperatures, more hot days, and heat waves over nearly all land areas	Very Likely (90-99%)	<ul style="list-style-type: none"> Increased deaths and serious illness in older age groups and urban poor Increased heat stress in livestock and wildlife Increased risk of damage to a number of crops Increased electric cooling demand and reduced energy supply reliability
Higher minimum temperatures, fewer cold days, frost days, and cold waves over nearly all land areas	Very Likely (90-99%)	<ul style="list-style-type: none"> Decreased cold-related human morbidity and mortality Decreased risk of damage to a number of crops, and increased risk to others Extended range and activity of some pest and disease vectors Reduced heating energy demand
More Intense precipitation events	Very Likely (90-99%)	<ul style="list-style-type: none"> Increased flood, landslide, avalanche, and mudslide damage Increase in soil erosion Increase flood runoff

Increased summer drying over most mid-latitude continental interiors and associated risk of drought	Likely (67-90 %)	<ul style="list-style-type: none"> • Increasing recharge of some floodplain aquifers • Decreased crop yields • Increased damage to building foundations caused by ground shrinkage • Decreased water resource quantity and quality • Increased risk of forest fire
Increase in tropical Cyclone peak wind intensities, mean and peak precipitation intensities	Likely (67-90 %)	<ul style="list-style-type: none"> • Increased risks to human life and risk of infectious disease epidemics • Increased coastal erosion and damage to coastal building and infrastructure • Increased damage to coastal ecosystem such as coral reefs and mangrove swamps
Intensified droughts and floods associated with El Nino events	Likely (67-90 %)	<ul style="list-style-type: none"> • Decreased agricultural and rangeland productivity in drought- and flood-prone regions • Decreased hydropower potential in drought-prone regions
Increased Asian monsoon variability	Likely (67-90 %)	<ul style="list-style-type: none"> • Increase in flood and drought magnitude and damages in temperate and tropical Asia

Source: Nils G., Doug R. and Peter S. (2007, January), A System Vulnerability Approach to Consider the Potential Impacts to 2050 of a Mid-Upper Greenhouse Gas Emissions Scenario, Global Business Network, San Francisco, CA. P-4.

There had always been a common and popular complaint in the West - that the emerging Asian countries are using unfair tactics to protect their own growing markets and manipulating currencies to keep their products unfairly cheap. Increasingly confident Asian governments, however, see no reason to change policies which they consider entirely justified, and which have brought them success. They point to increasingly free trade within an incipient Asian economic bloc as a sign that they are open for business. Meanwhile, carbon emissions have become one of a growing list of disagreements plaguing East-West relations.

Asian countries are taking a range of approaches to climate issues. Some, mostly the low-cost manufacturers for the larger Asian markets, refuse to cut their emissions at all. As calls for aid to help convert to cleaner fuels jarred increasingly with growing wealth in the region, these states instead began to insist on “carbon reparations”. India and China, however, are promoting green technology as a way of creating energy self-sufficiency and hope to develop a leading position in a growth industry. The same reasoning, however, leads to an increase in use of domestic coal. The two states remain rivals, co-operating little on energy matters. (Economic Intelligence Unit, 2010)

The principal actors on the world stage, regarding climatic change, are business units. Negatively, corporations are responsible for a huge share of the appalling environmental deterioration now under way. Positively, corporations have the technology, access to capital, and managerial discipline essential to the transition to sustainability. The corporate sector thus has both a profound interest in promoting the transition to sustainability and a responsibility to do so. How then should it respond? The historical transformation now needed is one in which corporations rise to their new responsibility and accept the need for positive collaboration with government and citizens in adopting the far-reaching climate measures that are now essential. (Speth, 2005)

It is widely recognized that climate change poses potential risks and opportunities to business in the form of current and possible future greenhouse gas regulations and emissions

trading systems, changing attitudes of shareholders and consumers, evolving product markets, and actions taken by competitors. Equally, the physical effects of climate change—changes in temperature and weather, water availability, and other changes—can affect business processes, fixed assets like buildings, and resource availability. However, relatively few businesses have climate impacts on their “radar screens” (Sussman and Freed, 2008). Thus, climate change may have both positive and negative impacts on your business depending upon many factors including:

- your location
- your business' activities
- the ability of your premises to withstand extreme weather events
- your customer base
- the length, location and diversity of your supply chain. (www.businesslink.gov.uk)

One of the largest and most immediate risks businesses face from climate change is what experts refer to as “regulatory risk”—or the risk to companies posed by government limits on greenhouse gas (GHG) emissions. The effect of these limits on business operating costs and the value of company assets will be significant, especially for firms producing high levels of emissions. As a result, many companies are starting to reduce their emissions voluntarily now. Their motivations include gaining a head start over competitors in learning what climate strategies work, preparing to respond rapidly once regulations do take effect, and better managing the costs of reducing their emissions over time. In addition, many companies recognize that acting early to reduce emissions is an important way to gain credibility and influence among lawmakers as they consider what policies will work best. (www.pewclimate.org, n.d.)

A more difficult issue for many companies is adaptation to climate change. Variations in weather patterns will affect companies across the board from finding basic inputs to getting out finished products. Moreover, along with risk management, well-prepared companies also recognize and aim to capitalize on potential opportunities. As global economies get transformed into low-carbon economies, businesses are getting aware about opportunities being thrown up by climate change (www.copperwiki.org). In 2009, for example, Siemens generated €23bn (US\$34bn) in income from environmentally related product sales, up by 11% from 2008 sales of €20.7bn. GE's Ecomagination products earned the company around US\$18bn in 2009, despite last year's global economic difficulties. Even in a survey conducted by Economic Intelligence Unit, 45% agree that their companies see carbon emissions reduction as a way to gain competitive advantage by cutting costs, and 59% say their companies see it as a way to obtain advantage through new products and services. Only 24% and 14% respectively disagree (Economic Intelligence Unit, 2010)

Businesses that are taking action to address climate change, both within their companies and in the policy arena, recognize two things: 1) regulation of greenhouse gas emissions is inevitable; and 2) mandatory climate policies, if properly designed, are consistent with sound business planning and good corporate governance. As more companies and more investors come to this realization, pressure will mount for other businesses to take a more responsible and proactive stance. (www.pewclimate.org, n.d.)

India is a country which is and will continue to be severely bearing the negative effects brought in by climate change, especially at a time when it is looking forward for its phenomenal growth. Giving due concern to the issue, India had started finding ways to get escaped from the

problem. The government claims it is already spending over 2 percent of gross domestic product (GDP) on measures to adapt to the impacts of the changing climate. The Carbon Disclosure Project estimates that climate change could result in a loss of 9–13 percent in the country's GDP in real terms by 2100 (Malini Mehra, 2009). However at the same time, India had declared that even as it pursues its social and economic development objectives, it will not allow its per capita GHG emissions to exceed the average per capita emissions of the developed countries. (Government of India, n.d.)

Albeit India has not been an emitter historically, the growth in economy and change in consumption patterns, led to dramatic rise in emissions and the country's carbon footprint. Even, future projections regarding GHG emissions by the International Energy Agency projects that India will become the third-largest emitter by 2015.

India's problem is its energy economy. The country has an extremely high dependence on fossil fuels—in particular on imported oil and dirty coal, which it has in abundance. Fossil fuels are responsible for 83 percent of India's carbon dioxide emissions; coal alone accounts for 51 percent. Addressing climate change effectively therefore will require a transformation of India's energy economy. (Malini Mehra, 2009)

Seeing no comprehensive initiative being taken by the Indian government for climate change, India's business community are leading the way to tackle climate change considering it an important business issue. Finding immense opportunity in the issue, if exploited intelligently, many Indian businesses had started investing in clean energy, energy conservation and efficiency, smart buildings, and green products. They realize the market is changing and the time to act is now. Efforts from Business houses Like ITC, Infosys, Suzlon energy, Tata BT can be set as examples which show that India Inc. is prepared to move and doing so voluntarily in many respects. Even, a new breed of eco-developer is focusing on housing, seeking to capitalize on a projected \$4-billion market for green buildings by 2012 and pushing existing building codes on energy efficiency. (Malini Mehra, 2009)

To understand perspective of India's business leaders regarding different aspects associated to climate change, KPMG conducted a study, by interviewing seventy business leaders on a structured questionnaire from a broad range of industries and sectors, to develop an understanding regarding the opinion Indian industry holds over the issue of climate change. The results derived from this study are quite encouraging and appreciable for India's initiative for clean and safer environment. The results over various are stated as under:

- With regard to understanding of the issue, 41 percent of the respondents hold the view that have a good understanding of the issue and have a clear strategy for meeting out the challenges. Furthermore, forty two 42 percent of the respondents claimed that they are looking forward for developing their carbon strategy in contrast to the company's and country's requirements (Figure 2).

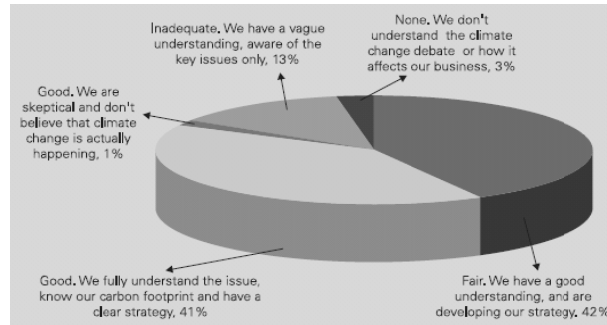
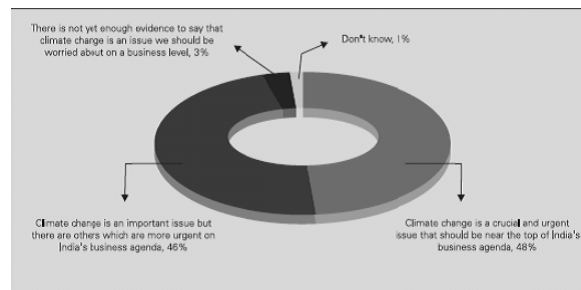


Figure2: Understanding of the Issue

Source: KPMG (2008), Climate Change: Is India Inc. Prepared? A KPMG Study, KPMG in India. P-6

- Favorable response from significant proportion of the respondents of the survey with regard to awareness of issues has resulted in growing grave concern over the agenda of climate change (Figure 3). Accordingly, results exhibits that 48 percent of the respondents holds climate change as a crucial and urgent issue and should be, in near future, at the top of India's business agenda. Simultaneously, 46 percent of Indian businesses indicated that, albeit, climate change is an important issue, but there were other issues that hold more urgency on India's business agenda.

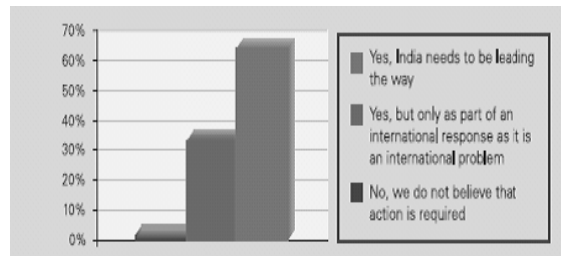
Figure3: Awareness of Issues



Source: KPMG (2008), Climate Change: Is India Inc. Prepared? A KPMG Study, KPMG in India. P-7

- With concern to outlook towards India's role in responding to the problem, results exhibited that Indian businesses are commendably positive in their outlook for the country's role in the global response to climate change, with 65 percent of respondents indicating that India should be leading the way (Figure 4).

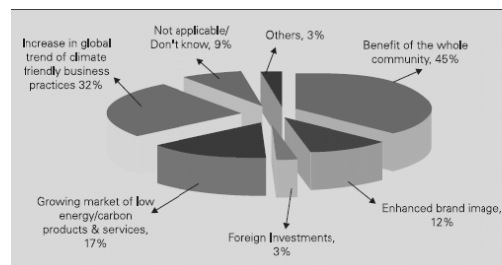
Figure 4: Outlook Towards India's Role



Source: KPMG (2008), Climate Change: Is India Inc. Prepared? A KPMG Study, KPMG in India. P-10.

- With regard to the motivator for such initiative, forty five percent (45%) of the respondents mentioned 'benefit of the whole community' as their main motivator to reduce their carbon impact, while 32 percent mentioned the desire to align with the global trend of climate friendly business practices as the main motivator (Figure 5)
- The survey, however, exhibits dismally low results for low energy/carbon products and services as a motivator for reducing their carbon impact, with only 17 percent of the respondents standing in favor. On the other hand, in the context of investment decisions, consideration of the environmental impact and availability of greener options appears to be playing a greater role. Eighty eight percent (88%) of the respondents consider it important to evaluate their carbon footprint for investments in up-gradation of existing technology and equipment. Similarly, 87 percent believe it to be important for investments in new plants and technology.

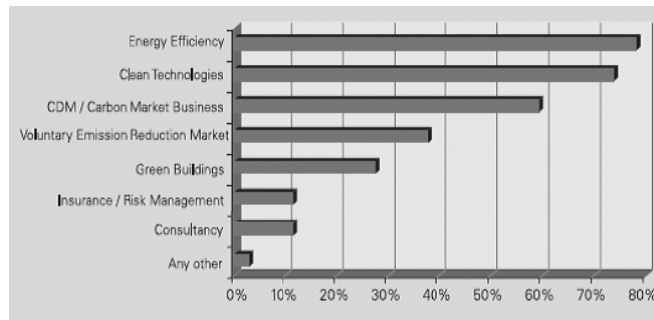
Figure 5: Motivator for Initiative



Source: KPMG (2008), Climate Change: Is India Inc. Prepared? A KPMG Study, KPMG in India. P-19.

- Survey results also outlines that majority of the respondents are presently working or planning to work towards building businesses in the areas promoting climate conservation. These areas preferably includes, Energy Efficiency (75 percent), Clean Technologies (74 percent) and CDM/ Carbon Market business (59 percent) (Figure 6)

Figure 6: Sectors Working/ Planning to Work for Promoting climate Change



Source: KPMG (2008), Climate Change: Is India Inc. Prepared? A KPMG Study, KPMG in India. P-20

Thus, we can easily state that India's response to climate change is proactive and broad-based, enabling the country to move consistently towards a stage of decoupling of growth and carbon emissions. The country has taken various initiatives in this direction, including:

- Changing trends in overall consumption patterns
- A thrust on the use of renewable energy sources
- Improved energy efficiency in the power and manufacturing sectors
- A transport policy that seeks to encourage an efficient rail-road mix and developing an efficient highways network
- An automobile policy that is aligned to the best international safety and emission norms
- Urban planning that aims to optimize living and working spaces as well as restores the depleted green cover. (ASSOCHAM, 2011)

The transition to a low-carbon economy will have economic implications that will transform businesses. Indian businesses are beginning to adopt a transformational approach, underpinned by an integrated climate change strategy to adopt a low-carbon growth trajectory. India Inc. can make a significant contribution to India's foreseeable low-carbon economy. The transition is an achievable goal, but it will require a massive and coordinated effort assisted by strategic long-term planning and innovation. (ASSOCHAM, 2011)

PART IV

Solutions and policy recommendations:

Government climate policies and growing customer awareness about the climate problem are combining with other forces to produce significant changes in the markets for products. For companies to remain competitive, they will need to position themselves to succeed in the face of two trends: a decline in the value of inefficient and greenhouse gas intensive technologies; and a corresponding increase in demand for climate-friendly technologies and services. (www.pewclimate.org)

The report, conducted by Business Continuity Expo 2008, showed that 87% of businesses see climate change as the single biggest threat in terms of risk assessment and the effect it could

have on their businesses future growth. The rising cost of energy is also a serious risk, with 83% of businesses concerned that it will have a major impact on their business over the next five years. (www.co2balance.com)

Business leaders know better than anyone that they are trapped in a system, constantly hemmed in by imperatives shaped by market competition, consumer preferences, investor behavior, and other factors. These imperatives often preclude attractive options. When the gap between the required answer and the right answer gets too wide, government action to provide new norms and rules of the road becomes imperative. (Speth, 2005)

The experiences of companies addressing carbon issues show that mitigating the requirements of lesser GHG emissions had been like a journey. Typically it starts with the reduction of greenhouse gas emissions from internal operations, where achieving energy efficiency frequently lowers costs as well as emissions. The next step tends to be taking advantage of the market opportunities provided by goods and services that require less energy either in their creation or (frequently more important to customer appeal) in their use. Usually around this time or soon after, firms move towards reducing the broader carbon footprint of the enterprise, including emissions generated by consumers using company products and by suppliers. (Economic Intelligence Unit, 2010)

Scientists say that the world needs to reduce total greenhouse gas emissions by 50 to 80 percent (compared to a business-as-usual scenario) in order to stabilize atmospheric greenhouse gas concentrations and avoid “dangerous climatic change.” Despite the recent upsurge in private-sector involvement in the climate issue, voluntary action by selected companies and their investors is not achieving sufficient reductions to solve the problem. (www.pewclimate.org, n.d.)

Considering the need for better world for our generations – present and future – we have to intellectually search-out for the measures – micro as well as macro level – to deal with the issue. Since businesses had emerged as a major contributor to this problem in last few decades or so, they had to lead from the front. In order to overcome from this crisis various suggestive measures can be enlisted as under:

1) Behavioral Transition of Citizens:

What is required at the most is considerable change in the behavior of the ordinary citizens towards the issue. The respondents of various surveys and researches believes that the main cause of the earth’s climate change are people themselves – human causes (waste, population increase, electricity, etc) and irresponsible practices that lead to deforestation and pollution; and in order to address climate change, most of the respondents acknowledge that it would mean changing the behavior of ordinary citizens (Go, 2011) (NOTE 1). The transformation of human mind had brought drastic changes in past and, if handled appropriately, changes could be brought this time.

2) Behavioral Transition of Companies:

Businesses in these polluting, incumbent, industries have already extracted considerable sums from the public purse, made hysterical claims about carbon pricing while profiting enormously from the over-allocation of carbon permits, and if there were no price for their pollution we would all be subsidising them long after they ceased to exist. These businesses know they can reduce their carbon emissions at relatively low cost, that even with a price for carbon the

demand for their products will remain high for the next decade, and that there are alternatives emerging that are less wasteful and also have other attractive properties for their customers. (Cameron, 2012)

3) Transformation in production Process:

Most companies, taking their cues from governments, treat carbon emissions as a public relations issue. Even those who might otherwise do more are too busy rebuilding supply chains increasingly impeded by barriers to trade. Innovative business models or products that offer rapid cost reductions through energy efficiency find great favor among consumers, but more adventurous business models requiring longer-term investment find it hard to obtain financing. A few entrepreneurs start out well, but find it hard to scale up. Thus, low-energy-using goods have been gaining market share, but progress on renewable energy is very slow. (Economic Intelligence Unit, 2010) Low-carbon and environmental goods and services (LCEGS) sector and carbon finance are going to be increasingly important areas for us to earn our way in an increasingly competitive global economy. (Cameron, 2012)

Even there are compelling strategic, economic and political reasons why we must transform the way we generate energy, ensure access to clean water and feed our growing populations. Considering the impetus the issue holds the agenda is going to be the prime one at this year's World Economic Forum meeting in Davos. (Cameron, 2012)

4) Halting Deforestation:

There had, indeed, strong support that we can't effectively tackle the problem of climate change, and the resultant impacts of environmental challenges we face in today's world without putting halt on deforestation. We all are aware of the facts that more the greenery on the earth, lesser would be the climatic fluctuations.

5) Trained Manpower:

The obvious solution for the business houses to overcome the problem is through training employees. Proper training to the employees, for encouraging and ensuring production of low-carbon goods and services, does not only help to close the skills gap (especially with global standards), but also help in sustaining in the market, generating synergistic gains in comparison to the global or local competitors, and ultimately, achievement of goal of securing climate.

6) Effective Policy Framework:

In order to ensure cease-off or reduce the pace of climate change, businesses need to frame-out their overall policies considering the same. For the purpose, businesses should keep an eye over the changing global scenario and adopt the one which fulfils their aspirations. Business houses should also, to the maximum possible extent, strongly promote use of low-carbon emission materials and process for generating goods and services. Such an initiative will ensure in building brand image among today's "much aware" and "much concerned" customers. It will also help in acquiring larger market share and resultant earning of huge profits.

Along with, government cannot hide itself from the problem. It had also to take equal responsibility to mitigate the problem. It is required on Government's part that it should frame such policies (industrial) that encourage businesses to undertake, as much as possible, low-carbon emitting activities for production of low-carbon products.

7) Effective Strategy Framework:

In this highly competitive business environment, much is put at stake to accelerate from competitors. Such efforts sometimes drastically affect the environment.

When there is so much hoopla around the globe for saving and securing the world, businesses cannot be exception to it. Being recognized as the major contributors to climate deterioration, they hold the prime responsibility for the same. Businesses for fulfilling aspirations of their stakeholders cannot put climate concerns at stake. Hence, businesses are required to frame their strategies in such a manner which not only ensure higher profits to stakeholders, but also in maintaining climatic balance.

Conclusion:


From the fore going discussion, it is evident that fear of disastrous future due to climate change had put the issue on the table, for the whole world. Even if there is tussle between developed and developing world's regarding who contributed most in past and who's doing so in present, both are making comprehensive and constant efforts to mitigate the challenge on their parts.

India, considering that it is among the top most pollution emitting countries, and will rise up on the charts in future, had been actively involved in resolving the issue. The business community, in particular, is taking the problem with both hands seeing immense opportunity the problem holds. For achieving success, businesses had started seeing the problem of climate change as an issue of hope, growth, innovation, and opportunity.

India's business houses like ITC, Suzlon, Tata Infosys, etc. had set an example among others by taking responsibility from the front, of securing climate from further major fluctuations. They expect to extract high profits by comprehensively contributing to the initiative of saving the planet. By taking some early commendable steps, it had shown its zeal towards achievement of its commitments. However, the efforts made so far, though appreciable, are not found to be ample enough, and businesses had get themselves ready for fulfilling much more and much larger responsibilities in future.

India and other emerging economies have to come forward to take the major issues relating to business and climate change seriously. The role of BRICS countries is of paramount significance. Any lapse on the part of the world may cause an unimaginable disaster that could be beyond the control of human being.

NOTES:

1. Synovate's research findings (on the basis of responses from more than 2,500 Filipino, Thai, and Indonesian respondents), exhibits that 79 percent of the respondents believe that climate change is indeed a matter of concern. In Philippines, there is general concern about climate change (82 percent), and in terms of responsibility, virtually everyone (96 percent) of those surveyed in Manila believed that it is up to the individual to reduce the effects of climate change. Thus, the respondents believe that the main cause of the earth's climate change are people themselves – human causes (waste, population increase, electricity, etc) and irresponsible practices that lead to deforestation and pollution; and in order to address climate change, most of the respondents acknowledge that it would mean changing the behavior of ordinary citizens. (Go, 2011) 

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