CARBON DISCLOSURE PROJECT

Carbon Disclosure Project Report 2007

India

On behalf of 315 investors with assets of $41 trillion

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Foreword
To the first India Report of the Carbon Disclosure Project

Climate change represents perhaps the most significant development challenge of the 21st century. Recent reports of the Intergovernmental Panel on Climate Change (IPCC) indicate that Asia and more specifically India will feel some major impacts of climate change and several of these are becoming increasingly evident. Estimates show that the overall costs of climate change amount to losing 5% or more of the world's GDP annually. If a wider range of risks or impacts are considered, the damage cost could be 20% of global GDP.

Business and Industry have a vital responsibility in making global efforts for climate protection successful. Equally critical is the role of the financial services sector which is identified as an aggregator of risks from climate change and needs to make climate change impacts integral to their decision making and investment policies.

This report reflects the variable understanding of the need for carbon disclosure within Indian industry. The responses from Indian companies have been mixed; there definitely is a greater appreciation of the opportunities for a paradigm shift in business models necessitated by climate change. While commercial benefits of engaging in carbon markets under the UN Framework have attracted both industry and the financial sector, the benefits of collating and disclosing carbon emissions needs to be further appreciated and applied.

It gives me satisfaction that WWF India, CII-ITC Centre of Excellence for Sustainable Development and Carbon Disclosure Project (CDP) have come together for the First Indian Report of the Carbon Disclosure Project. The aim of this project is to gradually improve information on voluntary disclosure of carbon emissions and evolve strategies for long-term mitigation and adaptation plans. At the same time, this report reiterates the need for working closely with business and industry and the financial sector to increase the aggregated involvement and to improve the base for affirmative action and self regulation.

It is hoped that this report will be read carefully by industry executives, financial investors, policy makers and members of civil society to gain further insights on climate change and its challenges. I wish the Carbon Disclosure Project success with its further efforts both in India and worldwide.

Jamshyd Godrej

Trustee, WWF India
Vice President WWF International

CDP Project 2007

This report is based on the submissions of 39 Indian corporations in response to the first information request sent by the Carbon Disclosure Project (CDP5) on 1st February 2007. This summary report, the full report and all responses from corporations are available without charge from www.cdproject.net. The contents of this report may be used by anyone provided acknowledgment is given.

CDP Members 2007

In 2007, CDP launched a Membership option for signatories. CDP Membership allows signatories to have a leading role in the development of CDP and gives the ability to perform improved comparative analysis of company responses through the new online database. The following investors are CDP Members in 2007:

CARBON DISCLOSURE PROJECT
MEMBER 2007

ABN AMRO Bank N.V. **Netherlands**

ABP Investments **Netherlands**

AIG Investments **U.S.**

ASN Bank **Netherlands**

AXA Group **France**

Black Rock **U.S.**

BNP Paribas Asset Management (BNP PAM) **France**

BP Investment Management Limited **UK**

Caisse de Dépôts et Placements du Québec **Canada**

Caisse des Dépôts **France**

California Public Employees Retirement System **U.S.**

California State Teachers Retirement System **U.S.**

Calvert Group **U.S.**

Canada Pension Plan Investment Board **Canada**

Catholic Super **Australia**

Ethos Foundation **Switzerland**

Folksam Asset Management **Sweden**

Generation Investment Management **UK**

Hermes Investment Management **UK**

HSBC Holdings plc **UK**

KLP Insurance **Norway**

London Pensions Fund Authority **UK**

Merrill Lynch **U.S.**

Morgan Stanley **U.S.**

Morley Fund Management **UK**

Neuberger Berman **U.S.**

Newton Investment Management Limited **UK**

Pictet Asset Management **Switzerland**

Rabobank **Netherlands**

Robeco **Netherlands**

SAM Group **Switzerland**

Schroders **UK**

Signet Capital Management Ltd **UK**

Sompo **Japan**

Insurance Inc. **Japan**

Swiss Reinsurance Company **Switzerland**

The Ethical Funds Company **Canada**

The RBS Group **UK**

Zurich Cantonal Bank **Switzerland**

CDP Signatories 2007

315 investors were signatories to the CDP5 information request dated 1st February 2007 including:

Aachener Grundvermogen Kapitalanlagegesellschaft mbH Germany

Aberdeen Asset Managers UK

ABN AMRO Bank N.V. Netherlands

ABP Investments Netherlands

ABRAPP Associação Brasileira das Entidades Fechadas de Previdência Complementar Brazil

Acuity Investment Management Inc Canada

Aegon N.V. Ntherlands

Aeneas Capital Advisors U.S.

AIG Investments U.S.

Alcyone Finance France

Allianz Group Germany

AMP Capital Investors Australia

AmpegaGerling Investment GmbH Germany

ANBID-National Association of Brazilian Investment Banks Brazil

ASN Bank Netherlands

Astra Investimentos Ltda Brazil

Australia and New Zealand Banking Group Limited Australia

Australian Ethical Investment Limited Australia

Australian Reward Investment Alliance (ARIA) Australia

Aviva plc UK

AXA Group France

Baillie Gifford & Co. UK

Banco Bradesco S.A. Brazil

Banco do Brazil Brazil

Banco Fonder Sweden

Banco Pine S.A. Brazil

Bank Sarasin & Co, Ltd Switzerland

Barclays Group UK

BayernInvest Kapitalanlagegesellschaft mbH Germany

BBC Pension Trust Ltd UK

Beutel Goodman and Co. Ltd Switzerland

Black Rock U.S.

BMO Financial Group Canada

BNP Paribas Asset Management (BNP PAM) France

Boston Common Asset Management, LLC U.S.

BP Investment Management Limited UK

Brasilprev Seguros e Previdência S.A. Brazil

British Coal Staff Superannuation Scheme UK

British Columbia Investment Management Corporation (bcIMC) Canada

BT Financial Group Australia

BVI Bundesverband Investment und Asset Management e.V. Germany

CAAT Pension Plan Canada

Caisse de Dépôts et Placements du Québec Canada

Caisse des Dépôts France

Caixa Econômica Federal Brazil

California Public Employees Retirement System U.S.

California State Teachers Retirement System U.S.

California State Treasurer U.S.

Calvert Group U.S.

Canada Pension Plan Investment Board Canada

Canadian Friends Service Committee Canada

Carlson Investment Management Sweden

Carmignac Gestion France

Catholic Super Australia

CCLA Investment Management Ltd UK

Central Finance Board of the Methodist Church UK

Ceres U.S.

CERES-Fundação de Seguridade Social Brazil

Cheyne Capital Management (UK) LLP UK

Christian Super Australia

CI Mutual Funds Signature Funds Group Canada

CIBC Canada

Citizens Advisers Inc U.S.

ClearBridge Advisers Social Awareness Investment U.S.

Close Brothers Group plc UK

Comité syndical national de retraite Bâtirente Canada

CommerzbankAG Germany

Connecticut Retirement Plans and Trust Funds U.S.

Co-operative Insurance Society UK

Credit Agricole Asset Management France

Credit Suisse Switzerland

Daegu Bank South Korea

Daiwa Securities Group Inc. Japan

Deka FundMaster Investmentgesellschaft mbH Germany

Deka Investment GmbH Germany

DekaBank Deutsche Girozentrale Germany

Delta Lloyd Investment Managers GmbH Germany

Deutsche Bank Germany

Deutsche Postbank Privat Investment Kapitalanlagegesellschaft mbH Germany

Development Bank of Japan Japan

Development Bank of the Philippines (DBP) Philippines

Dexia Asset Management France

DnB NOR Norway

Domini Social Investments LLC U.S.

DPG Deutsche Performancemessungs-Gesellschaft für Wertpapierportfolio mbH Germany

DWS Investment GmbH Germany

Environment Agency Active Pension Fund UK

Epworth Investment Management UK

Erste Bank der Oesterreichischen Sparkassen AG Austria

Ethos Foundation Switzerland

Eureko B.V. Netherlands

Eurizon Capital SGR Italy

Evli Asset Management Finland

F&C Asset Management UK

FAELCE Fundação Coelce de Seguridade Social Brazil

FAPES Fundação de Assistencia e Previdencia Social do BNDES Brazil

Fédéris Gestion d'Actifs France

FIPECq Fundação de Previdência Complementar dos Empregados e Servidores Brazil

First Affirmative Financial Network, LLC U.S.

First Swedish National Pension Fund (AP1) Sweden

First Rand Ltd. South Africa

Five Oceans Asset Management Pty Limited Australia

Folksam Sweden

Fondaction Canada

Fonds de Réserve pour les Retraites FRR France

Fortis Investments Belgium

Fourth Swedish National Pension Fund, AP4 Sweden

Frankfurt Trust Investment-Gesellschaft mbH Germany

Frankfurter Service Kapitalanlage-Gesellschaft mbH Germany

Franklin Templeton Investment Services GmbH Germany

Frater Asset Management South Africa

FUNCEF Brazil

Fundação Assistencial e Previdenciária da Extensão Rural no Rio Grande do Sul-FAPERS Brazil

Fundação Atlântico de Seguridade Social Brazil

Fundação Banrisul de Seguridade Social Brazil

Fundação CESP Brazil

Fundação Codesc de Seguridade Social Brazil

Fundação Copel de Previdência e Assistência Social Brazil

Fundação Corsan dos Funcionários da Companhia Riograndense de Saneamento Brazil

Fundação Real Grandeza Brazil

Fundação Rede Ferroviaria de Seguridade Social-Refer Brazil

Fundação São Francisco de Seguridade Social Brazil

Fundação Vale do Rio Doce de Seguridade Social-VALIA Brazil

Gartmore Investment Management plc UK

Generation Investment Management UK

Genus Capital Management U.S.

Gjensidige Forsikring Norway

Goldman Sachs & Co. U.S.

Green Century Capital Management U.S.

Green Kay Asset Management UK

Groupe Investissement Responsable Inc. Canada

Guardians of New Zealand Superannuation New Zealand

Hastings Funds Management Limited Australia

Helaba Invest Kapitalanlageggesellschaft mbH Germany

Henderson Global Investors UK

Hermes Investment Management UK

HESTA Super Australia

Hospitals of Ontario Pension Plan (HOOPP) Canada

HSBC Holdings plc UK

I.DE.A.M Integral Dévelopment Asset Management France

Ilmarinen Mutual Pension Insurance Company Finland

Indexchange Investment AG Germany

Industry Funds Management Australia

ING Investment Management Europe Netherlands

Inhance Investment Management Inc Canada

Insight Investment Management (Global) Ltd UK

Instituto Infraero de Seguridade Social-INFRAPREV Brazil

Instituto Sebrae De Seguridade Social-SEBRAEPREV Brazil

Interfaith Center on Corporate Responsibility U.S.

Internationale Kapitalanlagegesellschaft mbH Germany

Jarislowsky Fraser Limited Canada

Jupiter Asset Management UK

KBC Asset Management NV Belgium

KLP Insurance Norway

KPA AB Sweden

La Banque Postale AM France

LBBW- Landesbank Baden-Württemberg Germany

Legal & General Group plc UK

Libra Fund U.S.

Light Green Advisors, LLC U.S.

Local Authority Pension Fund Forum UK

Local Government Superannuation Scheme Australia

Lombard Odier Darier Hentsch & Cie Switzerland

London Pensions Fund Authority UK

Macif Gestion France

Maine State Treasurer U.S.

Man Group plc UK

Maryland State Treasurer U.S.

Meag Munich Ergo Kapitalanlagegesellschaft mbH Germany

Meeschaert Asset Management France

Meiji Yasuda Life Insurance Company Japan

Meritas Mutual Funds Canada

Merrill Lynch U.S.

Metzler Investment Gmbh Germany

Midas International Asset Management South Korea

Mitsubishi UFJ Financial Group (MUFG) Japan

Mitsui Sumitomo Insurance Co Ltd Japan

Mizuho Financial Group, Inc. Japan

Monte Paschi Asset Management S.G.R.-S.p.A Italy

Morgan Stanley Investment Management U.S.

Morley Fund Management UK

Münchner Kapitalanlage AG Germany

Munich Re Group Germany

National Australia Bank Limited Australia

National Bank of Kuwait Kuwait

National Pensions Reserve Fund of Ireland Ireland

Natixis France

Nedbank Group South Africa

Needmor Fund U.S.

Neuberger Berman U.S.

New York City Employees Retirement System U.S.

New York City Teachers Retirement System U.S.

New York State Common Retirement Fund U.S.

Newton Investment Management Limited UK

NFU Mutual Insurance Society UK

Nikko Asset Management Co., Ltd. Japan

Norinchukin Zenkyouren Asset Management Co., Ltd Japan

Northern Trust U.S.

Old Mutual plc UK

Ontario Municipal Employees Retirement System (OMERS) Canada

Ontario Teachers Pension Plan Canada

Opplysningsvesenets fond (The Norwegian Church Endowment) Norway

Oregon State Treasurer U.S.

Orion Energy Systems, Ltd U.S.

Pax World Funds U.S.

Pension Plan for Clergy and Lay Workers of the Evangelical Lutheran Church in Canada Canada

PETROS-The Fundação Petrobras de Seguridade Social Brazil

PGGM Netherlands

Phillips, Hager & North Investment Management Ltd. Canada

PhiTrust Active Investors France

Pictet Asset Management Switzerland

Pioneer Investments Kapitalanlagegesellschaft mbH Germany

Portfolio 21 and Progressive Investment Management U.S.

Portfolio Partners Australia

Prado Epargne France

PREVI Caixa de Previdência dos Funcionários do Banco do Brasil Brazil

Prudential Plc UK

PSP Investments Canada

Rabobank Netherlands

Railpen Investments UK

Rathbone Investment Management / Rathbone Greenbank Investments UK

Reynders McVeigh Capital Management U.S.

RLAM UK

Robeco Netherlands

Rock Crest Capital LLC U.S.

Royal Bank of Canada Canada

SAM Group Switzerland

Samsung Investment Trust Management Co., Ltd. South Korea

Sanlam Investment Management South Africa

Sauren Finanzdienstleistungen GmbH & Co. KG Germany

Savings & Loans Credit Union (S.A.) Limited. Australia

Schroders UK

Scotiabank Canada

Scottish Widows Investment Partnership UK

SEB Asset Management AG Germany

Second Swedish National Pension Fund (AP2) Sweden

Seligson & Co Fund Management Plc Finland

Service Employees International Union U.S.

Seventh Swedish National Pension Fund (AP7) Sweden

Shinhan Bank South Korea

Shinkin Asset Management Co., Ltd Japan

Shinsei Bank Japan

Siemens Kapitalanlagegesellschaft mbH Germany

Sierra Club Mutual Funds U.S.

Signal Iduna Gruppe Germany

Signet Capital Management Ltd UK

SNS Asset Management Netherlands

Société Générale France

Société Générale Asset Management UK UK

Sompo Japan Insurance Inc. Japan

Standard Chartered PLC UK

Standard Life Investments UK

State Street Corporation U.S.

State Treasurer of North Carolina U.S.

Storebrand Investments Norway

Stratus Banco de Negócios Brazil

Sumitomo Mitsui Financial Group Japan

Sumitomo Trust & Banking Japan

Superfund Asset Management GmbH Germany

Swedbank Sweden

Swiss Reinsurance Company Switzerland

Swisscanto Switzerland

TD Asset Management Inc. and TD Asset Management USA Inc. Canada

Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF) U.S.

Terra Kapitalforvaltning ASA Norway

TfL Pension Fund UK

The Bullitt Foundation U.S.

The Central Church Fund of Finland Finland

The Collins Foundation U.S.

The Co-operative Bank UK

The Co-operators Group Ltd Canada

The Daly Foundation Canada

The Dreyfus Corporation U.S.

The Ethical Funds Company Canada

The Local Government Pensions Institution (LGPI)(keva) Finland

The RBS Group UK

The Russell Family Foundation U.S.

The Shiga Bank, Ltd (Japan) Japan

The Standard Bank Group Limited South Africa

The Travelers Companies, Inc. U.S.

The United Church of Canada-General Council Canada

The Wellcome Trust UK

Third Swedish National Pension Fund (AP3) Sweden

Threadneedle Asset Management UK

Tokio Marine & Nichido Fire Insurance Co., Ltd. Japan

Trillium Asset Management Corporation U.S.

Triodos Bank Netherlands

Tri-State Coalition for Responsible Investing U.S.

UBS AG Switzerland

Unibanco Asset Management Brazil

UniCredit Group Italy

Union Asset Management Holding Germany

Unitarian Universalist Association U.S.

United Methodist Church General Board of Pension and Health Benefits U.S.

Universal Investment Gesellschaft mbH Germany

Universities Superannuation Scheme (USS) UK

Vancity Group of Companies Canada

Vermont State Treasurer U.S.

VicSuper Proprietary Limited Australia

Vital Forsikring ASA Norway

Wachovia Corporation U.S.

Walden Asset Management, a division of Boston Trust and Investment Management Company U.S.

Warburg-Henderson Kapitalanlagegesellschaft mbH Germany

West Yorkshire Pension Fund UK

WestLB Mellon Asset Management (WMAM) Germany

Winslow Management Company U.S.

YES BANK Limited India

York University Pension Fund Canada

Zurich Cantonal Bank Switzerland

Undertaken on behalf of 315 institutional investors, representing over USD 41 trillion of assets under management, the first Carbon Disclosure Project (CDP) Report in India provides global investors with an analysis of how India's largest companies are responding to climate change. This report summarises the responses from Indian companies to the CDP5 questionnaire.

Executive Summary

35% of the 110 Indian Companies questioned responded to CDP5

CDP was established in 2000 and provides a secretariat for institutional investors to request information on climate change from the companies in which they invest. CDP has issued four previous annual information requests to the 500 largest global corporations (FT500). In 2007, CDP expanded to India in collaboration with the World Wide Fund for Nature- India (WWF-India) and the Confederation of Indian Industry (CII) ITC Center of Excellence for Sustainable Development (CESD). This project targeted 110 of India's largest companies, including 51 from high impact sectors, by including them in the 2007 CDP information request to solicit information on:

- opportunities and risks from climate change and strategies adopted to respond to these
- direct and indirect greenhouse gas (GHG) emissions
- emission reduction strategies
- corporate-level climate change management and governance

The CDP questionnaire was divided into two parts: Part A applied to all companies while Part B was for companies from high impact sectors.

Response Rate and Quality

The overall response rate was 35% (39) - an encouraging response rate given that this was the first ever CDP request to Indian companies. These 39 companies from 17 sectors, included 18 companies from 8 high impact sectors. The response rate from high impact sectors was similar to the entire sample although there were wide variations across sectors ranging from 25% (diversified chemicals) to 56% (electric utilities). The response rate from banks and diversified financial companies was 44% - higher than the average for all sectors which is positive given their potentially significant role in shaping corporate responses to issues such as climate change.

The depth and quality of responses was mixed with some companies displaying leadership qualities. A dozen companies provided comprehensive responses with some of them (such as Essar Oil, Infosys, JSW Steel and Tata Steel) displaying leadership qualities in reporting. Response quality is expected to improve further in the coming years once companies gain familiarity with the CDP process, and importantly, start engaging more closely with climate change-related issues. Given the recognition of climate change-related opportunities and risks by Indian companies as observed from the responses, it is only a matter of time before this improvement occurs.

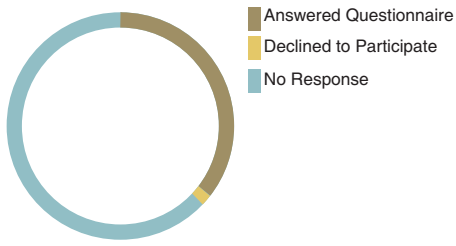
Key Findings

79% (31) of the responding Indian companies perceive commercial risks arising from climate change. The principal risks identified were: (a) regulatory- where regulation to encourage the reporting and reduction of GHG emission is expected; (b) physical and operational- where risks were identified to company premises/ infrastructure and through resource shortages; and, (c) other risks- mainly the risk of consumer preferences shifting towards companies considered more environmentally responsible.

85% (33) of the responding Indian companies perceive commercial opportunities around climate change. Opportunities are seen in terms of developing new low carbon products, exploiting Carbon Development Mechanism (CDM) potential, expanding into carbon finance and introducing energy and material efficiency in operations.

74% (29) of the responding Indian companies claim to have devised strategies to manage the emerging opportunities and risks. As perhaps one would expect, the strategies mirror the opportunities. While some companies' strategies are specific to their business units, others have more generic strategies such as having dedicated staff and departments for carbon.

CDP India Response Rate



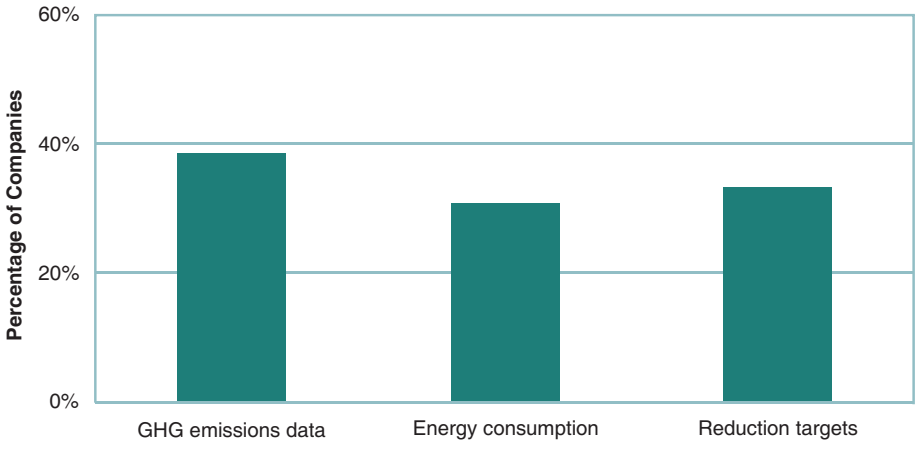
38% (15) of responding companies reported Scope 1 GHG emission data. The number of companies that reported Scope 2 and Scope 3 GHG emission data was lower- 23% (9) and 18% (7), respectively. The majority of the companies that reported GHG emission data had used the GHG Protocol methodology. Non-availability of information and difficulty in obtaining the same were cited as the key reasons for not providing the GHG emission data by most companies. Disclosure may be expected to improve following increased familiarity with measurement tools and protocols.

Total GHG Scope 1 and 2 CO2e emissions reported by the responding companies are approximately 35.36 million tonnes. A total of 179.29 million tonnes CO2e were reported from Scope 3 activities (as compared to 1,881 million tonnes of CO2e emissions from India as estimated by the Climate Analysis Indicators Tool of the World Resources Institute). This is understandable given Indian companies are not used to measuring their emissions and we expect the number of emissions reported to CDP to increase year on year.

33% (13 including 6 from the high impact sector) of all the responding companies, have set GHG emission reduction targets for themselves and have taken steps towards voluntarily offsetting these emissions. Most had defined these as percentage reduction in GHG emissions or energy consumption though there were some which set their target as being carbon neutral.

Emission trading opportunities are being considered by 46% (18) of the responding companies. 21% (8) of the responding companies have CDM projects at various stages in pipeline. Most financial sector respondents are considering opportunities of carbon finance, advisory, and financing clean and renewable energy projects.

Percentage of the responding Companies that reported GHG Emission Data, Energy Consumption and have Reduction Targets



1. The GHG emission data provided to CDP has not always been externally verified or checked by CDP therefore its accuracy may vary depending on the measurement system used by each company.

26% (10) of the responding Indian companies provided details of emissions intensity. GHG emission per unit of output or input was the most common emission intensity ratio considered by the responding companies. Two companies reported emission intensity as a percentage of base year emissions.

While 31% (12) companies reported their energy consumption, only 23% (9) companies reported energy costs - a total of USD 2.6 billion per annum. The disclosure of energy consumption information confirms that the oil & gas, beverages & tobacco and steel sector companies are at a greater risk of reduced profits if energy costs increase.

38% (15) of the responding companies have allocated board or upper management level responsibilities for climate change issues. This is an encouraging finding as it indicates the importance assigned to environmental issues within the company.

Conclusion

The results from the first CDP India project represent a positive start to the work of Indian corporations measuring, reporting and managing greenhouse gas emissions. Some companies are already engaged with this important issue and are well prepared which is noteworthy given an absence of regulation in India and the fact that this was the first time Indian companies have received a request for measurement and disclosure from their investors. However, no response from 65% (71) companies to the CDP5 questionnaire in 2007, makes it clear that an enormous amount of work still need to be done by Indian companies and investors to catch up with their global peers. Of concern for investors is the fact that climate change is clearly going to affect some of the non-responding companies and it may be that these companies do not have adequate risk management strategies in place or are missing significant opportunities to benefit from the shift to a low carbon economy.

The findings make the case for increased efforts towards awareness raising and training on GHG accounting (deploying available approaches such as the GHG Protocol) for Indian companies. Indian companies could benefit from the sharing of international experiences, especially with a focus on the benefits derived by companies that undertake GHG accounting and management.

Clearly, there are challenges around how Indian companies' measure GHG emissions and set emission reduction targets. Continued CDP - WWF India - CII CESD collaboration will play an important role in progressing such action through the process of requesting and monitoring Indian companies' response to climate change issues, GHG emission measurement, reduction and reporting. Encouragingly, there is evidence from the CDP survey of how Indian companies view the climate change challenge and how keen they are to capitalize on the opportunities CDM presents.

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1 CDP provides a coordinating secretariat and innovative forum for investor and corporate collaboration on Climate Change. Based on answers to its questionnaire, CDP provides the investment community with information about corporations' greenhouse gas emissions and Climate Change management strategies. Through CDP's database, this information is available in a comparable format that adds value for investors and a wide range of stakeholders.

CDP's mission is to facilitate a dialogue between investors and corporations, supported by high quality information from which a rational response to Climate Change will emerge.

The Carbon Disclosure Project (CDP)

In February 2007, CDP issued its fifth information request on behalf of 315 institutional investors with assets of USD 41 trillion under management. The request was sent to 2,400 of the largest quoted companies in the world by market capitalization for disclosure of investment-relevant information concerning the risks and opportunities facing these companies due to Climate Change. These companies included the largest listed companies in Asia, Australia, Brazil, Canada, France, Germany, India, Italy, Japan, New Zealand, Scandinavia, South Africa, Switzerland, UK, US, and the Electric Utilities and Transport Sectors.

As in previous years the request focused upon the issues CDP has identified in conjunction with many signatory investors, corporations and other experts as being most pertinent to the effect of Climate Change on company value. Those issues include regulatory risk/opportunity (e.g. limits on emissions); physical risk/opportunity (e.g. changes in weather patterns impacting operations); consumer sentiment risk/opportunity (e.g. reputation); total company wide global greenhouse gas emissions and steps taken to manage and reduce emissions.

USD 41 trillion of assets under management represents more than one third of total global invested assets and is a marked increase from the USD 4.5 trillion that participated in the first CDP request in 2002.

76% of FT500 companies and a total of 1,300 corporations answered the fifth CDP request in 2007, evidencing a significant increase in support for CDP's work from the 45% of FT500 companies and 235 corporations that answered the first request in 2002.

Having launched at No.10 Downing Street in 2000, CDP has become the global standard mechanism by which companies report their greenhouse gas emissions to investors. Its process has been applauded by Al Gore (Former US Vice President), Sir John Bond (then Chairman HSBC), Jeff Immelt (CEO, General Electric), Angela Merkel (German Chancellor) and Tony Blair (former UK Prime Minister) among others. CDP is proud to have assisted the pioneering efforts of global investors in creating this comprehensive and international system of disclosure.

CDP data has also enabled stakeholders such as policymakers, service providers, and NGO's to accelerate their own initiatives. Last year CDP reports were produced in English, French, German, Japanese and Portuguese and launched at a series of high profile events in the main capital markets in the world. CDP now hosts the largest registry of corporate greenhouse gas data in the world, and this information along with reports analyzing it can be downloaded free of charge at www.cdproject.net.

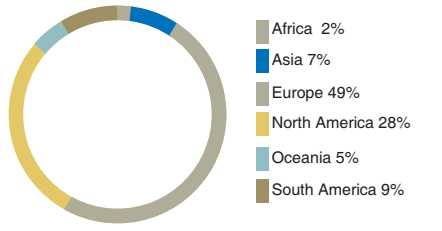
The CDP Secretariat extends sincere thanks to the signatory investors, responding corporations and regional partners for their participation in CDP5.

New CDP Initiatives in 2007

In addition to the expansion of its existing activity in 2007, CDP is delighted to have evolved its service offering in a number of exciting directions:

Improved database. CDP is launching a user-friendly interface to its comprehensive database of responses. This will enable users to easily and quickly perform comparative analysis by sorting company information by Sector, geography, emissions and the CDP questions.

CDP 5 Signatories by Region



"The aim of CDP is to gradually improve information on CO2 emissions and climate strategies as well as to initiate long-term plans for the future. I wish the Carbon Disclosure Project success with its further efforts both in Germany and worldwide."

Angela Merkel
German Chancellor

CDP Membership. CDP is now providing a premium service for those signatory investors who have become CDP members. This service provides members with enhanced recognition and access to the entire functionality of the database.

Supply Chain Initiative. In 2007, CDP was delighted to enter into partnership with Wal-Mart Stores to send the CDP information request to a subset of their suppliers. This contract represents the start of an exciting development for CDP as it begins to mirror its activity with shareholders and corporations via corporations and suppliers. The Wal-Mart work is now being developed for broader reach and impact with the launch of the Supply Chain Leadership Collaboration project (SCLC project) aimed at working with key Sector leaders including: Retail, Brands, Aviation, Automotive and Government among others. This work will help identify and reduce emissions within their supply chains. The CDP Secretariat expresses sincere thanks to Wal-Mart for their leadership in developing this new system for corporate disclosure of emissions from supply chains

Climate Disclosure Standards Board (CDSB). CDP became a member of the CDSB consortium convened by the World Economic Forum in January 2007 and has been funded by the UK Department for Environment to provide the Secretariat to CDSB, supporting its activities focused upon Climate Change reporting standards.

Going Forward CDP's primary goal is to continue to improve the quality and quantity of responses for its core disclosure activity and in doing so better inform the decision-making of investors and corporations regarding the implications of Climate Change.

CDP will also continue to respond to stakeholder requests to expand and in addition to the new initiatives for 2007 is developing further projects including:

- expansion of the CDP process into further geographies and Sectors.
- expansion of the CDP process into private equity aprivate companies.
- workshops for corporations and investors.
- further development of the CDP database
- assisting Pension Funds to develop mandates incorporating Climate Change criteria

CDP would be delighted to hear from parties interested in participating or partnering with CDP and invites them to approach the Project through info@cdproject.net

"The first step towards managing carbon emissions is to measure them. Because in business what gets measured gets managed. The Carbon Disclosure Project has played a crucial role in encouraging companies to take the first steps in that measurement and management path. If more businesses progress further down that measurement and management path, within the context of public policy which spurs on the business leaders and drags up the business laggards, then we will be able and at surprisingly small economic cost to offset the dangers which Climate Change poses to our world."

Lord Adair Turner,
Standard Chartered plc

"It's not surprising that investors are worried and that they are supporting the Carbon Disclosure Project. In BT we share their concern and we have good business reasons for doing so. We have a huge investment in the UK telecommunications infrastructure and that will be increasingly at risk… the Carbon Disclosure Project does us all a great service in bringing these matters to the attention of the investment and business communities. It is an important catalyst for change the change without which the world will be a very dangerous place.

"Sir Christopher Bland,
Chairman BT Group

"…the members of the Carbon Disclosure Project have recognised that the cost benefit analysis points to it being in the interest of business to take action. The growth of the Carbon Disclosure Project itself shows that investors are increasingly aware of the impact Climate Change will have on shareholder value... this is a project that has considerable momentum and that in itself is significant."

Rt Hon Margaret Beckett MP,
then Secretary of State for Environment, Food & Rural Affairs

"CDP works to improve the information flow, seeks to improve City engagement, to improve understanding and ultimately to improve economic performance… and it tackles it at the highest level with a cross border span, with force and with directness… CDP represents a very positive aspect of shareholder engagement and if there are more shareholders ready to sign up that can only be, from my perspective, a very good thing.

"Derek Higgs,
author Higgs Report on Corporate Governance

"Initiatives such as the Carbon Disclosure Project (CDP) can play a meaningful role in our shared endeavours to reduce greenhouse gas emissions. The project shows that both companies and investors have key roles to play. It is very positive and inspiring that the capital markets are considering climate related aspects more and more in their investment decisions. It proves that the climate challenge is not only a matter of technology it is also an important economic issue. As Deputy Prime Minister and Minister of Enterprise and Energy it is especially encouraging to see that companies go ahead without state intervention."

Maud Olofsson,
Deputy Prime Minister Sweden

"It has been a really interesting experience to watch the development of the Carbon Disclosure Project and I congratulate those who have worked so hard. It's extremely significant because there is a major shift in awareness of the climate crisis and the need to integrate the behavior of companies public and private towards the climate crisis, both it's risks and it's opportunities in the investment market place and in the business market place generally."

Al Gore,
speaking at the CDP2006 launch in New York

"CDP's reporting mechanism offers a trusted solution for consistent and transparent reporting of our energy and carbon numbers, as well as a way to share our reduction strategies with our shareholders and other companies. News Corp. is still at the very beginning of our energy and Climate Change work and we're delighted to have access to the wealth of information that CDP provides for us to learn from."

News Corporation

2

In this section a brief introduction is provided to Climate Change and the Kyoto Protocol. Climate change risks and opportunities are experienced differently both across and within sectors and are a function of the nature of the business, physical location and the regulatory environment. A case for the collection and disclosure of GHG emissions is made for Indian companies.

Climate Change and the Kyoto Protocol

The year 2005 was recorded as the hottest in over a century and the Intergovernmental Panel on Climate Change (IPCC) in its Fourth Assessment report projects a rise between 1.1 to 6.4^{0}C in global mean temperature during the 21st Century- a change that experts predict will lead to unprecedented warming and impacts on ice caps, glaciers, rainfall patterns and intensification of tropical cyclones which in turn will have serious implications for food security, health and resource availability. Climate change is now widely accepted as being caused by the release of greenhouse gases (GHGs) from unplanned human interventions, for the most part the highly inefficient combustion of fossil fuels.

Climate Change and India

An assessment of the current and projected trends of GHG emission from India and some selected countries indicates that though Indian emissions grew at the rate of 4 per cent per annum during 1990 and 2000 period and are projected to grow further to meet the national developmental needs, the absolute level of GHG emissions in 2020 will be below 5 per cent of global emissions and the per capita emissions will still be low compared to most of the developed countries as well as the global average.

India will undergo enormous change over the coming half century as its population (already a sixth of the world total) grows to eclipse that of China, and as it seeks to eradicate poverty through economic development and the widespread provision of commercial energy. The manner in which India manages these changes will have a major impact on the health of the global climate.

The challenges are huge, especially in a climate-constrained world, in supplying adequate energy to support the growth of industrial and commercial sectors, and the exploding demand for transportation, while also meeting the needs of the 650 million people living in rural areas, roughly 350 million of whom currently have no commercial energy supplies (Government of India, 2006).

The most likely impacts of climate change will be seen on the largely weather dependent agriculture sector , sea level rise leading to submergence and increased frequency of extreme events. Each of these has real and potentially damaging consequences for India. India is likely to be more vulnerable to the impacts of climate change being a tropical nation - with about 60 percent of its population dependent on the 'Climate Change-sensitive' agriculture sector alone. India is more susceptible to the impacts of climate change regulation because of its dependence on coal as an energy source, combustion of which is the largest source of GHG emissions in India. As a result, future regulatory processes and carbon emission control policies such carbon tax/penalties would have greater implications for India compared to other nations which are less dependent on coal. These reasons, which make India vulnerable to international climate change policy, are also the principal factors to which India's GHG emission levels are ascribable.

In 2000, as per the Climate Analysis Indicators Tool of World Resources Institute the aggregate GHG emission in India was 1,881.8 MtCO2 translating into per capita CO2 emission of 1.90 tons of CO2 which is approximately one-fourth the global average. In 2000, the energy sector accounted for about 56% of the GHG emissions in India and was followed by the agriculture sector at 34%. The energy sector GHG emissions were mainly on account of fossil fuel combustion. Industrial processes contributed 3% to the total
GHG emissions from India.

One of the most detailed international mechanisms the global community sought to deploy in its efforts to combat climate change is the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC).

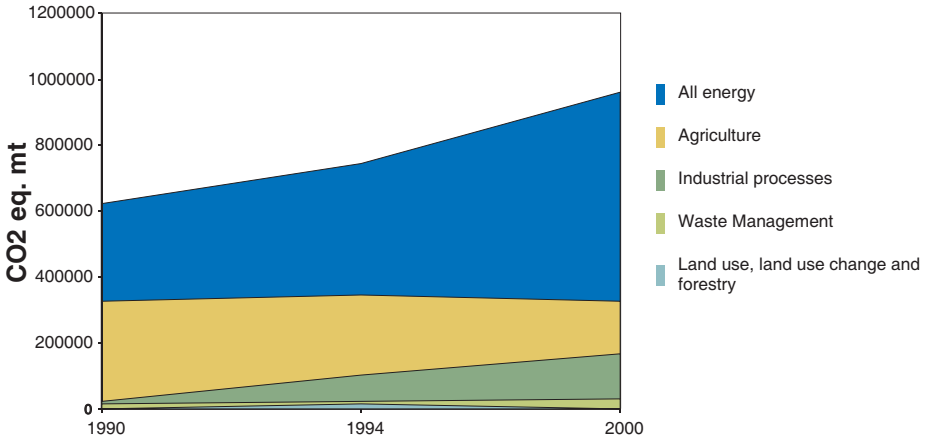
The Kyoto Protocol and CDM Potential

The Kyoto Protocol of the UNFCCC sets legally binding targets and timetables for reduction in GHG emissions for developed countries. Importantly, it provides sovereign nations and the business sector an opportunity to reduce emissions anywhere in the world through their participation in the Carbon Markets. The Kyoto Protocol envisages three mechanisms for ensuring GHG emission reduction:

- Joint Implementation;
- Clean Development Mechanism (CDM); and,
- International Emission Trading.

While Joint Implementation and International Emission Trading are options available only to developed nations, the CDM envisages cooperation between developed and developing country signatories of the Kyoto Protocol whereby developed country signatories can meet their GHG emission reduction targets by buying Certified Emissions Reductions (CERs) from emission reduction projects located in developing countries.
There are varying estimates of CDM potential and projected financial flows to India through CDM projects. India's GHG emissions are largely accounted for by the power, steel, cement and chemical sectors, it is likely that mitigation and (hence) CDM revenue potential will also lie in these. Estimates from various sources of the annual CDM flow to India range from USD 10 million to 300 million (assuming a 10% share of India in global CDM market and that CDM is used to meet one-tenth to nearly half of global GHG emission reductions).

Trends in GHG emission in India



This potential is mainly on account of the possibilities in the energy sector where the significant renewable energy potential (about 35,000 MW) and gas resources, if properly tapped as the Government of India envisages, could reduce the current dependence on coal (coal-based generation currently accounts for 53% of India's total power generation).
Another major source of GHG emission in India is the transport sector. Incremental projects such as improved efficiency of transport vehicles, fuel switching or highway improvement for better access to alternative transport are likely to qualify for the CDM. Potential also exists for carbon sequestration through forestry in India and the sequestration capacity of Indian forests is estimated to be 0.125 Gt (giga tonnes) of CO2 per annum. *

Role of Private Sector

The Indian private sector is becoming increasingly working in tandem with the global markets because of its clientele and the technological processes used in production cycles. Improving the efficiency of the supply chain of one's company is no longer a regulatory risk but an informed and strategic tool to be deployed for improving profit margins and public image.

The Indian companies have had mixed response to climate change issues. While the commercial benefits of CDM have attracted the private sector to CDM projects, the benefits of collating and disclosing emissions data are yet to be appreciated by the private sector. The private sector, while appreciating the benefits from CDM projects, has yet to fully engage with the potential impact of climate change on business.

To a large extent, the actions of the private sector in the environmental domain are driven by regulation and, in the absence of regulation on disclosure of GHG emission data; it is perhaps not surprising to find the private sector focusing on CDM projects alone. The accompanying hazard, of course, is of companies not benefiting from an appreciation of the risks that economies and businesses stand exposed to on account of climate change.

Low Carbon Growth

India is a party to the UNFCCC and ratified the Kyoto Protocol in 1992. The country therefore conforms to the principle of 'common but differentiated responsibility' (where industrialized developed nations are envisaged to respond to targets for GHG emission reduction while developing countries are exempt from such targets). As a result, the initial thrust of the developing countries such as India has been on developing CDM projects. However, with growing awareness of climate change and its impacts, developing countries are beginning to focus on reducing their emissions as well. India too has, apart from developing CDM projects, started contemplating a 'low carbon strategy' (without compromising its development agenda). Transition to a low carbon economy requires India to look beyond CDM and work towards promoting energy efficiency, shift to renewable and clean energy technologies, pursue integrated urban planning approaches, etc. Government policies, innovative financing and fiscal incentives will be the three pillars for transition to a low carbon economy.

Transition to a low carbon economy requires an active involvement of government, business & industry and the community. It is critical for these stakeholders to realize that the CDM alone, while meeting the requirements of the Kyoto Protocol, is certainly not enough to meets its objectives. Various other measures (mentioned in earlier paragraph) are expected to be more instrumental in achieving GHG reductions.

* M Lal and R Singh of Centre for Atmospheric Study, IIT-Delhi have estimated that Indian forests and plantations have been able to remove 0.125 Gt of CO2 from atmosphere in the year 1995.

For example, the CDM across the world is expected to be driven by the private sector as many of the CDM projects will be implemented by them. The CDM can help in strengthening ties between the private sector companies of the Developed and Developing Countries through promoting technology transfer under this mechanism. Furthermore, the carbon revenue on account of the state of Certified Emission Reductions (CERs) would improve commercial viability of projects.

The Prototype Carbon Fund of the World Bank expects the project IRR of renewable energy projects to increase by 1.4 to 1.7% assuming an emission reduction price of 8 and 10 USD respectively. Hence it is in the interest of companies to calculate information on GHG emissions and to disclose it. For one, it is part of a company's social responsibility to demonstrate environmentally sensitive behavior.

The benefits of disclosing information linked with climate changes are manifold. It would help companies:

- To identify and measure climate change related risks: Measurement of climate change risks facilitates management of such risks.
- Demonstrate leadership: The disclosure of GHG information is at a nascent stage in India and the first movers in this area will demonstrate leadership.
- Opens doors to significant opportunities: Opportunities in the form of material and energy efficiency and business opportunities in terms of CDM and new technologies will become better known to the company
- Attract investment: The disclosure of information to investors may enable companies to more easily attract capital and achieve technology transfer. An increasing number of institutional investors are focusing on socially responsible investment and companies with good environmental measurement and performance will find it easier to attract such investment.
- Sharing of knowledge: Disclosure of information facilitates a sharing of best practice and companies can immensely benefit from such exchange.

"Society will demand the early solutions to the climate change issue from the corporate, especially from those who are bigger consumer or generator of energy and in turn responsible for GHG emissions. Consumption pattern, which is considered as non sustainable within the framework of socio -economic context will be challenged"

Dr Reddy's Laboratories

Figure: Schematic representation of the anticipated risks from climate change in certain sectors

	Automobiles Material	Banks & FIs	Construction	Chemicals	Electric Utilities	Metals, & Mining Steel	Oil & Gas	Transportation	IT & Telecom	Capital goods	Food products
Regulatory & Policy Risk	●	●	●	●	●	●	●	●	●	●	●
Increased energy/fuel costs	●	●	●	●	●	●	●	●	●	●	●
Increase in transportation costs	●		●	●		●	●	●		●	●
Higher maintenance costs					●	●	●	●	●		●
Shift in consumer demands	●							●		●	●
Shortage of raw material	●		●	●	●	●	●			●	●
Asset Portfolio		●									
Damage to property	●	●	●	●	●	●	●	●	●	●	●
Interruption in operations due to extreme weather events	●	●	●	●	●	●	●	●	●	●	●
Market & Reputational Risk	●	●	●	●	●	●	●	●	●	●	●

Source: The above table has been synthesized based on background research from multiple sources which include past CDP4 reports for FT500 companies, Germany, Australia, Brazil and Canada and CERES Sustainable Governance Project Report on "Value at Risk: Climate Change and the Future of Governance"

At a broad level, these risks manifest themselves in operational, regulatory, physical and reputation impacts on companies. While the impact of climate change on companies is a function of the nature of their business, physical location and the policy and regulatory environment, risks, which will reflect themselves in company financials at some point of time, are likely to be greater for those with energy-intensive processes and those dependent on natural resources. Such companies are likely to witness higher operational costs on account of increased energy and maintenance costs, etc.

Clearly, climate change is an issue that the private sector in India needs to engage with. First, by identifying the climate change risks they are exposed to and subsequently by developing a clear plan for addressing these risks. Therefore, a voluntary disclosure of information on their environmental performance in general and carbon footprint in particular will be invaluable in creating a national inventory of the same.

As demonstrated by the CDP, investors are now increasingly keen to know how exposed businesses are to climate change risks and how they plan to mitigate these. This assumes additional significance for the investors given the significant liabilities (such as those that might arise on account of litigation) and legal risks that may result from support to environmentally unsustainable projects. On the other hand, disclosure could enable investors to appreciate climate change risk profiles of companies better and boost investor confidence. An improved brand image resulting from disclosure is likely to resonate with an increasingly environmentally conscious public.

"Climate change and its associated risks are becoming better understood and more widely accepted and as such attitudes to climate change and stakeholder expectations are changing. GSK anticipates that its stakeholders will require more information how GSK is responding climate change and reassurance that GSK is using energy efficiently. GSK must find ways to do this which are effective."

GSK

What Companies Should Do

Companies that are successful in facing this challenge must have comprehensive climate change strategies, with the following four key elements:

- Companies must assess the deepening financial connections between climate change and their businesses. Companies with significant greenhouse gas emissions or high-energy use need to assess their exposure from new regulations and develop strategies for mitigating those risks. Companies vulnerable to the direct physical risks also need to take stock of their assets and supply chains.
- Companies must develop and implement action plans to manage climate risks and seize new market opportunities. These plans should include new corporate policies and procedures for reducing and mitigating risk, setting absolute GHG reduction targets and energy efficiency goals, and developing or purchasing new clean energy technologies. Companies should also participate in climate policy dialogues that will reduce financial risks and enhance competitiveness opportunities.
- Companies must share and discuss their climate strategies with investors, analysts and other stakeholders. Companies should disclose their assessments and implementation plans in annual financial reports and corporate responsibility reports. Further, they should engage with shareholders, analysts and public interest groups to obtain feedback in developing effective, proactive responses to climate change.
- Most important, corporate leaders must overcome a tendency toward short-term thinking to implement these climate strategies successfully emphasizing long- term financial results and building long-term shareholder value. In essence, the gap between corporate decision-makers and the lasting effects of their decisions must be narrowed.

Source: Corporate Governance and Climate Change: Making the Connection, Douglas G Cogan, A CERES Publication; 2006

3 Climate change will increase costs for the financial sector if it does not understand the risks and opportunities of climate change. The sector needs to integrate climate change in its policy, investment strategy and appraisal processes, and to provide innovative financing to its clients to enable them to respond to the challenges of climate change.

Financial Institutions and Climate Change

Economic Impacts of Climate Change

Climate Change is expected to have significant impact on world economies. Rising temperatures, wetter climates, rising sea level and extreme environment patterns will effect all sectors of the economy differently. Fall in agriculture production, loss of productive manpower on account of health impacts of climate change, loss of productive land, etc. are some of the scenarios that experts have presented. These impacts will undermine economic growth and might cause diversion of funds to address the undesirable impacts of climate change and will eventually manifest themselves in loss of the Gross Domestic Product (GDP).

The Stern Review report has discussed the following estimates of climate change's impact on world economy.

- An estimate indicates a permanent loss of around 0-3% in global world output compared with what could have been achieved in the absence of climate change (assuming 2-3% degree Celcius warming scenario).
- More recent studies put this loss at 5-10% with poor countries suffering a loss higher than 10%.
- The cost of extreme weather events will be in the range of 0.5-1% of the world GDP.
- The cost of climate change in India could be as high as a 9-13% loss in GDP by 2100 compared to a 'no climate change' scenario. *

  At current levels of India's GDP in June 2007, this could imply a loss of Rs 88,088 to 127,238 crore which is more than the total net tax revenue of India.

  The UNFCCC (2005) in its Handbook on Vulnerability and Adaptation has used estimates of Robert Mendelsohn to illustrate the economic impacts of climate change on India

Estimated economic impacts of climate change on India in 2100 with a 2.5°C warming and no change in precipitation

Sector	Damages (billions of U.S. dollars)[a]
Agriculture	53.2
Forestry	-0.1
Energy	21.9
Water resources	1.2
Coastal resources	0.1

a. Negative numbers are benefits.
Source: Handbook on Vulnerability and Adaptation, UNFCCC, 2005

* The GDP figure has been taken from the website of the Ministry of Finance, Government of the India, and the impact on the GDP, as anticipated in the Stern Review, has been calculated by the Author to reflect the loss in monetary terms. The estimate is only indicative.

- The impacts on the ecomony are so widespread that the financial services sector too will be affected in more ways than one. The financial services sector which includes banks and insurance companies are the lifeline of any economy as they bring in investment and boost economic growth. The sector companies work with the twin objectives of maximising returns and minimizing risks.

Risks and Opportunity for Financial Sector

Andlug Consulting, in its report on *"Adaptation and Vulnerability to Climate Change: The Role of Financial Sector,"* makes a convincing case for financial sectors to adapt to the reality of climate change and its effects. The potential key impacts on the financial sector with indicative timeline are shown in the table below. In near future, the impacts are not that significant. In decade of 2035 to 2045, the financial markets are expected to suffer major losses with fall in confidence and asset values, loan defaults, shelving of projects, etc.

"Increase in emissions and global warming is likely to have an adverse effect on climate and therefore agricultural production. Our lending to this sector, besides the industry, is significant and any adverse effect on crop production is likely to have a significant effect on our lending portfolio. Besides, the Indian economy largely depends on agriculture."

ICICI

Year	2005-2015	2015-2025	2025-2035	2035-2045
CO2 levels	380-405	405-435	435-465	465-505
Insurance	Inaccurate pricing, and costlier repairs	Some big markets uninsurable	Limited capital for property uninsurable	Some insolvencies, annual damage $ 1 Tr
Banking	Insurance cover in place	Customer defaults due to extremes	Collateral values fall projects fall,	Major projects shelved, lending falls
Fund Management	Real estate refits rise, some corporate securities volailte	Volatile commodity market, corporate downgrades	Real estate stressed clients have less disposable income	Economic slow down, some public sector defaults
No real problem		Frequent perfomance deviation		
Subsector unprofitable		Major sectoral problems		Business model threatened

Source: Andlug Consulting

Climate change Impacts and the Financial Sector

Risk Driver	Examples of Issues	Sector Affected
Market	Unexpectedly large economic disasters	Insurance, banking, fund management
Operational	Lengthy local disruptions due to disasters	Insurance, Banking
Reputational	Service quality at time of disaster	Insurance, banking
Political/legal	Changes to the law on disaster relief, Changes to regulations of property design, Lax control of land development	Insurance banking Fund management Insurance, banking, fund management
Counterparty	Defaults after a disaster	Insurance, Banking
Business	Introduction of climate impacts into portfolio risk management Screening individual client transactions for climate change risk	Insurance, banking, fund management Insurance, banking

Key Climate Change Impact Risks and Opportunities

Banking	Threat	Opportunity
Corporate banking and project financing	Uninsured damage to corporate & project asset	Adaptation infrastructure projects
Investment banking	Higher costs due to weather e.g. in the utilities sector	Offering weather derivatives
Retail banking	Customer defaults due to climatic extremes	Finance for climate resilient purposes
Insurance		
Property	• Inaccurate risk pricing • Misinformed response from public sector (e.g. rigid product control) • More costly repair work • Some markets become uninsurable • Lack of capital/reinsurance • Unprecedented disasters threaten solvency/liquidity	More demand for risk transfer Risks differentials can be segmented Administration of disaster recovery Climate resilient infrastructure
Casualty	• Unexpected claims for duty of care, product failures • Disruption of transport (extreme events)	More demand for risk transfer
Life/health	• Episodic impacts on human health	More demand for health cover
Other underwriting	• More business interruption. E.g. failure of public utilities • Disruption to leisure activities • Increased losses in agro-business • Novel technology in energy sector	Alternative products e.g. catastrophe bonds & weather derivatives Programmes to reduce disaster relief Consulting/advisory services Carbon becomes an insurable asset
Fund Management		
General	• Unpredictable impacts on global markets • Uninsured damage to assets • Macroeconomic downturn hits business volume	Upsurge in socially responsible investment More saving for 'rainy day'
Corporate securities	• Climate impacts affect market value of securities	Out-performance by climate leaders Major adaptation projects
Property	• Unplanned refit costs	Out-performance by climate resilient stock
Government securities	• Ability to repay impaired by pressure on public purse from disasters	Increased need for publicly funded adaptation
Other	• Compounded climate risk across diversified funds	Mezzanine finance for adaptation projects

"Being in the financial services industry, we are uniquely poised since we face very little ecological risks and yet we will have ample opportunities once awareness about emission increases. We have already mentioned about our adaptation to physical risks above. For our insurance businesses too, we intend to lay greater stress on insuring policies which are ecologically sound; and this will definitely impact the ways in which companies conduct their business. We will also increase investments in the infrastructure space along similar norms."

Reliance Capital

Sustainable Investment Initiatives from Investors

Realizing the risks and opportunities arising out of climate change, investor's across the world have developed tools to mainstream the risks presented by climate change in their decision processes. In this connection, several sustainable investment initiatives have started (the CDP is one such initiative). Noteworthy initiatives which are beginning to have an impact are:

- **The Institutional Investors Group on Climate Change (www.iigcc.org)**
  The UK Institutional Investors Group on Climate Change (IIGCC) is a forum for collaboration between pension funds and other institutional investors on issues related to climate change. It currently has 37 active members. IIGCC seeks to

  i) Promote better understanding of the implications of climate change amongst our members and other institutional investors.
  ii) Encourage companies and markets in which IIGCC members invest to address any material risks and opportunities to their businesses associated with climate change and a shift to a lower carbon economy.

- **The Investor Network on Climate Risk (www.incr.com)**
  The Investor Network on Climate Risk was launched at the first Institutional Investor Summit on Climate Risk at the United Nations in November 2003. INCR's membership has since grown from 10 investors managing $600 billion in assets to more than 60 investors managing over $4 trillion of assets. Members include asset managers, state and city treasurers and comptrollers, public and labour pension funds, foundations, and other institutional investors. INCR leverages the collective power of these investors to promote improved disclosure and corporate governance practices on the business risks and opportunities posed by climate change.

- **The Equator Principles (www.equator-principles.com)**
  The Equator Principles are intended to serve as a common baseline and framework for the implementation by each adopting FI of its own internal social and environmental policies, procedures and standards related to its project financing activities. The Principles are not climate change specific but focus on integration of environmental and social issues project finance. Fifty-four financial institutions from twenty-one countries have adopted the Equator Principles. These financial institutions operate in over 100 countries.

- **UN Global Compact (www.unglobalcompact.org)**
  The Global Compact is a framework for businesses that are committed to aligning their operations and strategies with the principles in the areas of human rights, labour, the environment and anti-corruption. As the world's largest, global corporate citizenship initiative, the Global Compact is first and foremost concerned with exhibiting and building the social legitimacy of business and markets. It is a purely voluntary initiative with two objectives of mainstreaming the ten principles in business activities around the world and catalyzing actions in support of UN goals.

- **Principles for Responsible Investment (www.unpri.org)**
  It is an initiative of the UNEP Finance Initiative and the UN Global Compact in conjunction with the many of the world's leading pension funds. The Principles are voluntary and inspirational. They are not prescriptive, but instead provide a menu of possible actions for incorporating ESG issues into mainstream investment decision-making and ownership practices.

  The Principles have been adopted by signatories from around the world currently representing total assets of about US$8 trillion.

- **Global Reporting Initiative (www.globalreporting.org)**
  The GRI's vision is that reporting on economic, environmental, and social performance by all organizations is as routine and comparable as financial reporting. GRI is a worldwide, multi-stakeholder network wherein various stakeholders collaborate through consensus-seeking approaches to create and continuously improve the Reporting Framework.

- **Enhanced Analytics Initiative (www.enhanced-analytics.com)**
  EAI is an international collaboration of asset owners and asset managers aimed at encouraging investment research that considers the impact of extra-financial issues on long-term company performance.

In India, there are no such formal investor initiatives on sustainable investment at present. However, industry associations such as the CII, FICCI and Assocham have played a critical role in promoting sustainable investment. Significantly in 2006, an initiative backed by the International Finance Corporation, the private arm of the World Bank, is providing funding to a consortium comprising Standard & Poor's, CRISIL and KLD, the social and environmental research firm, to develop the first index of emerging market companies based on their environmental, social and corporate governance (ESG) performance. Under the project, a pilot index will be created in India, comprising leading Indian companies that meet certain ESG criteria, and will be marketed to local and international investors. It is hoped that this index will serve as a model for other emerging markets, helping to further enhance their appeal to international investors, facilitating the development of new investment products, and providing a mechanism to further improve ESG standards.

The industry associations could play a more active role in promoting some of the global investor initiatives in India by highlighting the benefits of adopting sustainable investment principles. The benefits include use of common terminology and framework for assessing environmental and social issues, a better understanding and management of business risks arising out of environment and social issues, improving brand image and sharing of knowledge and pooling of resource. Clearly with an issue as complex as climate change collaboration between investors is important so that activities can reach scale and there can be a productive sharing of best practice and policies to mitigate climate change risk whilst ensuring the capital required for low carbon opportunities is made available.

4

This section summarizes the responses of Indian companies to the CDP5 questionnaire[4]. The companies were asked to provide answers 'on five themes' focusing on climate change risks, opportunities and strategies, GHG accounting and emission reduction programmes with targets and climate change governance.

4 CDP5 Questionnaire is included as appendix 2.

Analysis of Responses

The First CDP India Project, the result of collaboration between the WWF-India, CDP and CII- CESD targeted 110 of India's largest companies to solicit information on:

- The opportunities and risks perceived from climate change and the strategies being contemplated to manage these opportunities and risks
- Direct and indirect GHG emissions with emission intensity, energy consumption and costs thereof
- Emission reduction strategies and emissions trading
- Corporate-level climate change management and governance

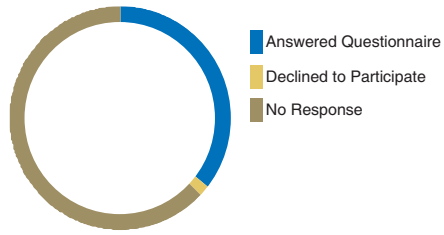
The covered 110 major Indian companies represents various sectors, including 46% (51) companies from high impact (i.e., GHG emission intensive) sectors such as steel, oil & gas, automobiles, construction material, etc. This Report documents the responses received to specific information request made in the CDP Questionnaire with additional information on GHG emission-intensive sectors where possible.

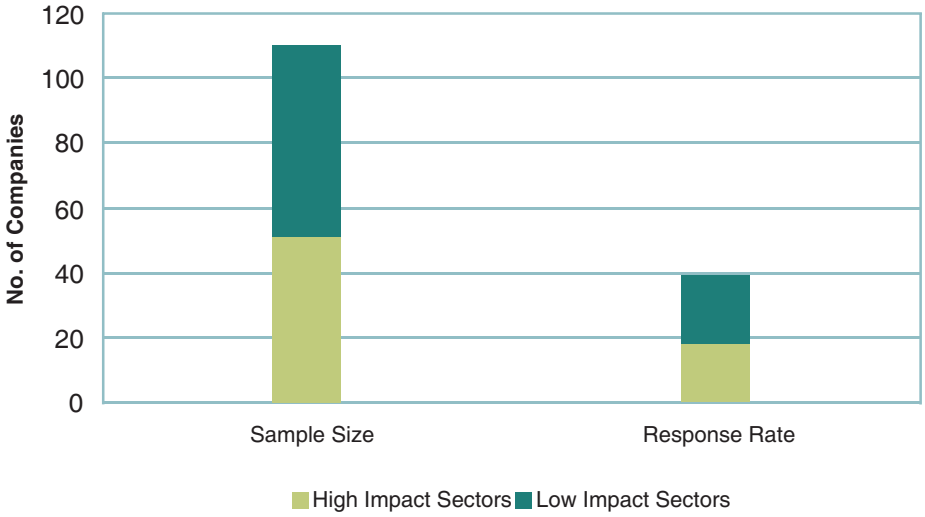
Response Rate

Of the 110 companies that were approached with the CDP India survey questionnaire, 35% (39)* responded - an encouraging response rate given that this was first ever request to Indian companies to respond to the CDP questionnaire. Historically, CDP has issued four previous questionnaires on a global basis to FT500** companies. In 2006, CDP expanded to include over 2000 companies in countries such as Australia, Brazil, Canada and Germany. In 2007 CDP continued this expansion to include India, South Africa and the Nordic countries.

The response rate from companies is influenced by a range of factors, including the profile of companies which were approached for the information request, resources within the company to respond to the questionnaire, degree of familiarity with the CDP process and the general appreciation and engagement with climate change issues. The response rate of 35% in India is likely to improve in the coming years as companies become more aware of, and sensitive to, the issue of climate change and gain familiarity with the CDP questionnaire.

CDP India Response Rate





* This excludes two financial sector companies which declined to participate citing their 'nature of businesses' as the reason for not providing information.
** 500 largest companies in the world by market capitalisation.

CDP's experience is that it takes companies some time to implement a measurement system for GHG emissions Therefore, when engaging a country for the first year the response rate is often low. CDP has found that there is a positive cumulative effect in that and there is a year on year improvement in terms of both the number of responding corporations and the quality of those responses.

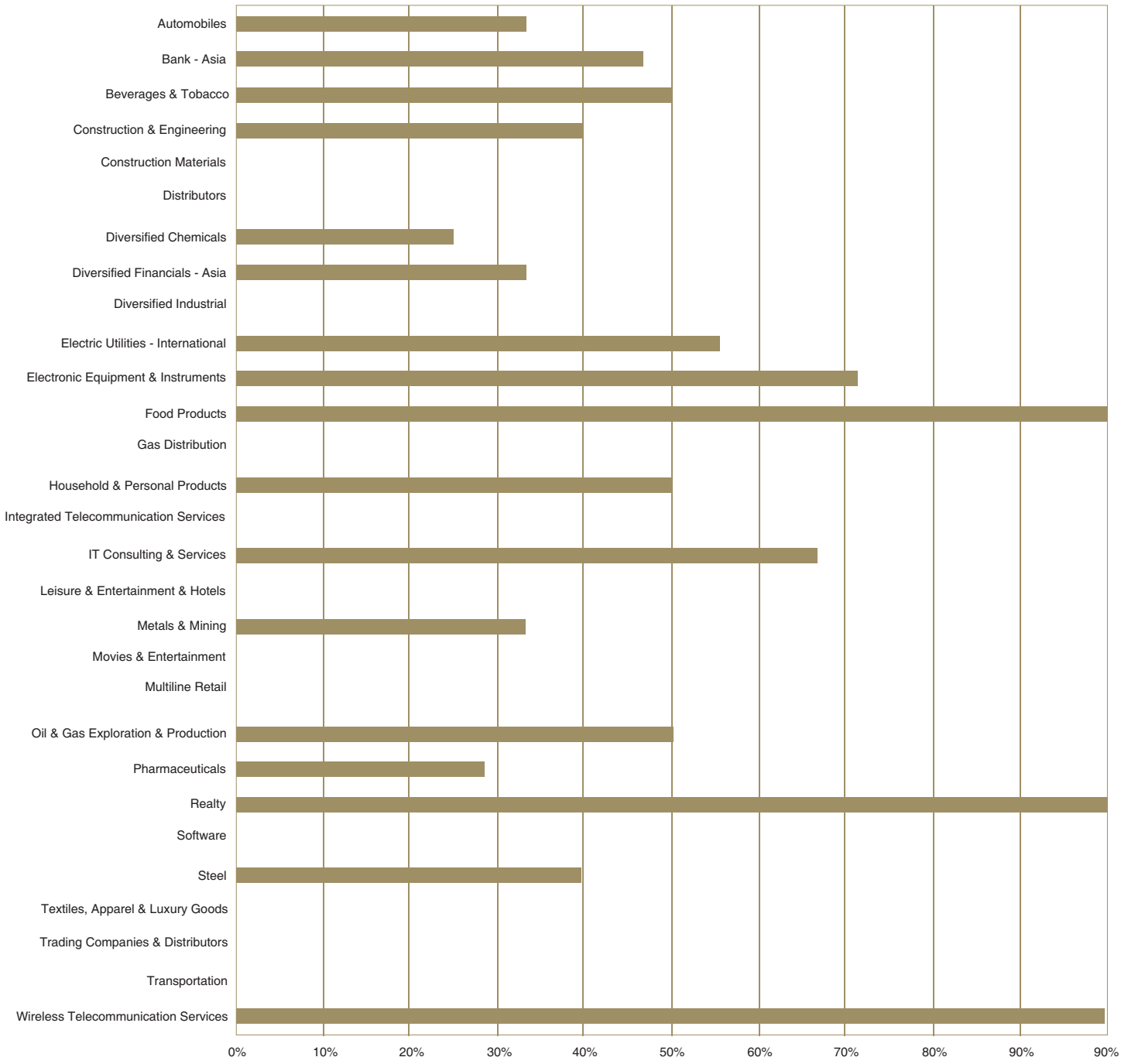
Within the overall response rate of 35%, there are major variations in sectoral response rates. Of particular importance in India is the response rate from the high impact sectors such as automobiles, electric utilities, metals & steel and oil & gas companies (See Table below.). While the overall response rate in the high impact sectors is at 35% (similar to the country average), the response rate in high impact sectors ranges from 25% to 56% depending on the sector with electric utilities leading the list. The better than average response rate from some of the high impact sectors is likely to be of some comfort to investors - suggesting willingness in these sectors to engage with climate change.

Three high impact sectors had a lower than average reponse including diversified chemicals, pharmaceutical and automobile sectors which may indicate that these sectors in India are yet to develop sufficient strategies on climate change. A notable feature is the response rate from banks and diversified financial companies at 44%, this is higher than the 35% country average, which is positive given their potentially significant role in shaping corporate responses to issues such as climate change. This assumes special significance in India, a country with no targeted GHG emission caps under the Kyoto Protocol.

Response rate of High Impact Sectors	
Cluster/Sector	**Response rate**
Automobiles	33%
Banks & Diversified financials	44%
Beverages & Tobacco	50%
Diversified Chemicals	25%
Electric Utilities	56%
Metals & Mining (including steel)	38%
Oil & Gas Exploration and Production	50%
Pharmaceuticals	29%

Note: the less than avarage response rate has been highlighted in red

Sector Response Rate



The depth and quality of responses has been mixed which is understandable since this is the first CDP request in India. While around a dozen companies provided detailed and adequate responses (including GHG data), others provided generic responses. The responses provided by nearly half the companies could be termed less than adequate as these provide limited insight into their understanding of, and engagement with, climate change issues. Despite these inadequacies (especially when compared with the responses of international companies), it is encouraging to note that Indian companies are not oblivious to the climate change challenge.

The responses received have been from public sector companies, multinational companies (MNCs) and Indian private sector companies. It has been seen that the quality of responses to an extent was a function of the group that the company represented. For instance, the responses of the MNCs (with operations in India) have generally been good and detailed. Almost all have mentioned that they have group level policies on environmental performance which apply to Indian holding companies as well and the reporting of information on environmental performance is consolidated by the parent company and reported globally.

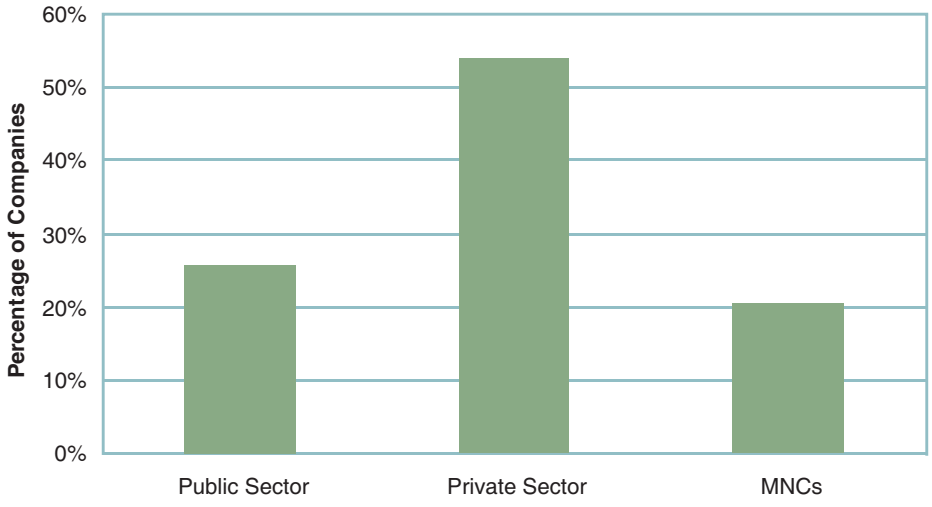
Yet another point which needs a mention is that of the 39 responses, 10 are public sector companies. There is a perception that the public sector companies in India are slow to respond to issues unless compelled by regulation.

Even though the responses of the public sector companies are not as detailed as desired, their response points towards the fact they are not oblivious to the climate change challenges and are considering responses to not only reduce their risk but also to realize the commercial opportunity that CDM offers.

Responses of private sector companies have been mixed. Some private sector companies like Tata Steel, JSW Steel, Essar Oil, Infosys, etc. have displayed leadership qualities in reporting their GHG data. All companies that responded to CDP this year should be congratulated for their willingness to participate in a much needed dialogue. Of greatest concern are the companies which failed to submit a response.

"Our wider footprint is dominated by the consumption and disposal of our products and we estimate this to be 30 to 60 times greater than our own emissions."

Hindustan Unilever



Summary of Responses

The CDP Questionnaire was divided into two parts. Section A was meant for all companies to answer while Section B was targeted at high impact sectors and sought to collect information on GHG emissions and climate change governance in more detail. The responses to specific questions are summarized below.

Section A - All Companies

Question # 1: Climate Change Risks, Opportunities and Strategies:

79% (31) of the responding Indian companies perceive commercial risks arising from climate change. Among the major commercial risks perceived are regulatory, physical, operational and reputational risks.

Regulatory Risks: 33% (13) of the responding companies, including 3 of the 18 high impact sector companies, identified uncertain future regulation as one of the risks posed by climate change.

There was general awareness among respondents of existing environmental laws in the country. Almost all respondents anticipate future regulation on reducing and reporting GHG emissions and have expressed their willingness to comply with this. The impact of compliance costs on profits was not mentioned as a concern by any of the respondents.

all respondents anticipate future regulation on reducing and reporting GHG emissions and have expressed their willingness to comply with this. The impact of compliance costs on profits was not mentioned as a concern by any of the respondents.

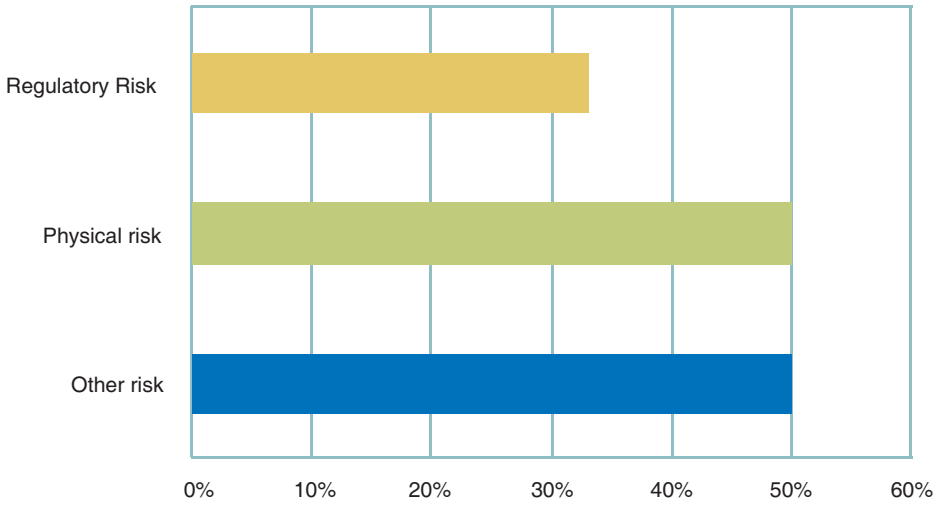
Physical Risks: More than half 51% (20) of the responding companies cited physical risks to their operations as a result of climate change scenarios identified by the IPCC. The response pattern signals that some sectors are more susceptible to the vagaries of nature such as electric utilities, oil & natural gas, steel, food products, as they have identified physical risks as important. Most of them fear disruption in operations as a result of resource shortages (i.e., shortages of raw materials such as coal, water, agricultural produce). Other risks identified included damage to property, higher energy and financing costs and health impacts. Importantly, while the nature of physical risk was identified by most responding companies, few identified time frames or detailed the likely financial implications of these.

"Extreme climate change may interrupt our business operations. In situations like rising sea level, increased storm/incessant rain, hurricane, drought etc, following physical risks are expected:

- Loss of business opportunities in view of inundated roads due to torrential rain / rising sea level.
- Interruption/suspension of operations, temporarily.
- Dry outs at the retail stations / hinterland supply locations, temporarily.
- Risk associated with production and supply process till restoration of normalcy."

Bharat Petroleum

Risks reported by the Responding Companies



Other Risks: Other commercial risks mentioned included damage to reputation and impact on the quality of their asset portfolio (mentioned by financial sector companies). Almost 50% of the responding companies citing 'other' risks mentioned client and consumer preferences towards purchasing from environmentally sensitive organizations as one of the drivers for them to remain environmentally responsible.

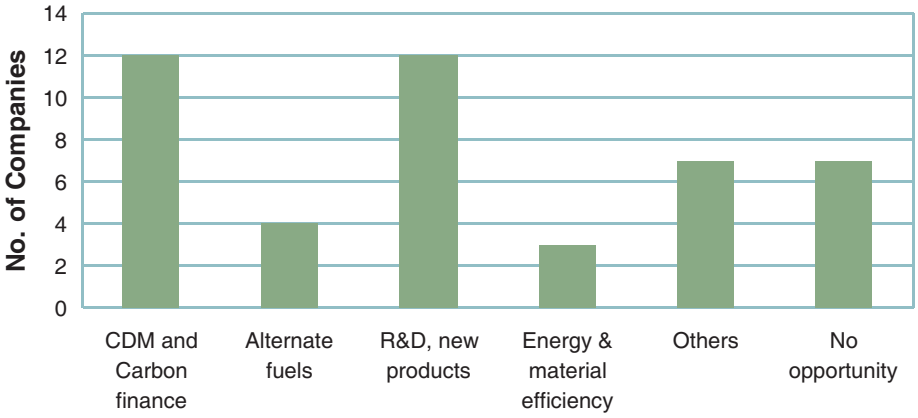
Responses from high impact sector companies were broadly similar to the general trend described above.

Commercial Opportunities: Eighty-five (85%) of the responding companies reported that climate change offers commercial opportunities in the form of developing new products, exploiting CDM potential, expanding into carbon finance and implementing energy and material efficiency measures in operations. Views on commercial opportunities were sector specific. For instance, 7 of the 8 financial sector companies that responded identified carbon and renewable energy technology financing as an attractive future option. Companies representing the manufacturing sector, on the other hand, saw commercial opportunities in developing energy efficient products. A noteworthy finding is that 15 of the 18 responding companies from the high impact sectors have identified various commercial opportunities arising from climate change. Select responses to the question on commercial opportunities are presented in the table below

"As we foresee that hydro power has a huge potential and at the same time it is a non-polluting source of energy, we are developing the technology and plan to invest more and build such power plants which will be fuelled by renewable sources of energy."

NTPC Limited

Commercial Opportunities



Select Responses to the Question on Commercial Opportunities

Automobiles: While Hero Honda and Maruti Udyog Limited have mentioned that they are working towards better and energy efficient vehicles, Pricol sees no immediate commercial opportunity arising out of climate change.

Banks & Diversified Financials: ICICI mentions opportunities in the carbon finance business and is encouraging industry to promote energy efficiency, reduce pollution and earn carbon credits. Canara Bank, on the other hand, has identified development of alternative products to finance energy efficiency, renewable energy and sustainable forestry projects as one of the opportunities. Reliance Capital, interestingly, talks about the opportunity in 'ecologically viable' investment (through investments in ecologically sustainable companies).

Construction & Engineering: Hindustan Construction Company lists 'development of new low energy materials & technology, CDM, sustainable construction practices such as eco-design and green building' as some of the opportunities.

Electric Utilities: CESC interestingly talks about boost in its revenues as a result of increase in electricity demand arising out of warming temperatures. Both NTPC and PTC have discussed commercial opportunities that lie in cleaner and renewable energy technologies.

IT: While Infosys has mentioned that they have not yet estimated the opportunities that might arise as a result of climate change, Wipro has identified 'emissions trading and being carbon-neutral' as a business opportunity.

Oil & Gas: Essar Oil has mentioned reducing GHG emission through energy efficiency as a key opportunity'. Besides energy efficiency, it has identified opportunities around 'material efficiency' leading to 'reduction in waste generation.'

Pharmaceutical: Dr Reddy's Laboratories' response to the question on commercial opportunities- 'Energy conservation will be an important area to be addressed in near future, which in turn will help in reducing the cost of production. (2) We feel that there can be more health issues, if the climate change goes in a way it is predicated. It may not be correct to use the word "opportunity" in this context but these health issues are likely to create more market for the health care sector. However, if we weigh overall cost and benefits due to climate change, then we tend to believe that cost will outweigh the benefits.'

Steel: Tata Steel mentions that 'reduction brought in for green house gas emissions due to the modernization and state-of-the-art technology do have financial benefits in terms of potential carbon trading and energy efficiency in running the plants.'

Strategies: Barring 26% (10) of companies, 74% (29) of the responding companies claimed to have devised strategies of some kind to respond to commercial opportunities and risks presented by climate change. It is important to note that the strategies varied widely and these may not be as detailed as is required. Somewhat expectedly, the strategies mirror the opportunities. While some companies' strategies are peculiar to their businesses others have more generic strategies such as having dedicated staff and departments for carbon. For instance, Bharti Airtel, a leading telecom company, has launched schemes for providing village community phones thereby providing connectivity and reducing travel, hence achieving transport-related climate change impacts. Most companies have discussed strategies for exploiting the commercial potential offered by climate change through CDM projects and/or through carbon advisory services.

Following are the select responses of the companies regarding their strategies to commercial opportunities and risks posed by climate change.

Infosys

'Infosys is aware of the potential impact of climate change resulting from global warming and is committed to reduction of Greenhouse Gases. Infosys is now exploring possibilities of reducing/ sequestrating GHG emissions by way of its operations. The strategy of the company in this regard is as follows:

- Adoption of best practices, latest technology and high levels of efficiency for conservation of energy
- Utilization of alternate or renewable sources of power
- Sequestration through 'carbon sinks' to become carbon neutral

Power Grid

- Power grid is continuously working on increasing the capacity of our transmission lines by using capacitors wherein we can transfer more power with less number of lines. Transmission lines have been upgraded from 220 KV to 400 KV.
- Being conscious about environment, Power Grid has complying with ISO 14001 and OSAS. Also it is mandatory for all the Power Grid establishments to undertake rainwater harvesting.
- We also keep a track on our vendors and it is mandatory for all our vendors to have ISO 9001 certification and we are planning to make ISO 14001 certificate compulsory for vendors.

Hindustan Unilever

- The Group estimated the GHG emissions associated with the sourcing, manufacture, distribution, consumer use and disposal of Unilever products. The total annual emissions of GHG from our own factories, offices, laboratories and business travel are in the order of approximately 4 million tonnes of CO2 equivalents. Details of our strategy are still under-discussion but some agreed actions include a significant reduction in business travel and the incorporation of a greenhouse gas index into our product development process, to assess and where possible, reduce impacts during product use.

Question # 2: Greenhouse Gas Emissions Accounting

Methodology and External Verification: The majority of the responding companies which have reported emissions data stated using the GHG Protocol methodology for emissions accounting. This is a good news for the investors as the use of one standard tool will facilitate comparison and hence aid decision making. While the first step, i.e. of collecting data, in disclosing information has been negotiated by some companies, the crucial step of externally verifying the collected data is yet to be achieved. However, seven companies which reported GHG data stated their data has been externally verified.

Emissions: Investors have specific interest in the disclosure of information on carbon footprints of companies as they are increasingly concerned about the impact of climate change on their portfolio. Investors desire disclosure of GHG emission data as it enables them to better assess their risk exposure to climate change. The question on emissions asked the companies to reveal their GHG emissions along with the methodology used for computing the same. The companies were asked to provide GHG emission data for Scope 1, Scope 2 and Scope 3 as defined in the GHG Protocol. A total of 38% (15) responding companies reported GHG emission data. Of these 15 companies, 9 are private sector companies, which is positive and points towards growing awareness about environmental concerns and proactive response of Indian companies to the climate change challenges.

The disclosure of GHG emission data supported by external verification was provided by 47% (7) of the companies that reported such data. These include Glaxosmithkline, Hindustan Unilever (Unilever), ITC Limited, JSW Steel, Nestle India, Sesa Goa Ltd and Tata Steel. Of the companies which provided Scope 1 emissions data, only 50% companies provided emissions data for Scope 2 activities.

Total GHG emissions reported by the responding companies are about 35.36 million tonnes CO2e (as compared to 1,881 million tonnes of CO2e emissions from India). Notably, all responding companies from the Steel (2 companies) and Pharmaceutical (2 companies) sectors reported their GHG emissions.

"We are working towards becoming carbon neutral. There are targets in place to reduce power consumption year on year. A recent effort has been to reduce air travel for business purposes as well. We are in the process of revalidating our consumption, conservation and sequestration levels. Once this is done we would set clear objectives and targets."

Infosys

"We are replacing our towers to technologically advanced pole towers which will conserve energy, occupy less ground space as it is compact and which have less impact on the natural resources."

Power Grid

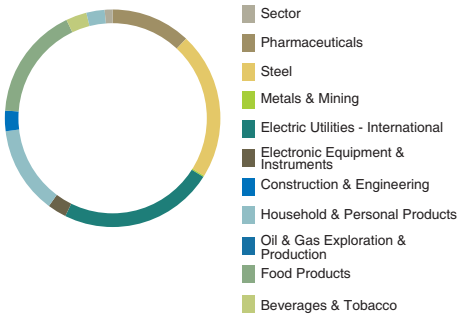
Question on Scope 3 GHG emissions solicited information on emissions from indirect sources such as employee travel, supply chain, distribution and use and disposal of company products. Seven companies reported some Scope 3 emissions. Of the total 179.29 million tonnes of CO2e reported under Scope 3, almost 95% were accounted for by Unilever demonstrating their quality measurement systems. The companies which provided the Scope 1 and Scope 2 emissions data but did not provide the Scope 3 data cited non-availability of information and difficulty in ascertaining the same as the reasons for not providing the information.

A word of caution for the investors is needed since the information provided by companies is disclosed voluntarily and possibly has been complied in response to the CDP survey. Therefore, it might well be the case that information has not been collected or analyzed with high rigour levels.

However, in this first year of CDP we see this as a very positive start and would expect companies to become more sophisticated in their measurement and disclosure over time.

Investors are likely to improve their understanding of the climate change related risk exposure of Indian companies once disclosure improves, following increased familiarity with measurement tools and protocols. Besides the limited familiarity with measurement tools currently, another factor impacting GHG emission data disclosure levels could have been the voluntary nature of the CDP India Survey.

Breakdown of Scope 1 & 2 Emissions by Sectors



Reported GHG Emissions Data (Mt CO_2e)

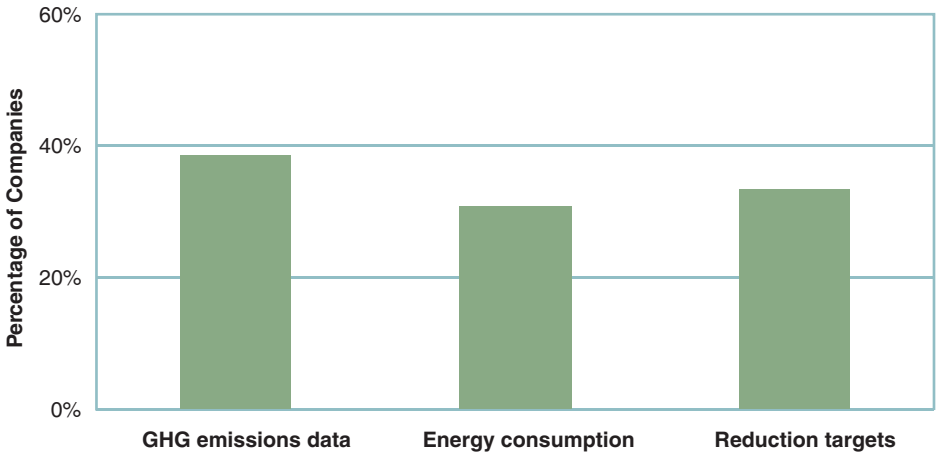
Company Name	Sector	Scope 1	Scope 2	Total
Bharti Airtel	Wireless Telecom-communication Services	378,238	537,403	915,641
Canon	Electronic Equipment & Instruments	902,000		902,000
CESC	Electric Utilities International	8,278,000		8,278,000
Dr Reddy's	Pharmaceuticals	72,219	73,537	145,756
Essar Oil	Oil & Gas Exploration & Production	1,010,000	6	1,010,006
GSK global (including Annex B countries)	Pharmaceuticals	1,964,454	2,050,136	4,015,590
Hindustan Construction	Construction & Engineering	78,225	25,270	103,495
Hindustan Unileve- l globa (including Annex B countries)	Household & Personal Products	2,101,149	2,648,658	4,749807
Infosys	IT Consulting & Services	230,000		230,000
ITC	Beverages & Tobacco	846,762	172,188	1,018,950
JSW steel	Steel	5,937,113	721,329	6,658,442
Nestle global (including Annex B countries)	Food Products	6,052,000		6,052,000
Sesa Goa	Metals & Mining	112,357		112,357
Tata Steel	Steel	1,170,389		1,170,389
		29,133,906	**6,228,527**	**35,362,433**

Energy Consumption: As mentioned earlier in the report, climate change impacts are likely to be more severe on companies which have energy-intensive processes. It, therefore, assumes importance for companies to know their energy consumption. 31% (12) of the responding companies reported their energy consumption. Only two (Infosys and Hindustan Unilever) of the responding companies reported their percentage energy consumption from renewable energy sources. Infosys has reported a renewable energy share of 1.3% in its total electricity consumption. Hindustan Unilever has reported the same as being 21.3% globally and 12% in Annex B countries.

"We have a plan to achieve sequestration through 'carbon sinks' to become carbon neutral."

Infosys

Percentage of Companies that reported GHG Emissions Data, Energy Consumption and have Reduction Targets



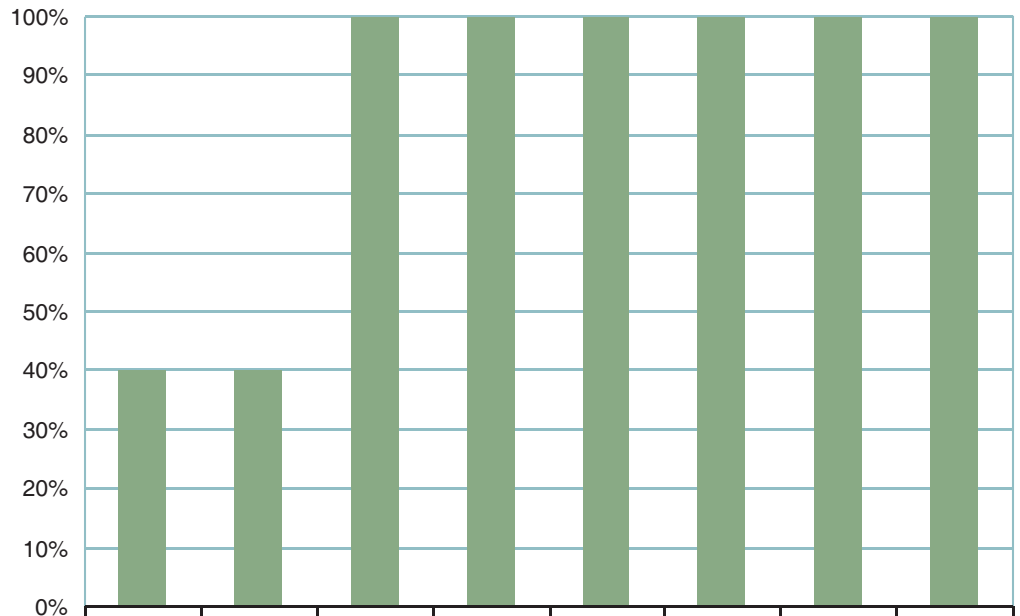
Section - B

Question # 4: Greenhouse Gas Emissions Management

Emission Reduction: This question is on emission reduction aimed at obtaining information on reduction targets with timeframe and investments. A third of the responding companies, including all the high impact companies from the steel, pharmaceuticals and metals & mining sectors, claimed to have set GHG emission reduction targets. While most of them had defined these targets as percentage reduction in GHG emission or energy consumption, two had gone further to define their target as being carbon neutral. Only 4 companies provided details of the investment proposed for achieving the GHG reduction targets set internally.

The above graphs show the percentage of responding companies that have set reduction targets. Following are the select responses to the companies to the question on their emission, reduction programmes.

Sector Wise Percentage of Companies that have Reduction Targets



	Electric Utilities - Internation	Electronic Equipment &	Food Products	Household & Personal	IT Consulting &	Metals & Mining	Pharmaceuticals	Steel
Percentage of Responding Companies	40%	40%	100%	100%	100%	100%	100%	100%

Bharat Petroleum

'…we have an environmental management system to restrict emissions to low levels through a number of programs. Alongside business operations, emission reductions have been achieved through upgrading infrastructure, modernization, introducing clean technologies / monitoring devices, automation of loading and unloading activities, product storage management, increasing process safety level. The above programs have helped keeping low pollution levels on sustained basis in cities / towns in which our establishments are situated. India`s emission level is below global emission 1990 level under Kyoto protocol.'

Infosys

'... measures adopted include adoption of best practices and the latest technology. As part of our environment management system, we have also been working on reducing energy consumption since 2004 and moving towards high levels of efficiency for conservation of energy.

We also use solar energy on our campuses and are looking at possibilities of using alternate or renewable sources of power in a bigger way.

We have a plan to achieve sequestration through 'carbon sinks' to become carbon neutral. Much of the emissions are sequestrated by the foliage and trees on our own campuses which act as 'carbon sinks'. As on 31st March, 2007 the company owned 784 acres of land across its campuses in India. Of this, roughly 31.5% or 247 acres was dedicated for landscaping. This huge green cover acts as a carbon sink.'

ITC

'ITC's strategy on emission reduction programmes consists of

- Energy Conservation, Audit and Benchmarking to achieve the lowest specific energy consumption (energy used per tonne of product)
- Use of renewable sources of energy
- Carbon Dioxide (CO_2) sequestration through farm & social forestry initiatives
- Identify ways to mitigate adverse effects of climate change caused by Global Warming through implementation of CDM projects under Kyoto Protocol'

Importantly, as reflected in the earlier figure most companies which reported their energy consumption also reported their reduction targets. While Power Grid Corporation, LG and Wipro reported their reduction targets, they did not report their energy consumption and GHG emissions data. Companies that reported their GHG emissions but did not report energy consumption are CESC, Hindustan Construction Company, JSW Steel, Nestle and Sesa Goa

Emission Trading: With India being a Non-Annex I country as per the Kyoto Protocol, it is little surprise that nearly half 46% (18) the responding companies have considered emission trading opportunities given the additional revenue stream these offer. The interest of Indian companies in carbon trading is further corroborated by the fact that India has the largest number of the CDM projects registered with the UNFCCC. Eight of the responding companies who have considered emission trading have CDM projects at various stages in the pipeline and banks and financial companies are considering carbon finance and renewable energy projects. The following table lists the CDM initiatives of the responding companies.

Emission Intensity: 26% (10) companies of the responding Indian companies provided details of emissions intensity with 13% (5) providing historical emission intensity data to reflect improving environmental performance. Eight of the 10 companies providing emission intensity data reported the same as GHG emission per unit of output or input. The other two, Canon India Pvt Ltd. (an Electronic Equipment & Instruments company) and Dr Reddy's Lab (a Pharmaceutical company), reported emission intensity as a percentage of base year emissions. Most companies felt that CO2e per unit product best reflected emission intensity.

Energy Costs: Rising energy costs, particularly in the high impact sectors are expected to be one of
the major impacts of climate change on the private sector and its competitiveness. Further, there are chances that future regulation efforts may require companies

"Nestlé has been committed for long to environmentally sound business practices, as stated in The Nestlé Policy on the Environment first issued in 1991.This includes reduction of greenhouse gas emissions and other air emissions. Nestlé's invests an average of CHF 40 million annually to reduce air emissions. As a result, since the start of the negotiations leading to the 'Kyoto Protocol' in 1997, the CO2 emissions from our manufacturing sites were reduced by 14%. During the same period, our production volume has almost doubled to 38.24 million tonnes, resulting in a GHG eco-efficiency improvement of 56%."

Nestle

Sector/Company	CDM Project
Beverages & Tobacco	
ITC	Six projects registered with the CDM Executive Board and several other projects including a forestry project are at various stages. The sale of CERs from 3 CDM projects has already materialized.
Construction & Engineering	Have submitted a methodology to the CDM Board for approval.
Hindustan Construction Company Ltd	
Electric Utility	
CESC NHPC	The company has successfully registered two CDM projects with the UNFCCC which will result in an annual reduction of 35,719 MT CO_2 • Project 0479 – Energy efficiency measures at a thermal power generating station of CESC • Project 0987 – Energy efficiency through alternation of fuel oil atomizing media in coal-fired thermal power plant In addition, there are other projects in pipeline The company plans to implement hydro projects under CDM
Mining & Metals including steel	
JSW Steel Sesa Goa	One project is registered with the UNFCCC and the company has initiated other energy efficiency and waste heat recovery CDM projects. The company has one project on power generation from waste heat recovery registered with the UNFCCC. The project's crediting period is from 1 January 2007 to 31 December 2016
Oil & Natural Gas Exploration & Production	
Bharat Petroleum Ltd ONGC	Several projects are reportedly awaiting host country approval ONGC has two projects (Project nos. 0814 and 0847 registered with the UNFCCC and 11 projects with host country approval. The company is developing another 15 CDM projects.

	Total Energy Cost (USD Mn)	Energy cost as percentage of operating cost/turnover
Oil & Gas exploration & production	344.20	4-5%
Pharmaceuticals	371.72	1-2.50%
Construction & Engineering	28.99	6.54%
Household & Personal Products	900.00	1.70%
IT Consulting & Services	2.25	1.02%
Beverages & Tobacco	28.75	9.10%
Food Products	980.00	1.20%
Steel	Not reported	25-30%

Planning: The question on planning asked companies to provide information on company's future emissions and how this information was integrated into business planning. Few responding companies mentioned undertaking future planning with respect to integrating climate change issues into corporate planning. Responses of some of the companies to the question on planning are provided below.

ITC
ITC has not estimated future emissions. Individual businesses are required to continually remain most energy efficient in their respective lines of businesses. Individual business plans show energy consumption and costs for the future years.

All capital expenditure must take environmental impacts into consideration, including energy efficiency while evaluating selection. All new technologies/ upgradation of processes are required to follow the ITC strategy on GHG emission reductions.

Nestle
Environmental impact of investments, including related GHG emissions, are carefully assessed by R&D according to a methodology named Preliminary Environmental and Safety Impact Survey.

Infosys
Future emissions are yet to be estimated.

Question # 5 - Climate Change Governance: The question on climate change governance assumes that to deal with the climate change issue companies need to have sufficient managerial expertise to make informed and responsible decisions. 39% (15) of the responding companies report having allocated board or upper management level responsibilities for climate change issues. Since this is the first CDP questionnaire in India, companies that mentioned separate Environmental Health and Safety (EHS) departments have been classified as those having assigned upper management level responsibilities.

"GSK estimates its future emissions as part of the process it uses to set its emission reduction targets. These estimates are based on sales projections and the anticipated growth of the business. The cost of future emissions is considered as part of GSK's capital approval process."

5

This section provides an insight and comparison of the responses at a sectoral level. It also contrasts the Indian responses to the global ones.

Sector Analysis

This section presents the sector - wide picture from the CDP India questionnaire. As companies become more sophisticated in their analysis of the risks and opportunities stemming from climate change, further analysis will be possible.

Since this is the first CDP questionnaire in India, a simple forecast technique has been used to project the emissions of those companies which have reported their last three years' emissions. The analysis, though simple, provides a possible insight into the future emissions based on historical emissions data along with providing an indication of the challenges that the companies will face on account of their future emissions.

Automobiles

i) Climate Change Risks and Impacts

- The exposure of this sector to climate change risks is linked to its energy consumption and increasing energy costs would lead to increased operating costs.
- As a user of metals and chemicals, the sector generates emissions on site and contributes to generation of emissions in its backward chain.
- Lifecycle GHG emissions are of high significance as the use of automotives in transport causes GHG emissions. In the future, this may pose the greatest risk as automobile companies might be forced to comply with stricter norms for vehicle emissions.
- Emission reduction strategies in this sector will need to focus on achieving energy and material efficiency and R&D for fuel - efficient vehicles.

ii) Response to the CDP Survey

- The questionnaire was sent to 9 automobile companies of which 3 responded- Hero Honda, Maruti Udyog and Pricol.
- The responses of the 3 companies are mixed. Both Hero Honda and Maruti have mentioned their attempts towards fuel-efficient vehicles. Hero Honda has further listed environmental initiatives taken by them which include the 'Green Supply Management Chain', product innovation, resource conservation, etc. Maruti Udyog, meanwhile, has mentioned that they collect information on GHG emissions but have cited inability to disclose the same for that would require top management consent. Hero Honda and Pricol have both mentioned that they do not have an accounting system in place to measure GHG emissions.

"We have created our own in-house audit team to keep a track on energy consumption and GHG in the organisation. The calculations of GHG emission in based on the GHG protocol. Secondly we use transparent glasses in our buildings to maximise the use of natural light and employees are instructed to switch of approx. 80% of the lights during day time."

Maruti Udyog Limited

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Hero Honda Motors Ltd		✓	✓							
Maruti Udyog Limited	✓	✓	✓							
Pricol Limited	✓									

The global counterparts of Indian automobile companies demonstrate greater maturity in dealing with the climate change risks and challenges and some have done notable work in managing their carbon footprints. The efforts of these global companies (responses are available on the CDP website www.cdproject.net) have yielded benefits which are reflected in emissions reduction. For instance, Toyota has recorded a decline of 21% in its emissions intensity (measured as CO2 emissions per sales unit) in the last 6 years. The strategies adopted by international automobile companies extend beyond reducing emissions at plant sites to undertaking life cycle assessment of GHG emissions and managing the same through measures such as R&D for developing fuel efficient and hybrid vehicles and vehicles which run on green fuel such as bio-diesel. The global community may expect similar action from Indian automobile companies in the coming years and require Indian companies to innovate to stay competitive.

Banks and Diversified Financials

i) Climate Change Risks and Impacts

- While certainly a low-impact sector in terms of its contribution to GHG emissions, this sector does have potentially significant exposure to the commercial risks of climate change through their equity ownership and lending operations. The immediate impact of climate change is likely to be seen on the portfolio and asset quality of banks.
- The banks also have numerous commercial opportunities in the form of financing clean and renewable technologies, carbon finance (integrating carbon risks and return into the appraisal criterion) and emissions trading.

ii) Response to the CDP Survey

- A total of 18 banks and diversified Financial Institutions (FIs) were approached for the survey. 44% (8) of these companies responded to the survey request.
- Two banks, Indian Overseas Bank and Union Bank of India, declined to participate in the survey. They cited the nature of their business (not being a manufacturing company) as the reason for not responding to the CDP information request. This could be of concern especially since banks have significant exposure to climate change risks through their investments. Outreach activities to build awareness especially with this sector are necessary since other than regulations, the investment policies of financial sector companies are crucial in promoting environmentally sensitive development.
- The responses of the banks and diversified FIs are mixed in the sense that almost all of them dwell on climate change opportunities but have a less detailed appreciation of risks. Only 25% (2) of the 8 responding companies have recognized that climate change risks could impact their portfolio, only one reported its energy consumption (others have not answered the question) and none have reported GHG emissions saying that these are either not applicable to them or that they are unable to estimate them.

"As part of Reliance Capital's business, we have two insurance arms Reliance Life Insurance and Reliance General Insurance. For these two arms, there are large physical risks in the form of natural calamities such as earthquakes, floods, tsunamis, etc. However, the company is adequately protected against such risks by means of re-insurance. On the whole, however, the risks posed by such calamities extend to all the products and services offered by the company as they have a fairly sizeable effect on the economy in general and particularly on products in the financial services domain."

Reliance Capital

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Canara Bank	✓	✓								✓
HDFC Bank Ltd	✓	✓								
Housing Development Finance Corporation		✓								
Industrial Development Bank of India	✓	✓				✓	✓			
ICICI Bank Ltd	✓	✓	✓			✓				
Kotak Mahindra Bank										
Rabo India	✓	✓	✓			✓				
Finance Reliance Capital	✓	✓	✓							

- The international FIs realize that they have a crucial role in encouraging businesses to move towards a low carbon economy through their investment choices. Most global financial sector companies have set internal targets for reducing their GHG emissions. Importantly, they assess the impact of climate change on their portfolio and, in some cases, the climate change risk analysis is integrated into the investment decisions of banks and FIs. A point worth mentioning is that most of the respondents to FT500 are signatories to global environmental performance and disclosure initiatives such as the Equator Principles and UN Principles for Responsible Investment, etc. By adopting these, the financial sector companies commit themselves to making environmentally and socially sound and sustainable investment decisions. Some of these companies mentioned using available tools such as JENI-Carbon Beta to inform their investment decisions.

Construction & Engineering

i) Climate Change Risks & Implications

- Adverse weather events could cause physical damage to existing or under construction sites, influence new site choice and lead to business interruptions in the form of construction delays due to events such as floods, excessive rainfall, etc.
- Increase in the cost of financing and insurance as extreme weather conditions become more prevalent are likely
- Emissions from vehicle fleet and raw material such as cement is a major source of emissions for the sector
- The sector could face shortages of construction materials
- The government might issue new building specifications and environment friendly construction practices leading to increases in compliance costs.
- Increasing fuel and energy costs will lead to increased costs of operations.
- Consumer preferences and demands for energy efficient buildings may require construction companies to work towards responding to these- with implications for R&D into building technologies
- The opportunities for the sector lie in reducing cement use, achieving fuel efficiency and using alternate fuels

ii) Response to the CDP Survey

- Out of the 5 companies approached, two responded - Hindustan Construction
- Company and Punj Lloyd.
  While Hindustan Construction Company has provided GHG emissions data, Punj Lloyd has mentioned the use of a conversion factor to calculate the emissions data but has not disclosed the emissions data. Punj Lloyd has also indicated constraints in setting GHG emission reduction targets as these would depend on the number and scale of its ongoing projects.

"Asset portfolio of the bank may get affected on account of drastic and adverse climatic changes on account of severe weather events, sea level rise, flooding of rivers could affect our clients in industry, agriculture, construction and energy."

Canara Bank

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Hindustan Construction Company	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Punj	✓		✓							

Electric Utilities

i) Climate Change Risks and Impacts

- This sector has significant exposure to climate change risk arising out of potential future regulation on curtailing emission, costs increase and escalating demand
- Disruption in transmission & distribution infrastructure on account of extreme weather events could add to maintenance costs
- The sector will witness an increase in domestic energy demand due to extreme temperatures in summer and winter
- The sector would need to consider fuel switching to cleaner fuels and adopt clean & renewable technologies as a result of regulatory pressures

ii) Response to the CDP Survey

- Of the 9 electric utilities that were approached, 55% (5) responded. Three of these are generating companies while the others are transmission and distribution entities.
- The responses of the companies are not detailed and show significant variation. Barring CESC, no other company has provided GHG emission data. Given the nature of this sector this may be of some concern to investors. The National Hydro
- Power Corporation, expectedly, talked about CDM bringing relief to capital intensive hydro projects that NHPC is mandated to implement. However, the major climate change risk emanating from extreme weather patterns on hydro projects are not mentioned.
- While responding companies have talked about widening their technologies to include renewable energy technologies, many of their global peers have taken the lead to implement such projects. Some North American electric utilities (such as Duke Energy, Exelon, First Energy, etc.) have, for example, set voluntary emission reduction targets and are pursuing alternate technologies such as efficient coal-based technologies. In addition, they emphasize demand side management.

"Excessive fluctuations in weather conditions cause increased load cycling of the generating units, thereby adversely affecting cost of generation. As has been suggested by some scientists, if warmer temperature leads to increased frequency and severity of storms, the company could incur increased cost for repairing affected facilities. Also, there is potential risk to the distribution network arising out of abnormally high rainfall. They, to the company`s assessment, do not pose immediate commercial risk."

CESC

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
CESC	✓	✓	✓	✓	✓	✓			✓	✓
National Hydro Power Corporation	✓	✓				✓				✓
NTPC Ltd	✓	✓	✓							
Power Grid Corporation of India	✓	✓	✓	✓						
PTC Ltd.	✓	✓	✓			✓				

Electronic Equipments

i) Climate Change Risks & Impacts

- Increase in operating costs as a result of increase in energy costs is one of the most likely impacts that this sector may experience.
- Physical damage might occur to manufacturing sites and company offices and disruption and delay in distribution of goods as a result of increase in extreme weather events.
- Consumers might prefer more energy efficient appliances.
- Future government regulations might affect manufacture and end-use of environmentally unfriendly appliances.

ii) Responses to the CDP Survey

- Seven companies were sent the questionnaire of which five replied.
- Of the five companies that responded, four are multi-national companies- Canon, Moser Baer, LG Electronics and Samsung. Moser Baer and Canon reported global data on GHG emissions and all companies provided detailed responses to the question on risks, opportunities and strategies.

"With increasing environment consciousness among consumers, we are developing energy efficient products and aggressively marketing it as one of the key factor of our products."

LG Electronics

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Bharat Heavy Electricals Ltd	✓	✓	✓							
Canon	✓	✓			✓					
LG Electronics Pvt Ltd	✓	✓	✓	✓						
Moser Baer		✓	✓	✓			✓		✓	
Samsung	✓	✓	✓						✓	

IT Consulting & Services and Telecom

i) Climate Change Risks & Impacts

- This sector has little exposure to climate change risk and their GHG emissions are generally on account of energy consumption in offices and employee travel. The sectors do, however, have significant opportunities to design products and software (for teleconferencing, exchange of information, etc.) that can help in reduction of GHG emissions in other sectors.

ii) Responses to the CDP Survey

- Of the three IT companies and one telecom company that were sent the questionnaire, 2 IT and the telecom companies responded.
- Bharti (a Telecom company) and Infosys (an IT company) have both disclosed GHG emission data and Wipro (another IT company) has mentioned that it is in the process of collecting information on GHG emissions. The responses of the three companies reflect an adequate understanding of climate change risks and a desire to mitigate these through energy efficiency measures and increasing the share of renewable energy technologies.

" Bharti Airtel believes in the philosophy of refuse, reduce, reuse and recycle. We have taken many initiatives in this regard, both within our offices and sites. As our energy cost have increased, we have stepped up our efforts towards enregy conservtaion by sharing infrastucture, using technology aids like video conferencing to reduce travel and deploying green shelters. At our offices, we have deployed waste water recycling, energy efficient lighting, concept of energy wheel, air curtains on major office exits and disposal mechanisms for discarded oil. We have also teamed up with global majors to form teams focusing on energy optimization by way of introducing energy-efficient equipment and exploring alternate energy sources like solar, wind, bio-fuel / hydrogen etc. to reduce the environmental impact. We firmly believe that communications technology is a great enabler allowing customers to use our services like audio conferencing, video conferencing, m-commerce, etc. to help them avoid physical travel wherever possible. With the continuous deployment of our service network, opportunities for applications that minimize environmental impact are boundless. "

Bharti Airtel

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Telecom										
Bharti Airtel	✓	✓	✓		✓		✓			
IT										
Infosys	✓		✓	✓	✓		✓		✓	✓
Wipro	✓	✓	✓	✓		✓				

Metals & Mining and Steel

i) Climate Change Risks & Impacts

- The metals & mining industry is highly energy intensive and an increase in the energy cost as a result of carbon charges will have an impact on energy and overall operating costs.
- The sector could get exposed to future regulatory risk in terms of reducing overall GHG emissions.
- Extreme weather events might disrupt and damage business operations and properties/sites.
- Shift in consumer preferences and demands for certain product types.
- Opportunities for the sector lie in area of energy efficiency and use of clean and renewable technologies.

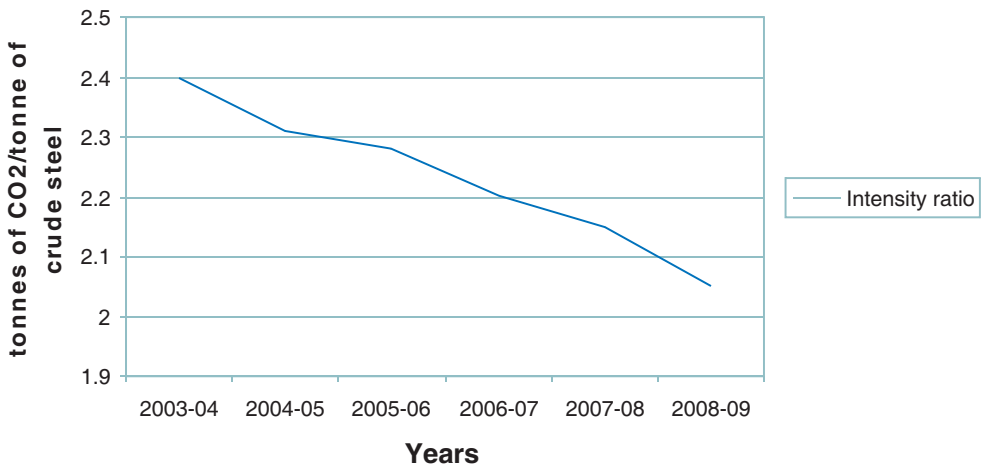
ii) Responses to the CDP Survey

- The questionnaire was sent to three metal & mining companies of which one responded.
- The responding company, Sesa Goa has provided energy consumption and emission data but did not respond to other queries in Section B (relating to reduction programmes, emissions trading, emission intensity, planning, etc.
- The questionnaire was sent to five steel companies of which two responded. These are JSW Steel and Tata Steel.
- The responses of the two steel companies demonstrate a fair understanding of climate change issues and associated risks. Both companies have provided emission data and have set emission reduction targets in terms of emissions per tonne of crude steel.
- The reported emissions data shows significant variation across companies constraining comparison. The data might be incomparable but it does inform investors of efforts made by Indian companies to voluntarily collect and disclose data.

"Reduction brought in for Greenhouse Gas emissions due to the modernisation and state-of-the-art technology do have financial benefits in terms of potential carbon trading and energy efficiency in running the plants."

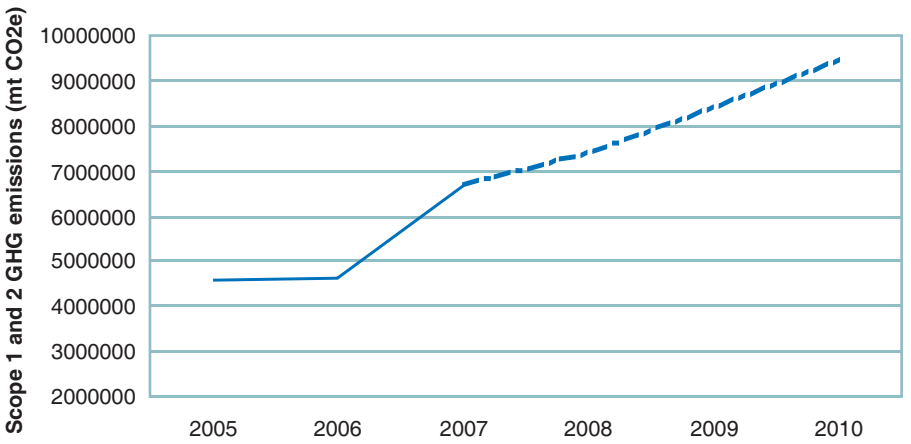
Tata Steel

Tata Steel's Intensity Ratios - Past & Future



	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Metal & Mining										
Sesa Goa	✓	✓	✓	✓	✓	✓	✓			
Steel										
JSW Steel	✓		✓	✓	✓	✓	✓		✓	✓
Tata Steel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

JSW's Projected Emissions



- Though the projected emissions in the case of JSW show an increase according to the forecast, JSW has set a target to reduce its emissions intensity to 1.9 tons of CO2 per tonne of crude steel.
- Like their global counterparts, Indian companies in this sector demonstrate maturity in understanding and dealing with the climate change issues. While the responses of the global companies are more detailed and in-depth, the Indian companies may be expected to catch up in the next round of the CDP survey- for considering that this is the first CDP request, the Indian companies have done well to collate and disclose information on their emission.

Oil & Gas Exploration and Production

i) Climate Change Risks & Impacts

- The companies in this sector, in the long run, could be exposed to regulation of direct emission and it is likely that the sector might experience dampening of demand as clean and renewable technologies gain importance.
- In the oil & gas sector, flaring and venting of gas is a leading source of GHG emission. Future regulation might require oil & gas companies to restrict the same and methane recovery projects might become mandatory.
- Changes in weather pattern and extreme weather events could have an impact on business operations.
  Increase in cost of operations is expected on account of increased energy and maintenance costs.

ii) Responses to the CDP Survey

- Six Oil & Gas companies were approached of which three responded. These are Bharat Petroleum Corporation, Essar Oil and Oil & Natural Gas Corporation. Two of these- Bharat Petroleum Corporation and Oil & Natural Gas Corporation- are in the Public Sector.

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Bharat Petroleum	✓	✓	✓	✓		✓	✓		✓	✓
Oil & Natural Gas Corporation						✓			✓	
Essar Oil	✓	✓			✓	✓			✓	✓

- The responses from the three companies are mixed with ONGC sending its response in the form of a letter to the CDP. Bharat Petroleum has provided detailed responses to the question on risks, opportunities and strategies but has not provided emission data. Essar Oil has provided data on emissions and energy consumption. ONGC has mentioned in its letter that they have initiated the process of collecting data and hope to have it by early 2008. Since this is the first CDP survey in India, ONGC's response has been categorized as an 'Answered Questionnaire'.
- The key themes that emerge from the responses of FT500 oil & gas companies are centered around reducing the flaring & venting of gases and increased focus on energy efficiency. For instance, Chevron is targeting eight flaring and venting reduction sites in order to significantly reduce its GHG emissions by 2010. Total aims to reduce flaring of associated gas to 50% of 2005 emissions by 2012. The Indian companies could draw upon the experiences of their global counterparts in managing GHG emissions.

Pharmaceuticals

i) Climate Change Risks & Impacts

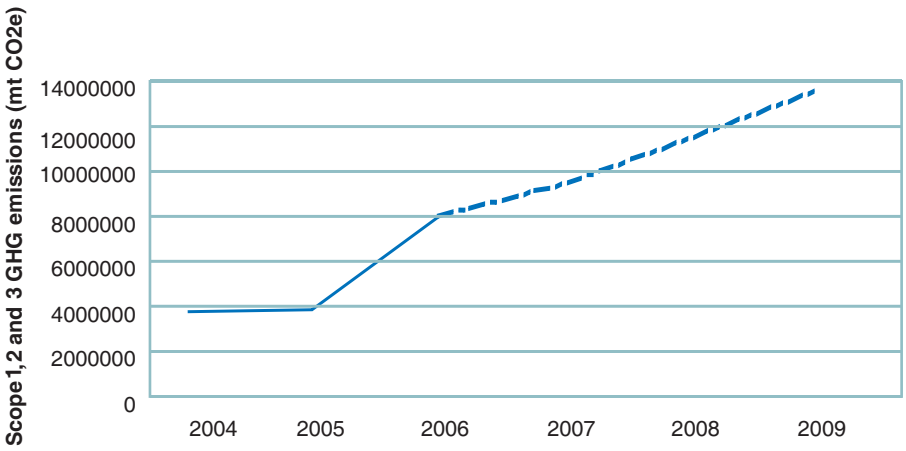
- The pharmaceutical industry is not an energy intensive industry and hence, increase in energy costs is unlikely to have a significant impact on its cost of operations. Although it should be noted globally and in India, Pharmaceuticals companies did choose to answer Section B questions voluntarily)
- Manufacturing sites and company offices are exposed to physical risks on account of extreme weather events.
- As climate change is predicted to have serious consequences on human health the sector may have significant opportunities to help mankind deal with these.

ii) Responses to the CDP Survey

- Seven pharmaceutical companies were approached of which two responded. These are Dr. Reddy's Lab and GSK.
- The Indian GSK company has asked for the global response (i.e., the response from its headquarters which, it is hoped, includes the details of country-level operations) to be considered for the CDP survey. Both companies recognize energy efficiency as an opportunity and have provided emissions and energy consumption data besides reporting that they have set emission reduction targets.

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Dr Reddy's Laboratory	✓	✓	✓	✓	✓		✓		✓	✓
GSK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

GSK's Projected Emissions



"In addition to the actions and reviews by Carbon committee, the Company has adopted proactive strategies of being carbon positive (minimise specific energy consumption, substitution of renewable energy and sequestration through forestry and plantations) and water positive (reduce specific water consumption, recycle waste water after treatment, zero wastewater discharge from operating units and rainwater harvesting within company and watershed projects in socially relevant areas)."

ITC

Beverages & Tobacco and Food Products

i) Climate Change Risks and Impacts

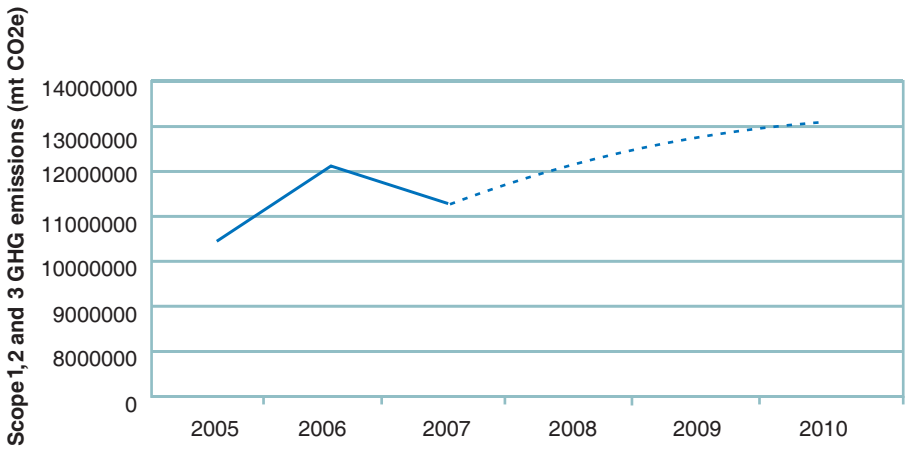
- Disruptions in operations (backward and forward supplies) are expected as a result of extreme weather events.
- Shortage of resources/ raw material could impact business operations on account of impacts of climate change on agricultural productivity
- Operating costs could increase due to higher energy prices and higher maintenance costs for preservation of food produce.
- Opportunities exist for new 'green' products.
- Consumer might prefer environment friendly products and packaging.

ii) Response to the CDP Survey

- Two beverages & tobacco companies and three food products companies were approached by the CDP. Of these one tobacco (ITC) and two food products companies (Hindustan Unilever and Nestle) responded to the information request.
- The food product companies asked for the parent company's response to be considered for the CDP survey. As a result, the replies of the two food product companies are not a true reflection of how this sector engages with the climate change issue in India. However, it is likely that the parent company's policy may have 'trickled down' to their companies in India ITC's response displays a robust understanding of climate change issue in that it has adopted various environment friendly programmes and reports its 'triple bottom-line performance'.

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Beverages & Tobacco										
ITC		✓	✓	✓	✓	✓	✓		✓	✓
Food Products										
Nestle India Ltd	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hindustan Unilever	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

ITC's Projected Emissions



"India being a price sensitive market does not provide much scope for construction companies to invest hugely on energy efficient and eco-friendly processes and materials."

DLF Limited

Remaining Sectors

	Considers Climate Change to present Commercial Risks	Recognizes climate change opportunities	Has detailed strategies for risks & opportunities	Has emission reduction programs	Disclosed GHG data	Considers emissions trading	Energy costs disclosed	Climate change Planning	Board level response	Answered Section B
Reality										
DLF	✓	✓	✓							
Diversified Chemicals										
Hindalco					✓		✓			

6 Indian companies appreciate the risks as well as opportunities from climate change, but there is a need for developing capacities and creating awareness on carbon disclosure with the industries.

Conclusions

The results from the first CDP India project represent a positive start to the work of Indian corporations measuring, reporting and managing greenhouse gas emissions. Some companies are already engaged with this important work and are well prepared, which is noteworthy, given an absence of regulation in India and the fact that this was the first time Indian companies have received a request for measurement and disclosure from their investors it is good to see that some companies are well prepared. However, no response from 65% (71) companies to the CDP5 questionnaire in 2007, makes it clear that an enormous amount of work still needs to be done by Indian companies including investors, to catch up with their global peers. Of concern for investors is the fact that climate change is clearly going to affect some of the non responding companies and it may be that these companies do not have adequate risk management strategies in place or are missing significant opportunities to benefit from the shift to a low carbon economy.

The first CDP survey in India of companies from diverse sectors is more indicative of Indian companies' appreciation of the commercial potential that the CDM offers rather than the depth with which they have engaged with the climate change challenge. Clearly, there is greater appreciation of opportunities offered by climate change than the various risks that the companies are exposed to. This could be because most climate change impacts are perceived to be beyond the planning horizons of companies. Importantly, respondents did not identify the time frames or detailed the likely financial implications of the climate change risk.

Emissions trading particularly CDM were reported to be the new business opportunities of interest to most Indian companies. A wide range of other commercial opportunities were reported which ranged from energy and material efficiency to R&D for development of new products and technologies.

Notably, the responses of some of the high impact sector companies demonstrate an appreciation of climate change challenges. This is evidenced from the fact that nearly half of the respondents from high impact sectors reported their emissions and have implemented reduction programmes. The responses of financial institutions are critical as they have a crucial role in encouraging businesses to move towards a low carbon economy through their investment choices. While the financial companies revealed an understanding of climate change risks, they are yet to integrate climate change risk assessment into their project appraisals and investment decisions.

The survey findings provide a case for efforts towards awareness building and training on GHG accounting (deploying available approaches such as the GHG Protocol) for Indian companies. Indian companies could benefit from sharing of international experiences especially with focus on benefits derived by companies that undertake GHG accounting.

Clearly, there are challenges around how Indian companies' estimate GHG emissions and set emission reduction targets. Continued CDP- WWF India - CII CESD collaboration on similar information request, where the Indian companies' response to climate change issues and GHG emission tracking, reduction and reporting is tracked systematically and disseminated widely, will be important to meeting these.

"Management within the organization has set the target to reduce the energy consumption by 20% on an annual basis."

LG Electronics

7 Appendices

Appendix I

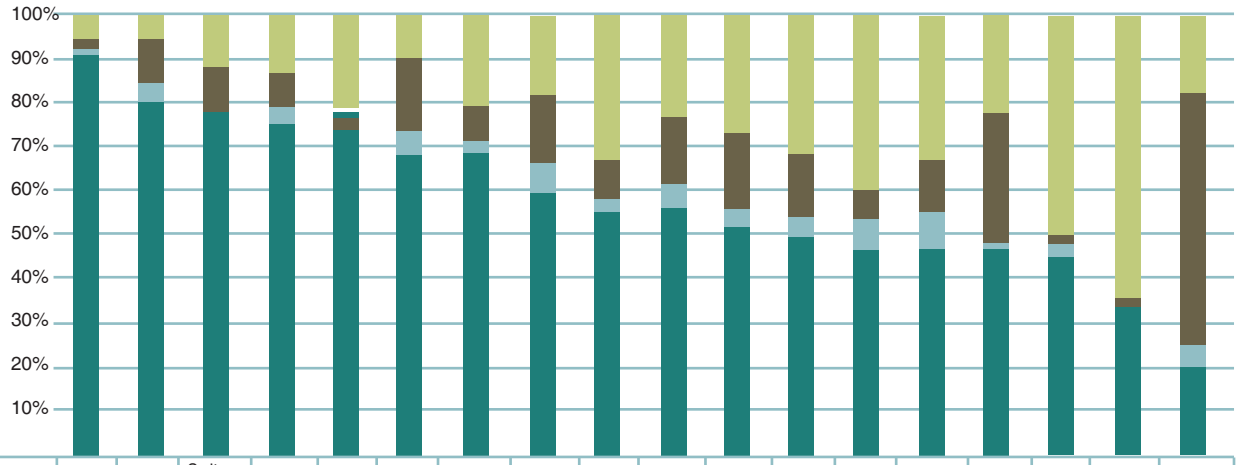
Key Trends from CDP Geographic and Sector Expansions

Following successful expansion in CDP4, the CDP5 universe was expanded even further in 2007 to include over 2,400 companies. This was made possible by sixteen geographical and two Sector expansions. This section provides details of these partnerships, the overall response rates, and some headline analysis of the key trends.

Please visit the CDP website www.cdproject.net in order to view and download the analytical reports based on the responses from the specific geographical locations. Reports will be available for the Asia, Australia & New Zealand, Brazil, Canada, France, Germany, India, Japan, Scandinavia, South Africa, Switzerland, UK and USA samples.

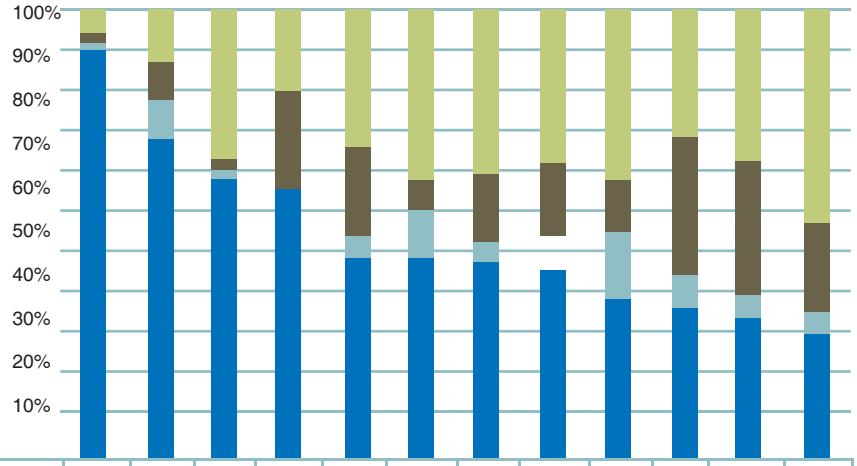
The key trends from CDP expansions highlighted in the table overleaf produce a number of interesting findings, including the fact that the majority of responding companies around the world see Climate Change as posing commercial risks. With the lowest rate of companies recognizing potential impacts showing 72%, it is telling that the majority of businesses are identifying Climate Change as an imminent threat. With the Brazilian rate at 100% of responding companies recognizing hazards, the FTSE 100 at 98%, and the Australia 150 at 97%, these samples are showing that corporate awareness of risks is high.

CDP5 Response by Region / Sector



sample (number of companies)	FTSE 100 (100)	Brazil 60 (57)	Switzerland(50) (50)	Global FT500 (500)	Japan 150 (151)	Nordic 125 (125)	South Africa 40 (38)	UKFTSE 250 (250)	France 120 (120)	USA S&P 500 (500)	Germany 200 (200)	Aust/Nz 150 (141)	Electric utility (240)	Transport 100 (100)	Canada 200 (194)	Italy 40 40	India 110 (110)	Asia 80 (77)
No Responses	6	2	6	62	32	12	8	47	40	117	54	45	95	33	43	20	70	14
Declined to Participate	2	7	5	39	4	21	3	37	10	76	35	20	16	12	58	1	2	44
Provided Information	1	1	0	16	3	8	1	18	3	25	7	6	16	8	2	1	0	4
Answered Questionairre	91	47	39	383	112	84	28	148	67	282	104	70	113	47	91	18	38	15
%Answered Questionairre	91	82	78	77	74	68	68	59	56	56	52	50	47	47	47	45	35	19

CDP5 Response by Sample



sample (number of companies)	FTSE 100 (100)	FT 500 (500)	Japan 152	Brazil 50	Aust/Nz 150 (134)	S&P 500 (500)	France 120	Electric utility (265)	FTSE 250 (250)	Asia (39)	Germany (280)	Canada (280)
No Responses	6	52	60	9	41	189	43	90	94	11	67	133
Declined to Participate	2	46	4	11	26	35	18	43	29	12	60	55
Provided Information	10	42	3	0	7	52	5	20	38	3	10	14
Answered Questionairre	83	360	95	30	60	224	54	112	89	13	63	76
%Answered Questionairre	83	72	62	60	45	45	45	42	35	33	31	28

Unlike other analysis, the graph above reflects all responses received up to August 2007.The graph below shows the response rates from the various regions last year in CDP4.

Key Trends

	Responding companies that said they consider climate change to represent commercial risks	Responding companies that said they consider climate change to represent commercial opportunities	Responding companies that disclosed their GHG data	Responding companies that allocated board - level or upper management responsibility for Climate Change related issues	Responding companies that considered emissions trading opportunities	Responding companies that implemented emission reduction programs with targets	Number of responses analyzed
Asia 80	77%	79%	49%	38%	47%	38%	15
Aus/NZ 150	97%	89%	60%	93%	77%	36%	68
Brazil 60	100%	100%	59%	59%	61%	52%	46
Canada 200	85%	86%	66%	53%	27%	24%	86
Electric Utility 250	90%	95%	79%	70%	54%	44%	113
France 120	88%	84%	72%	34%	31%	43%	67
FT 500	80%	82%	79%	64%	46%	77%	378
FTSE 100	98%	82%	83%	53%	38%	41%	91
FTSE 250	83%	80%	69%	24%	2%	37%	151
Germany 200	77%	80%	67%	38%	20%	35%	104
India 110	79%	84%	39%	39%	47%	34%	37
Italy 40	89%	83%	89%	33%	33%	22%	18
Japan 150	78%	82%	95%	93%	69%	81%	112
S&P 500	81%	69%	65%	50%	36%	29%	269
Nordic 125	81%	80%	76%	41%	37%	23%	77
South Africa 40	80%	92%	56%	60%	44%	44%	25
Switzerland 50	72%	77%	72%	36%	15%	44%	39
Transport 100	83%	85%	77%	79%	42%	46%	48

* Section B responders only
** some responses will have been received after this analysis was carried out, the analysis was carried out by different report writers.

If business wants to be a significant force in addressing Climate Change, it is equally important that corporations recognize the opportunity and potential to adjust to shifting markets, resource availability, government regulation and consumer demand. The recognition of business opportunities corresponds accordingly to the trends concerning risks, showing that the potential for development is already being integrated to corporate planning. In ten of the samples, the recognition of opportunities was actually higher than the recognition of risk, showing market foresight alongside possible product development.It should be noted that the questions regarding management strategies and trading opportunities were only answered by corporations who completed the entire questionnaire (Section B). As it was not mandatory, this can account for the lower percentages witnessed in the table outlining key trends above. Additionally, the question regarding emissions trading schemes is expected to be lower, with many companies falling outside the scope of such schemes. Interestingly the number of companies in developing countries such as Brazil, India and South Africa who see emissions trading opportunities is higher than companies based in Europe showing high interest in the CDM market.While the emissions target question is located within Section B, there is an opportunity for companies to disclose target information at the end of Section A, Question 1(d), so all responses should have been included in the analysis. All companies were asked if they have an emissions reduction target. Many companies do have reduction programmes in place however the question specifically asks for targets and unless those were disclosed, the response was not counted in the analysis. As such, the average number of companies with a specific reduction target stands close to 50%, showing robust leadership in setting reduction targets. The FT500 and Japanese 150 companies stand out as the two samples working most stringently to limit their emissions. Whilst we have seen a great increase in the number of companies setting emission reduction targets this remains an area for global improvement.
Partner Web Address

Country/Expansion	Partner	Web Address
Asia	Association for Sustainable and Responsible I nvestment in Asia (ASrIA)	www.asria.org
Australia & New Zealand	Investor Group on Climate Change (IGCC)	www.igcc.org
Brazil	Banco ABN Amro Real ABRAPP	www.abnamro.com
Brazil	Fabrica Ethica	www.abbrapp.org.br
Brazil	Conference Board of Canada	www.fabricaethica.com.br
Canada	CDP Secretariat	www.conferenceboard.ca
Electric Utilities	AXA	www.cdproject.net
France	Agence de L'Environnement et de la Maitrise de l'Energie (ADEME)	www.axa.com
France	BNP Paribas	www.ademe.fr
France	BVI Bundesverband Investment und	www.bnpparibas.com
Germany	Asset Management e.V	www.bvi.de
Germany	WWF Germany	www.wwf.de
India	Confederation of Indian Industry	www.ciionline.org
India	WWF India	www.wwfindia.org
Italy	CDP Secretariat Europe	www.cdproject.net
Japan	CDP Secretariat Japan	www.cdproject.net
Nordic Region	CDP Nordic Secretariat	www.cdproject.net
Nordic Region	KLP	www.klp.no
Nordic Region	Folksam	www.folksam.se
Nordic Region	Nutek (Swedish Agency for Economic & Regional Growth)	www.nutek.se
South Africa	Incite	www.incite.co.za
South Africa	National Business Initiative (NBI)	www.nbi.org.za
Switzerland	Ethos	www.ethosfund.ch
Switzerland	Pictet Asset Management	www.pictet.com
Transport	CDP Secretariat	www.cdproject.net
UK	Department for Environment, Food and Rural Affairs (DEFRA)	www.defra.gov.uk
UK – Adaptation	UK Climate Impacts Programme	www.ukcip.org.uk
U.S.	Merrill Lynch	www.ml.com

Appendix II

Company Responses

Company Name	Sector	Response Status
Ashok Leyland Ltd	Automobiles	NR
Bajaj Auto Ltd	Automobiles	NR
Cummins India Ltd	Automobiles	NR
Hero Honda Motors Ltd	Automobiles	AQ
Mahindra & Mahindra Ltd	Automobiles	NR
Maruti Udyog Ltd	Automobiles	AQ
Motor Industries Co Ltd	Automobiles	NR
Pricol Ltd	Automobiles	AQ
Tata Motors Ltd	Automobiles	NR
Bank of Baroda	Banks - Asia	NR
Bank of India	Banks - Asia	NR
Canara Bank	Banks - Asia	AQ
HDFC Bank Ltd	Banks - Asia	AQ
Housing Development Finance Corporation Ltd	Banks - Asia	AQ
ICICI Bank Ltd	Banks - Asia	AQ
Indian Overseas Bank	Banks - Asia	DP
Industrial Development	Banks - Asia	AQ
Bank of India Ltd Kotak Mahindra Bank	Banks - Asia	 AQ
Oriental Bank Of Commerce	Banks - Asia	NR
Punjab National Bank Ltd	Banks - Asia	NR
Rabo Finance India	Banks - Asia	AQ
State Bank of India	Banks - Asia	NR
Union Bank of India	Banks - Asia	DP
Uti Bank Ltd	Banks - Asia	NR
ITC Limited	Beverages & Tobacco	AQ
United Spirits Ltd	Beverages & Tobacco	NR
Bharat Forge Ltd	Construction & Engineering	NR
Hindustan Construction Company	Construction & Engineering	AQ
Jaiprakash Associates Ltd	Construction & Engineering	NR
Punj Lloyd Ltd.	Construction & Engineering	AQ
Sterlite Industries, India Ltd	Construction & Engineering	NR

ACC Ltd	Construction Materials	NR
Century Textiles & Industries Ltd	Construction Materials	NR
Gujarat Ambuja Cements Ltd	Construction Materials	NR
Larsen & Toubro Ltd	Construction Materials	NR
Ultra Tech Cement Ltd	Construction Materials	NR
Adani Enterprises Ltd	Distributors	NR
Asian Paints Ltd	Diversified Chemicals	NR
Hindalco Industries Limited	Diversified Chemicals	AQ
Indian Petrochemical Corporation Limited	Diversified Chemicals	NR
United Phosphorus Ltd	Diversified Chemicals	NR
India Bulls Financial Services Ltd	Diversified Financials - Asia	NR
Infrastructure Development	Diversified Financials - Asia	NR
Finance Corporation		
Reliance Capital	Diversified Financials - Asia	AQ
ABB Ltd (India)	Diversified Industrial	NR
BF Utilities Ltd	Diversified Industrial	NR
Reliance Industries	Diversified Industrial	NR
CESC Ltd	Electric Utilities - International	AQ
National Hydroelectric Power Corporation Ltd (NHPC)	Electric Utilities - International	AQ
National Thermal Power (NTPC)	Electric Utilities - International	AQ
Neyveli Lignite Corporation Ltd	Electric Utilities - International	NR
PowerGrid	Electric Utilities - International	AQ
PTC India Ltd	Electric Utilities - International	AQ
Reliance Energy Ltd	Electric Utilities - International	NR
Suzlon Energy Ltd.	Electric Utilities - International	NR
Tata Power Co	Electric Utilities - International	NR
Bharat Electronics Ltd	Electronic Equipment & Instruments	NR
Bharat Heavy Electricals Ltd	Electronic Equipment & Instruments	AQ
Canon India PVT Ltd	Electronic Equipment & Instruments	AQ
LG Electronics India PVT Ltd	Electronic Equipment & Instruments	AQ
Moser Baer	Electronic Equipment & Instruments	AQ
Samsung India Electronics	Electronic Equipment & Instruments	AQ
Siemens India Ltd	Electronic Equipment & Instruments	NR

Nestle India Ltd - see Nestle	Food Products	AQ
GAIL (India) Ltd	Gas Distribution	NR
Dabur India Ltd	Household & Personal Products	NR
Hindustan Lever Ltd (Unilever)	Household & Personal Products	AQ
Mahanagar Telephone Nigam Ltd	Integrated Telecommunication Services	NR
Videsh Sanchar Nigam Ltd	Integrated Telecommunication Services	NR
Infosys Technologies Ltd	IT Consulting & Services	AQ
Tata Consultancy Services	IT Consulting & Services	NR
Wipro Limited	IT Consulting & Services	AQ
Indian Hotels Co Ltd	Leisure& Entertainment & Hotels	NR
Hindustan Zinc	Metals & Mining	NR
National Aluminum Company Ltd	Metals & Mining	NR
Sesa Goa Limited	Metals & Mining	AQ
HT Media Ltd	Movies & Entertainment	NR
Sun TV Ltd	Movies & Entertainment	NR
Zee Telefilms Ltd	Movies & Entertainment	NR
Pantaloon Retail (India) Ltd	Multiline Retail	NR
Bharat Petroleum Corporation Ltd	Oil & Gas Exploration & Production	AQ
Essar Oil Ltd	Oil & Gas Exploration & Production	AQ
Hindustan Petroleum Corporation Ltd	Oil & Gas Exploration & Production	NR
Indian Oil Corporation Limited	Oil & Gas Exploration & Production	NR
Oil & Natural Gas	Oil & Gas Exploration & Production	AQ
Reliance Petroleum Limited	Oil & Gas Exploration & Production	NR
Cipla Ltd	Pharmaceuticals	NR
Dr Reddys Laboratories Ltd	Pharmaceuticals	AQ
Glaxosmithkline Pharmaceuticals	Pharmaceuticals	AQ
Glenmark Pharmaceuticals Ltd	Pharmaceuticals	NR
Nicholas Piramal India Ltd	Pharmaceuticals	NR
Ranbaxy Laboratories Ltd	Pharmaceuticals	NR
Sun Pharmaceuticals Industries Ltd	Pharmaceuticals	NR
DLF Ltd	Realty	AQ
Financial Technologies (India) Limited	Software	NR
HCL Technologies Limited	Software	NR
I-Flex Solutions Ltd	Software	NR

Patni Computer Systems Ltd	Software	NR
Satyam Computer Services Ltd	Software	NR
Tech Mahindra Limited	Software	NR
Hindustan Copper Ltd	Steel	NR
Jindal Steel & Power Ltd	Steel	NR
JSW Steel Ltd	Steel	AQ
Steel Authority of India Ltd	Steel	NR
Tata Steel Ltd	Steel	AQ
Aditya Birla Nuvo Ltd	Textiles, Apparel & Luxury Goods	NR
Grasim Industries Ltd	Textiles, Apparel & Luxury Goods	NR
Mangalore Ref & Petrochemicals Ltd	Trading Companies & Distributors	NR
Container Corp of India	Transportation	NR
Bharti Airtel	Wireless Telecommunication Services	AQ

Appendix III

CDP5 Questionnaire

Carbon Disclosure Project (CDP5) Greenhouse Gas Emissions Questionnaire

We request a reply to the following questions by the 31st May 2007. Please answer the questions as comprehensively as possible or state the reasons why you are unable to supply the information requested. If at this stage you can only provide indicative information we still welcome this, as a 'best guess' is more valuable to us than no response.

One of the main objectives this year is to improve the quality of the responses and standardize reporting to facilitate better comparison of data across and within Sectors. We therefore request that answers to the following questions are provided for your company as defined in your consolidated audited financial statements. If you are unable to respond on this basis, please explain why and detail the reporting boundaries you have used. We recognize GHG emissions and Climate Change have varying impacts on Sectors and companies.

We have therefore divided the questionnaire into two sections to reflect these differences. Companies are encouraged to answer both parts of the questionnaire where relevant.

Section A: For all companies to complete.

Section B: For the following companies to complete:

1. Companies with combustion installations with a rated thermal input exceeding 20 MW.

2. Companies involved in the following Sectors:
- automobiles & components
- aerospace & defense
- chemicals
- construction materials
- electric utilities
- energy equipment & services
- oil, gas & consumable fuels
- metals & mining
- paper & forest products transportation

3. Companies in any Sector that may be significantly influenced by GHG emissions or Climate Change.

New procedures for CDP in 2007.

Please use our website for direct data entry via www.cdproject.net/cdp5. If necessary, send your response electronically in English to the Project Coordinator at info@cdproject.net.

Your response will be made publicly available at www.cdproject.net in September 2007, unless you notify us to the contrary. If you inform us that you do not want your information disclosed, we will only use it in production of aggregate statistics.

For additional guidance and information please see the Further Information attached to this questionnaire, or refer to the Reporting Guidance section at www.cdproject.net.

Section A: For all companies to complete

1 Climate Change Risks, Opportunities and Strategy
For each question please state the time period and where possible the associated financial implications.

a **Risks:** What commercial risks does Climate Change present to your company including, but not limited to, those listed below?

i Regulatory risks associated with current and/or expected government policy on Climate Change e.g. emissions limits or energy efficiency standards.
ii Physical risks to your business operations from scenarios identified by the Intergovernmental Panel on Climate Change or other expert bodies, such as sea level rise, extreme weather events and resource shortages.
iii Other risks including shifts in consumer attitude and demand.

b **Opportunities:** What commercial opportunities does Climate Change present to your company for both existing and new products and services?

c **Strategy:** Please detail the objectives and targets of the strategies you have undertaken or are planning to take to manage these risks and opportunities. Please include adaptation to physical risks.

d **Reduction targets:** What are your emissions reduction targets and time frames to achieve them? What renewable energy and energy efficiency activities are you undertaking to manage your emissions? (This question not required if answering Section B.)

2 Greenhouse Gas Emissions Accounting1

a Methodology: Please provide the following information on your company's emissions measurements:

i The accounting year used to report GHG emissions. 2
ii The methodology by which emissions are calculated.
iii Whether the information provided has been externally verified or audited.
iv An explanation for any significant variations in emissions from year to year, e.g. due to major acquisitions, divestments, introduction of new technologies, etc.

b **Scope 1 and 2 of GHG Protocol:** Direct and Indirect GHG emissions and electricity consumption. Please complete the table below for tonnes CO2e emitted and electricity consumption:

	Globally	Annex B Countries
Scope 1 activity tonnes CO2e emitted		
Scope 2 activity tonnes CO2e emitted		
MWh of purchased electricity		
Percentage of purchased MWh from renewables		

Section B: To be completed by companies defined in the introduction to this questionnaire

3 Additional Greenhouse Gas Emissions Accounting
Using the methodology as set out in 2(a), please state your Scope 1 and 2 emissions as follows:

a **Countries:** For each country in which you have operations, where available.

b **Facilities:** For facilities covered by the EU Emissions Trading Scheme (EU ETS). Please also include the number of allowances you were issued under the applicable National Allocation Plans.

c **EU ETS impact:** What has been the impact on your profitability of the EU Emissions Trading Scheme?

4 Greenhouse Gas Emissions Management

a Reduction programmes: What emission reduction programs does your company have in place? Please include any reduction programs related to your operations, energy consumption, supply chain and product use/disposal.

i What is the baseline year for the emissions reduction program?
ii What are the emissions reduction targets and over what period do those targets extend?
iii What investment has been/will be required to achieve the targets and over what time period?
iv What emissions reductions and associated costs or savings have been achieved to date as a result of the program?
v What renewable energy and energy efficiency activities are you undertaking to manage your emissions?

b **Emissions trading:** What is your company's strategy for trading in the EU Emissions Trading Scheme, CDM/JI projects and other trading systems (e.g. CCX, RGGI, etc), where relevant?

c **Emissions intensity:** Please state which measurement you believe best describes your company's emissions intensity performance? What are your historical and current emissions intensity measurements? What are your targets?

d **Energy costs:** What are the total costs of your energy consumption e.g. from fossil fuels and electric power? What percentage of your total operating costs does this represent?

e **Planning:** Do you estimate your company's future emissions? If so please provide details of these estimates and summarize the methodology for this. How do you factor the cost of future emissions into capital expenditure planning? Have these considerations made an impact on your investment decisions?

5 Climate Change Governance

a **Responsibility:**

i Which Board Committee or other executive body has overall responsibility for Climate Change?
ii What is the mechanism by which the Board or other executive body reviews the company's progress and status regarding Climate Change?

b **Individual performance:** Do you provide incentive mechanisms for managers with reference to activities relating to Climate Change strategy, including attainment of GHG targets? If so, please provide details.

c **Scope 3 of GHG Protocol:** Other Indirect GHG emissions. Where feasible please provide estimates for the following categories of emissions:

i Use/disposal of company's products and services.
ii Your supply chain.
iii External distribution/logistics.
iv Employee business travel.

1 The six main Greenhouse Gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).
2 If you are responding to CDP for the first time, please provide details where available, of emissions for the last three measurement cycles.
3 For the purposes of responding to this section, please follow the World Resources Institute (WRI), World Business Council for Sustainable Development's (WBCSD's) Greenhouse Gas Protocol (corporate standard revised version), details of which can be found at www.ghgprotocol.org

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