



*"Earth provides enough to satisfy every man's need,
but not every man's greed."*

- Mahatma Gandhi



Grey to Green: The Tata Climate Change Initiative

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Abstract

In mid-2008, the Tata group commenced the carbon foot printing and abatement exercise by setting up a Centre of Excellence in Tata Quality Management Services (TQMS). Initially it was thought that expensive talent from Tata Steel Europe based in India for an extended period would be required to lead this effort. However, it was subsequently found that a local team trained by external consultants and Tata Steel Europe experts could do just as well. Using an aggressive knowledge acquisition and dissemination strategy, an internal team of 350 climate change champions launched 51 Tata companies on a low carbon growth path by identifying reduction targets and abatement levers. TQMS has used this experience to create a commercial service offering which is now being used by many non-Tata companies.

Introduction

2007 will be known as the end of an era of unprecedented human growth and prosperity, the last prosperous phase before the collapse of global financial institutions like Lehman Brothers in 2008. It will also be known as the year when the Intergovernmental Panel on Climate Change (IPCC) stated with 90 % probability that that most of the warming we've seen since the mid-20th century had been caused by human activity—primarily fossil fuel combustion and changes in land use, such as deforestation. Thus IPCC concluded “warming of the climate system is unequivocal”.

Global warming was officially recognized as a problem in 1988, when the United Nations Environment Program established the IPCC. The environment, despite its vast spread and bounty, has very limited resources at its disposal. Without going into futile deliberations over the causes, we can say without a doubt that these resources are fast depleting. The IPCC Report (2007) referenced above also states that eleven of the twelve years from 1995 to 2006 rank among the twelve warmest years on record since 1850.

This was also the year when global warming took center stage at the 79th Academy Awards. Former United States Vice President Al Gore's documentary 'An Inconvenient Truth' won Academy Awards for Best Documentary and Best Original Song. He also received plenty of air time to urge people around the world to take action now to reduce greenhouse gas emissions. Later in the year he was awarded the 2007 Nobel Peace Prize jointly with the IPCC.

The senior management of the Tata Group was following these events with keen attention. In December 2007 itself, at the Annual Tata Business Excellence Convention, it was suggested that our companies play a responsible role in combating the menace of global warming, keeping in line with the Tata brand promise. They should examine their respective positions and aspire to become “leaders” in their respective industry's drive towards a low carbon world.

Global Business Response

Shortly thereafter, a high level Tata team led by Dr. JJ Irani, ex-Director, Tata Sons Ltd, and comprising CXO level executives from a number

of Tata companies e.g. Tata Chemicals, Tata Steel, Titan, TCS, others met with forward thinking organisations in London and Oslo to understand the business response to the threat of climate change. They met with companies that are working to deal with the climate change imbroglio as well as government agencies and urban planners who are devising solutions that are global and replicable in nature. Companies met included Siemens, Yara, Ikea, Standard Chartered Bank, Deutsche Bank etc.

The companies met during the tour estimated their carbon footprint starting from the vendors to its end customers thus adopting a life cycle approach. To reduce emissions, IKEA has encouraged smart thinking in many areas: optimizing packaging solutions to pack every container as full as possible with flat packs, locating stores so that customers and workers can use public transport to reach there and discounts for use of self-drive bio-fuel delivery vans.

All the companies met had very aggressive goals of reducing absolute emissions in a given time frame. For example, Yara has committed to a 25% reduction of GHG emissions by 2009 from its 2004 levels of 20mt.

Companies such as Siemens and Telenor, whose footprint is low, have committed to helping their customers lower their footprint. In 2008, products and solutions in Siemens' environmental portfolio saved 148 Million Tons of CO₂ for customers

The two banks met during this trip, Standard Chartered and Deutsche Bank, though being small emitters (as compared to manufacturing companies) buttress their position as "lighthouse organizations", given their vital role in providing finance to green business ventures.

All the organizations seem to believe that focus on carbon abatement will lead to emergence of many new opportunities. A few examples are as follows:

- IKEA sawmill waste, mixed with recycled plastic, produces a strong material that minimizes the use of resources.

- Statoil Hydro built one of the world's earliest carbon capture and sequestration (CCS) projects in Sleipner in 1996.
- Siemens has developed a portfolio of "recession proof" green businesses.
- Yara has built significant new business around their application technology that removes more NOx globally than the total emissions in Norway.
- Wilh. Wilhelmsen has developed a model of a low emission ship which will be powered by solar, wind and natural gas.
- The two banks met during the visit perceive financing of renewable energy projects to be a major business area.

The Tata Response

A Steering Committee (SC) of Senior Tata Executives was set up to guide the climate change effort across Tata Companies. Dr. JJ Irani was the Chairman of the SC and the members comprised other Tata Sons board members and CEOs of large Tata companies e.g. Tata Power, Tata Chemicals, and Tata Industries. The SC decided on a governance structure. The key action areas with progress till date are as given in the figure1 below:

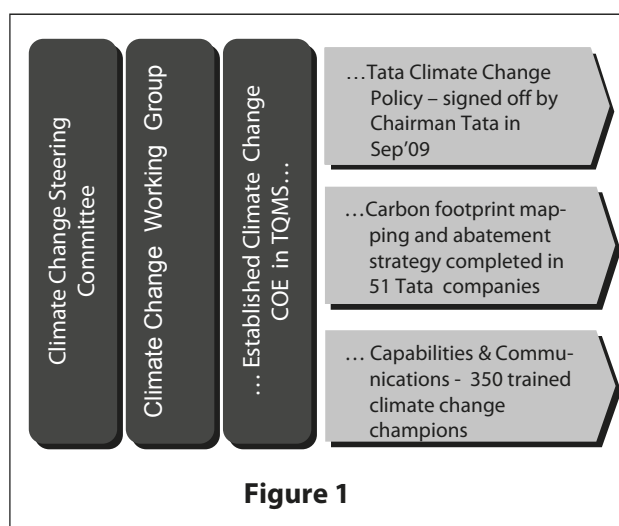


Figure 1

As shown in the above figure 1, the SC constituted a Working Group (WG) comprising the Chief Sustainability Officers of key Tata Companies and formed a Climate Change team under TQMS.

Further, to kick start the effort the SC also decided to hire two consultants of international repute to assist in :

- i. Measuring the carbon footprint of our Companies,
- ii. Identifying opportunities to reduce carbon intensity and develop long term low carbon growth strategies.

A climate change policy has been articulated at the group level. This functions as a common framework for change and ensures that the changes taking place are institutionalized and implemented in more companies. The policy takes note of the unique identity and market conditions of the industries that each company operates in; it thereby leaves the setting of carbon reduction targets to the company management. This encourages Tata companies to play a proactive role in the development of emerging climate change regulations along with the policy makers, usually government officials, and other stake holders like civil society, NGOs and customers. It also envisages a scenario where all key organizational decisions would be viewed through a “low carbon lens” e.g. vendor selection and would ultimately be reflected in the

performance management systems of Tata managers.

An important component of the rollout process has been capability building. This is a 2 part process where after class room training, the participants are deployed to do an actual carbon foot printing assignment. Knowledge transfer mechanisms were built into the consultancy contract mentioned above whereby they were required to participate in the Climate Change (CC) Champions training program. Tata Steel Europe also shared their experience in this program. Thus, 350 CC champions have been trained in 7 batches. CC champions undergo an intensive 3 day program at the end of which they have the skills to conduct carbon foot printing and abatement strategy exercise. Subsequently, CC champions are assigned a Tata company to apply their newly acquired skills and essentially replicate the work done by the external consultant. CC champions worked alongside with a mirror team from the host company as shown in the figure2 below. This also enhanced the pool of trained managers in the Tata group.

At a more strategic level, there is engagement with thinkers in the areas of technology, policy

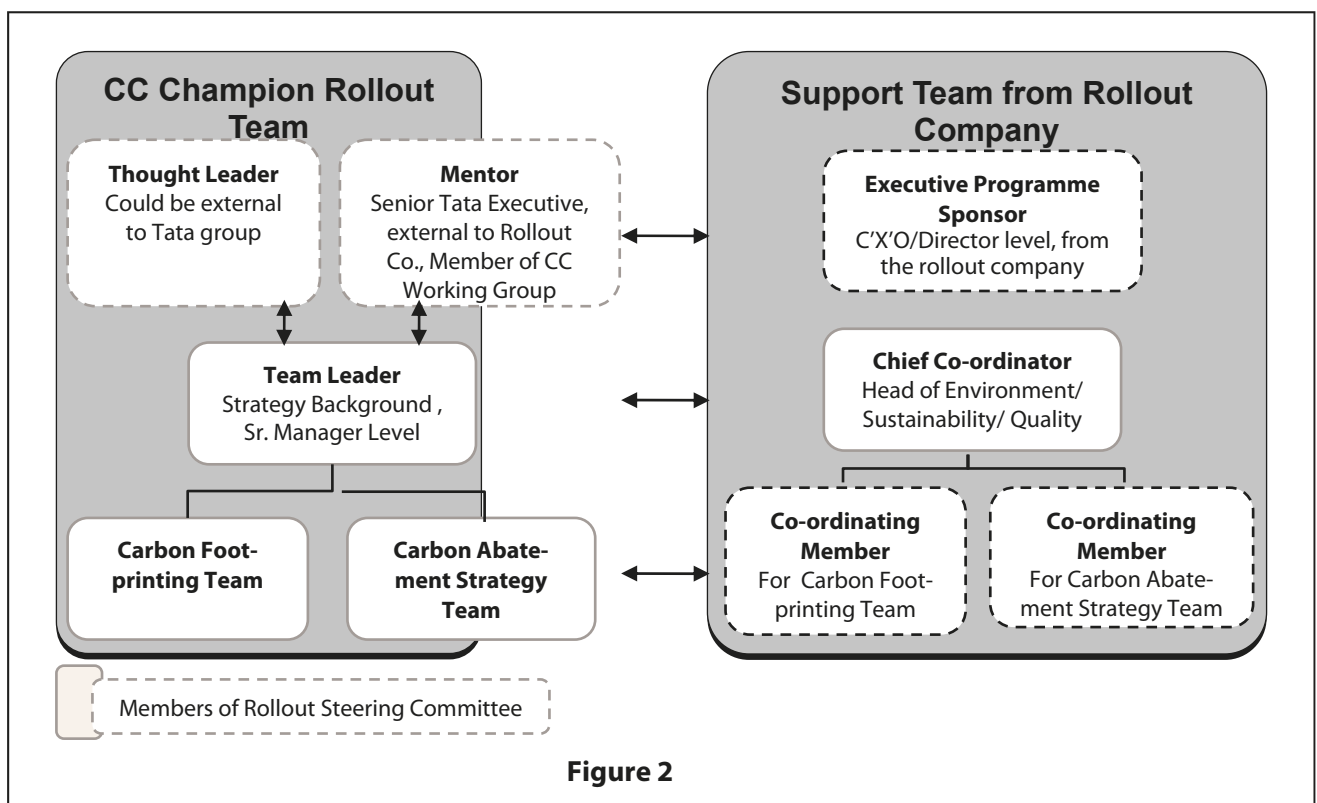


Figure 2

and business models that are relevant to a low carbon world

For e.g. In order to gain experience on various issues related to climate change, Tata top managers are participating in the renowned Cambridge Program for Sustainability Leadership (CPSL) and engaging with forward thinking companies like Siemens and think tanks. The themes, in general, are:

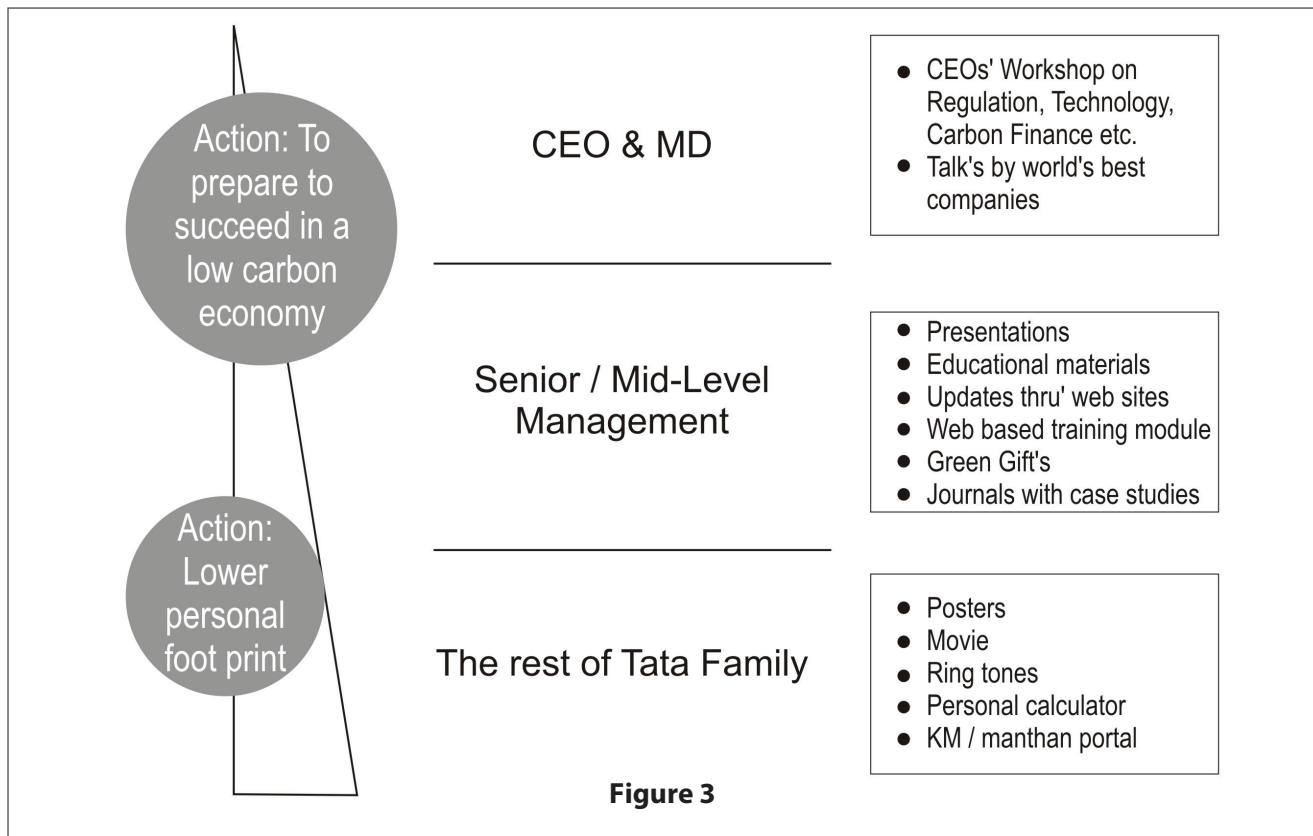
- Evolving knowledge on Climate Science
- Collaborative projects on sustainability ('Greening' Bombay House, electric vehicle systems, Green Township, improvements in steel processes, etc.)
- Generating Knowledge and sharing the best practices for evolving a strategic tool for climate change
- Exploring technical solutions for low carbon economy.

To push the regulatory agenda, we are a part of the Low Carbon Expert Group convened by the Planning Commission of the Government of India. This group has provided key inputs to the 12th Five Year Plan of the Government of India in terms

of reducing the specific emission of the country by 20 - 25 % as compared to the emissions in the base year of 2005. A similar effort is being made at the international level by participating in the steering committee of the Caring for Climate Initiative of United Nations Global Compact / United Nations Environment Program (UNEP).

The 3rd element of the rollout process has been a sustained communication process aimed at all Tata employees. This is depicted in the figure 3 below:

The earliest form of communication to engage the Tata community was to institute a contest to design the logo for the Climate Change group. There was much internal debate whether such a contest would elicit any response. Some were of the opinion that a professional agency be engaged without further ado. Much to our surprise, over 500 entries were received from all over the world where the Tata group is present and ultimately the chosen "green to grey" logo came from Titan, Bangalore. A low cost video titled 365 Environment Days, which had Tata top management like Mr. Gopalakrishnan, Mr. Muthuraman and Mr. Ramadorai explaining what they do in their daily routine to combat climate



change, was distributed to Tata entities globally. More recently, we sponsored an international film called “Eye of the Future”, which depicted children of various nationalities explaining what could be done to combat climate change. In keeping with the same vein that children are easier to mold than adults, a series of books for distribution to schools have also been prepared.

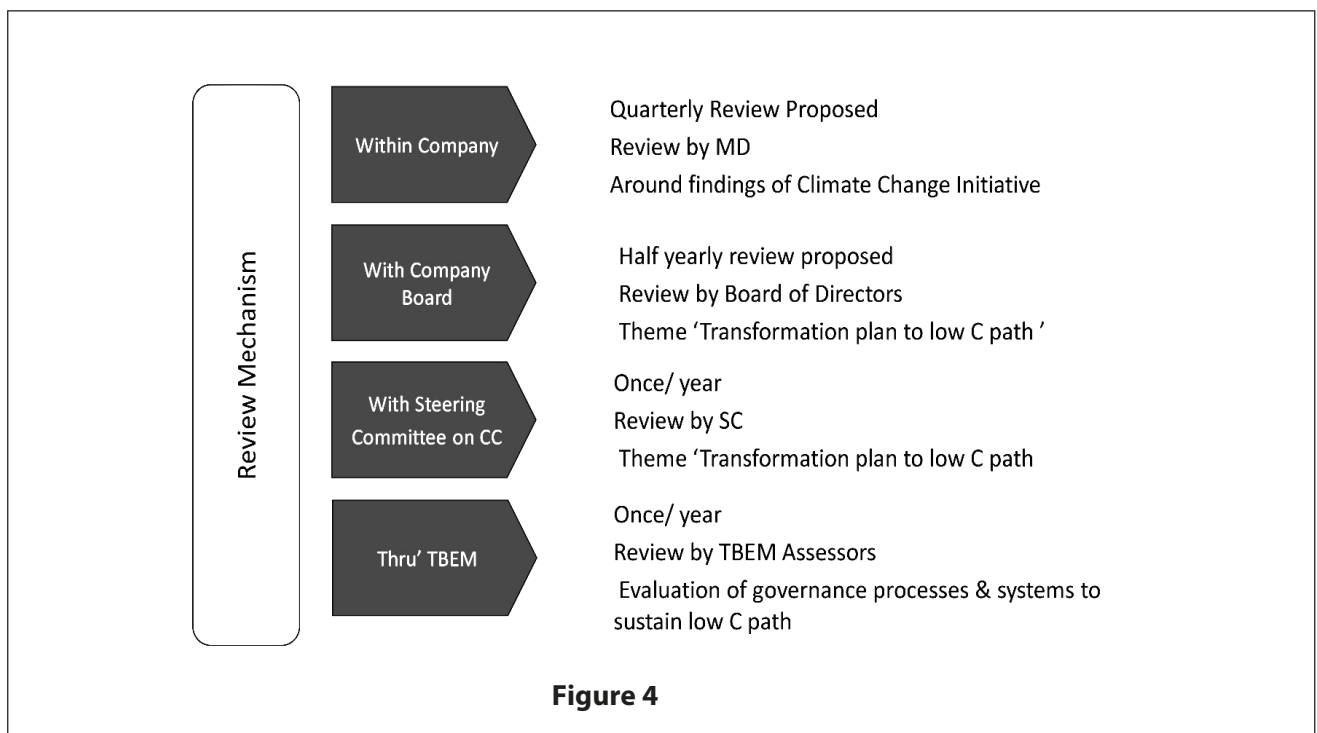
Every year the month of June which includes the World Environment day on 5th June is celebrated as the Tata Environment Month. The theme is the same as the one declared by United Nations Environment Program (UNEP) for the year. In 2012 it was Green Economy: Does it include YOU?

Starting with an explanation of what is economy in the first week, various facets were explained in the ensuing 3 weeks and how an individual can participate in its evolution. Besides printing thematic posters which are distributed to all Tata companies for printing locally with their logo, other events include expert talks and online competitions where not only the employee but his family is also encouraged to participate. Around the year activities include expert talks organized through the regional networking forum of Tata companies called the Tata Network Forum (TNF) and a detailed monthly electronic newsletter which gives the latest technical, policy

and financial update on climate change and sustainability issues.

Finally, what gets measured gets done. Therefore, a multi-level review and monitoring system has been instituted as given in figure 4 below:

A score card with lead and lag indicators is used to carry out the first 3 levels of review. Lead indicators include elements like investment in development of clean technology products while the lag indicators focus on their impact in reduction of emissions. The final level of review is through the annual assessment carried out under the Tata Business Excellence Model (TBEM). Without going into too many details, the TBEM is derived from the Malcolm Baldrige model tweaked to suit the unique character of the Tata group. It promotes a process view of the organization and measures its impact in terms of business results. Climate change / sustainability indicators have been woven into the existing model rather than creating a separate one. This is keeping with the stance that the corporate strategy of an organization should be made climate friendly / sustainable rather than encourage empire building by suggesting development of a standalone climate change / sustainability strategy.



Progress so far

The carbon footprint of 51 Tata companies has been estimated and their carbon management strategy has been developed. This would address almost 99 % of the group’s emission. Early estimates indicate that specific emission can be brought down by 10 - 15 % if Tata companies adopt abatement measures instead of going down the business-as-usual growth path. Taking a holistic view, the progress and key learning can be categorized into two areas. One in terms of implementing change management projects and the other in terms of setting abatement targets and identifying means of reaching them.

Implementing Change Management Projects

The “grey to green” journey is essentially a change management project encompassing the entire Tata group. The important lessons gleaned during this journey are as follows:

- The Indian corporate sector usually looks to the western world for expertise. In this case, it was originally envisaged that 2 expatriate employees of Tata Steel Europe would be deputed to India for 2 years to start and build up this project. The start of this project coincided with the global economic

downturn and unfortunately the experts were unable to join the team. Instead Tata Steel Europe experts participated as faculty of the Climate Change Champions training programme along with the consultants. Thus the execution of the programme was undertaken by the local employees who quickly went up the learning curve leading to major cost saving.

- The original team size including the 2 expatriates mentioned above was 7 members. In practice, the team size was only 4 members; moreover one member was released in 2010, again leading to cost savings.
- The carbon foot printing exercise in the remaining 47 companies was implemented by trained Tata managers. Assuming a minimum consultancy cost of ₹INR 3 million per company, a sum of ₹INR 150 million was saved. More important perhaps, is the confidence acquired by our managers in executing such projects.
- TQMS has been able to package the experience into a service offering for the market and contracts have already been received from major non – Tata companies.

Company	Decreasing Costs	Increasing Revenues
Tata Steel Ltd	Target of achieving 20% GHG emission reduction in the next decade. Portfolio of projects to recover waste heat from stove waste gas, coke dry quenching and blast furnace through top gas heat recovery turbines Beneficiation of raw materials	PV coated metal cladding for power generating zero carbon emission buildings. Special steels for the wind power and automobile industry.
Tata Power Ltd.	Selection of energy efficient super critical steam generators at their Mundra power station	Development of leading edge technology projects in renewable power generation like floating concentrated solar power plants
Tata Motors Ltd.	Use of regenerative test beds and benchmarking of utility systems such as plant air system	Development of hybrid and electric vehicles. Advanced fuel cells with on board hydrogen generation system.
Tata Chemicals Ltd	Target of reducing specific product emission by 20% over 10 years by energy efficiency, process integrations, recovery of by-products from wastes, low carbon intensity co-products/derivatives.	Joint effort by Tata Power, Tata Steel and Tata Chemicals to manufacture algae from carbon emissions. Various nano-technology applications like customized fertilizers, coatings for glass used in buildings, etc.
Tata Communications	Reduce electricity / water usage, business travel.	Telepresence solution to reduce / replace business travel
Indian Hotels Ltd	Reduce electricity / water usage, business travel.	Provide “Earth Rooms” to the environmentally sensitive guest
TCS	Reduce electricity / water usage, business travel.	Provide cutting edge IT solutions for smart grids, smart buildings, transportation, etc.

Table I

Growth in a Low Carbon World

The output of this exercise for each company can be summarized into 2 categories: one which reduces operating cost and second which increases revenues. In all cases the abatement levers have been prioritized and capital expenditure estimates provided. A few select examples are in the previous page on Table I.

The Way Ahead

The “grey to green” journey has been described as one of a thousand miles (University of Cambridge, Program for Sustainability Leadership). It would be appropriate to say that at present, only the first steps have been taken.

The following activities have been planned for the future:

- The scope of carbon foot printing exercise is being expanded to include the complete value chain from the vendors to the disposal of the equipment. In other words, measure the carbon emissions through the entire Life Cycle of the product. This is also known as “cradle to grave” emissions.
- Secondly, it is now realized that water is an increasingly scarce resource and a water foot-printing, sustainability impact and sustainability response exercise has commenced in Tata Chemicals, Tata Motors, Tata Power and Tata Steel.
- Active participation in the larger debate on framing of appropriate regulations in the area of climate change with civil societies, government bodies, international organizations and non-governmental organizations (NGOs)

While there are several issues that will need to be tackled in the future, one thing has become eminently clear: what is good for the climate is also good for business. The two are not mutually exclusive. For example, energy efficiency not only cuts emissions, but also brings costs down. Similarly, alternative energy is a growing business

opportunity in Europe and India, and if companies can develop sustainable models, it will benefit the climate and business. Thus while the journey began with the intent of doing the right thing as a socially responsible corporate house, it may well turn out that this has been the right thing to do for business as well.

References

- *The State of Sustainability Leadership 2011, University of Cambridge, Programme for Sustainability Leadership*
- *IPCC Fourth Assessment Report: Climate Change 2007 (AR4)*

About the Author

Arunavo Mukherjee has a Bachelor's degree in Electrical Engineering and an MBA from Indian Institute of Technology, Kharagpur and Carlson School of Management, University of Minnesota, Minneapolis, USA, respectively.

He first worked with the Calcutta Electric Supply Corporation (CESC) Ltd before joining the Energy Consulting group of TCS. He has worked extensively with Unocal Corporation (now a part of Chevron) and Gujarat State Petroleum Corporation (GSPC).

He was appointed as Chief Operating Officer of the India Natural Gas Company, a joint venture of Total, France, and Tata Power Company. He was selected in July 2008 as Vice President to lead the Tata group effort in combating climate change across 100 odd companies.

He is a Steering Committee member of the Caring for Climate group of UN Global Compact / UNEP. He has been a speaker in events organized by IEEE (USA), CII, and UNEP.

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