Disclosure Pattern of Carbon Risk Factors: Case of Twenty High Performing Companies in India (As per Carbon Disclosure Project Report, 2013)

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Abstract

With the increasing adverse effects of climate change, the companies are becoming pro active and taking efforts and measures to mitigate the climate change. Moreover, it is becoming vital for the companies to disclose their environmental performance to the stakeholders. Investors are demanding the companies to go for climate change related disclosure and more specifically about the carbon risk related disclosure practices. Many Indian companies are doing this voluntary and supplying such information to the carbon disclosure project (CDP) organization. Carbon disclosure project (CDP) is an international, not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage and share vital environmental information. CDP evaluates companies on the basis of their response to the climate change questionnaire and ranks them as per their disclosure score. In 2013, CDP sent the climate change questionnaire to 200 companies in India (based on market capitalization). Out of which, 55 companies responded. The list of top 20 Indian companies having high disclosure scores is furnished by the CDP. This paper analyzed the sustainability report of all the top 20 companies in order to find out common carbon risk disclosure factors. In order to bring the uniformity in the disclosure practices, important carbon risk factors are identified and suggestion is made that all information related to the identified factors should be mandatorily furnished by top performing companies in India.

Keywords:

Climate Change, Carbon Emission Disclosure, Environment Performance, Sustainability.

Introduction

Year 2014 passed a significant landmark of 400 parts per million (ppm) of carbon dioxide in the atmosphere and is rapidly heading towards 450 ppm, accepted by many governments as the upper limit to avoid dangerous climate change. We are living in a world where global sustainability issues around energy and water security and climate change are dominating everyday headlines. The recently released report by the Intergovernmental Panel on Climate Change (IPCC) as a part of its 5th Assessment report has unequivocally indicated that the increase in the atmospheric CO_2 concentration by 40% since pre-industrial times is the largest contributor to global warming. The report clearly refers to human influence on climate change, concluding that only sustained and substantial reductions of GHG emissions will be able to limit the increasing rate of climate change. With such climate related events on the rise affecting the country's growth, a rapidly developing economy like India requires a comprehensive carbon abatement, mitigation and adaptation strategy. No government can deliver without business coming on board as willing partners in this journey – bringing technology, building capacities and creating markets for development of sustainable alternatives. In this, business has to collaborate with governments to transition to a future that is equitable to all stakeholders and is cognizant of interdependent issues and planetary boundaries. From last decade, India has seen tremendous growth in industrialization, which has resulted in huge amount of carbon dioxide emission in the atmosphere. Power & Energy, Oil & Gas, Cement, Construction, Automobile, Transportation are some major sectors responsible for polluting the environment. Thus, business organizations have continuously exploited the natural resources which have adversely affected the environment. The consequences are not immediate but they are long lasting. Climate change is evident and it is necessary for the business organization to manage such change. At a time and age when enterprises are increasingly seen as critical components of the social system, they are accountable not merely to their shareholders from a revenue and profitability perspective but also to the larger society which is also its stakeholder.

Indian companies are realizing the importance of and their moral duty towards climate change. Many organizations have taken initiatives towards mitigating climate change. Indian companies are leveraging energy efficiency as a key tool to drive greenhouse gas (GHG) emissions reduction within relatively shorter payback periods. The key regulatory driver for this emerging trend has been the Perform, Achieve and Trade (PAT) scheme launched by the Bureau of Energy Efficiency (BEE) in April 2012. Further, Indian companies have shown increasing confidence in disclosing their GHG emissions, targets, and commitments and associated progress towards targeted reductions.

Review of Literature

Najah and Cotter (2012) indicate that carbon risk management is significantly and positively associated with carbon disclosure quality that made via carbon disclosure projects (CDP) and sustainability reports. Therefore, these results lend support to the economics-based disclosure theories. Firms that respond to and deal well with carbon and climate change risks and opportunities disclose more information about their strategies and policies. In addition, superior firms in terms of their carbon risk management practices release such information to differentiate themselves from inferior firms. This disclosure helps firms in reducing information asymmetry problems between the firm and external parties, especially its investors. Additionally, they highlighted that although firms' management have committed to reduce their carbon emission levels and adopted several strategies to mitigate climate change risks, these practices have not associated with neither a reduction in the ex-ante cost of equity capital or a increase in market value. In addition, the disclosure quality about these activities does not lower the ex-ante cost of equity capital or enhances a firm's market value.

Hoffmann, Busch (2008) suggested a holistic perspective on carbon flows on the micro level and defined four comprehensive and systematic indicators namely, carbon intensity, carbon dependency, carbon exposures and carbon risk for analysis and reporting of corporate carbon performance. The indicators shed light on the physical (carbon intensity and carbon dependency) and monetary dimensions (carbon exposures and carbon risk) of a company's current and future activities with respect to carbon inputs and outputs. To calculate the four indicators they developed the formula for each indicator. The indicators are important for policy makers to evaluate existing climate change and for investors and financial institutions to reveal which carbon costs and risks lurk behind the business activities that might affect their future competitiveness. Their suggestion encompasses corporate scope 1-2 carbon usage. Life cycle assessments should be conducted as they can deliver precise results for the life cycle-wide carbon analysis of products and services.

CERES (2006) in their report "Global Framework for Climate Risk Disclosure - A statement of investor's expectations for comprehensive corporate disclosure" highlighted that investors expect from the companies to analyze business risk and opportunities resulting from climate change and provide the same information to them in standard framework. The investors and collaborating organizations developed the framework through a one year climate risk disclosure initiative. The framework consists of four elements of disclosure- 1. Total historical, current, and projected greenhouse gas emissions, 2. Strategic analysis of climate risk and emissions management, 3. Assessment of physical risks of climate change and 4. Analysis of risk related to the regulation of greenhouse gas emissions. The investors strongly encourage companies to apply this new framework through existing reporting mechanisms, including mandatory financial reports, the carbon disclosure project, global reporting initiative and other forms of disclosure.

Ahmed and Sulaiman (2004) examined the extent and type of voluntary environmental disclosures in annual reports for the year 2000 by Malaysian companies belonging to construction and industrial products industries. Their study concluded that the extent of environmental disclosure was very low. And that the environmental information disclosed in annual reports was scattered all over the report and not concentrated in a specific section

Harte and Owen (1991) analyzed the annual reports of 30 British companies to investigate the environmental reporting practices in their annual reports and suggested for external standards on environmental reporting. Their study revealed that most of the environmental reporting was still at a general level and very close to a mere general commitment to green issues

Objective

1. To analyze the sustainability reports (2012-2013) of top 20 companies having highest disclosure score in the Carbon Disclosure Project Report, 2013 (India).
2. To identify the common carbon risk disclosure factors of the sample units.
3. To suggest Uniform carbon risk disclosure pattern for all listed companies at NSE and BSE.

Time period

Annual reports and sustainability reports of 2012-2013 is studied to analyze carbon risk factors and study how many factors related to carbon risk has been disclosed by sample units

Carbon Disclosure Leadership Index

Carbon disclosure project (CDP) is an international, not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage and share vital environmental information. It works with market forces to motivate companies to disclose their impacts on the environment and natural resources and take action to reduce them. Each year CDP publishes a number of analytical reports for our programs. The reports are written by CDP partner organizations and provide detailed analysis of the responses indicating important trends and developments. CDP published India 200 Climate change report, 2013- “Energy Efficiency: Driving the climate change response in Indian high performing companies”. This report analyzes responses from the top 200 Indian companies by market capitalization. In 2013, 55 companies responded to CDP.

Carbon Disclosure Leadership Index (CDLI) companies demonstrate excellence in every aspect of climate change management. Starting with a strong foundation of established internal data management practices and reporting, CDLI companies demonstrate integrated risk management and emissions reduction programs with a strategic focus, as well as an acute awareness of all climate-related issues affecting their business. By establishing board-level oversight, as well as customer transparency, these companies have established themselves as trusted and responsible organizations. From First Carbon Solutions' experience in scoring over 5000 companies since 2011, it has been found that strengthening a few key areas in disclosure are significant for companies to achieve the CDLI excellence

1. Setting and achieving Scope 1 and Scope 2 emissions reductions;
2. Establishing strategies for the mitigating risks and opportunities associated with climate changes;
3. Demonstrating how climate change is integrated into risk planning and corporate strategy; and
4. Providing 3rd party assurance of Scope 1, Scope 2 and Scope 3 emissions.

The range of disclosure scores achieved in 2013 by Indian companies varies from 16 to 98 and the companies that have scores of 70 or above have been included in the India Carbon disclosure Leadership Index (CDLI). Table 1

Table 1:- India 2013 Leaders (CDLI)

Rank	Company Name	Sector	Disclosure Scores
1	Wipro	IT	98
2	Essar Oil	EGY	92
3	Infosys Limited	IT	90
4	Shree Cement	MAT	90
5	Tech Mahindra	IT	89
6	TCS	IT	87
7	ACC	MAT	86
8	Tata Global Beverages	CS	85
9	ITC Limited	CS	85
10	Tata Steel	MAT	83
11	Larsen and turbo	IND	83
12	Mahindra and Mahindra	CD	83
13	Yes Bank Limited	FIN	81
14	Tata Chemicals	MAT	77
15	Dr. Reddy's laboratories	HC	76
16	Sesa Goa	MAT	76
17	HDFC Bank Limited	FIN	75
18	Ultratech Cement	MAT	74
19	Indian Hotels Co.	CD	71
20	HCL Technologies	IT	70

Source: India 200 Climate Change Report, 2013

CD = Consumer Discretionary; CS = Consumer Staples; EGY = Energy; FIN = Financials;
HC = Health Care; IT = Information Technology; IND = Industrials; MAT = Materials.

Starting with a strong foundation of established internal data management practices and reporting, CDLI companies demonstrate integrated risk management and emissions reduction programs with a strategic focus, as well as an acute awareness of all climate-related issues affecting their business. By establishing board level oversight, as well as customer transparency, these companies have established themselves as trusted and responsible organizations. Companies are ranked on the extent to which they have answered CDP's questions in a structured format. The above table reveals that Wipro score highest disclosure score which means that it has highest quality of disclosure and reporting regarding climate change. It shows completeness and quality of a company's response. A high disclosure score of Wipro signals that it provided comprehensive information about the measurement and management of its carbon footprint, its climate change strategy and risk management processes and outcomes. Similarly other companies have been ranked based on their extent to which they have answered CDP's questionnaire.

Carbon Disclosure Factors:-

It is very important for the organization to disclose environment related information to the stakeholders in appropriate way. Investors have started demanding such information. As per CDLI, Wipro, Essar Oil, Infosys; Shree Cement enjoys higher disclosure scores. In order to see what all factors related to carbon risk, the companies have disclosed, the sustainability reports of these top 20 companies were analyzed. All the factors related to carbon risk disclosure were analyzed and are presented in the below table no 2. The table factors have explained as below:-

Disclosure of:-

I= Environment Performance in Sustainability Report

II= Total green house gases Emissions (in absolute term)

III= Scope 1 Emission (in absolute term)

IV- Scope 2 Emissions (in absolute term)

V= Scope 3 Emissions (in absolute term)

VI= Total Energy Consumption in Current Year

VII= Total Direct Energy Consumption (in absolute Terms)

VIII= Total Indirect Energy Consumption (in absolute terms)

IX= Energy efficiency per employee per month

X= Carbon emission per employee per month

XI= Total reduction in carbon emission compared to previous year (in absolute term)

XII= Total reduction in carbon emission compared to previous year (in relative term)

XIII= Environment Plans: carbon Reduction plans (Specific and measurable in term)

XIV= Total expenditure on supply chain/ logistics effective process

XV= % of energy generated through renewable sources in current year

XVI= Increase in % of Renewable source of energy over previous year

XVII= Environment Protection Expenditure

Table 2-: Carbon Risk Related Disclosure Factors of Top 20 Companies

Rank	Companies	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	Total
1	**Wipro**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	**16**
2	**Essar Oil**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	**15**
3	**Infosys Limited**	Y	Y	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	Y	Y	N	**10**
4	**Shree Cement**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	Y	N	Y	Y	N	**12**
5	**Tech Mahindra**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	N	Y	Y	N	**11**
6	**TCS**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	N	Y	Y	N	**12**
7	**ACC**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	**13**
8	**Tata Global Beverages**	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	N	N	**3**
9	**ITC Limited**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	**13**
10	**Tata Steel**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	**13**
11	**Larsen and turbo**	Y	Y	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	**3**
12	**M &M**	Y	Y	N	N	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	**5**
13	**Yes Bank**	Y	N	N	N	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	**3**
14	**Tata Chemicals**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	**12**
15	[illegible]	Y	Y	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	**4**
16	**Sesa Goa**	N	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	**6**
17	**HDFC Bank**	Y	Y	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	**2**
18	**Ultratech Cement**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	**12**
19	**Indian Hotels Co.**	N	Y	N	N	N	Y	N	N	N	N	Y	Y	Y	N	N	N	N	**3**
20	**HCL Technologies**	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	**13**
TOTAL (Y)		**17**	**18**	**13**	**13**	**13**	**17**	**12**	**12**	**1**	**1**	**17**	**17**	**13**	**2**	**12**	**12**	**1**	

Source-: Complied by own

The above table reveals that out of 20 companies, 17 companies have prepared their sustainability report and have also disclosed the environment related information in the "environment performance" section of it. 18 out of 20 companies (90%) have disclosed their total green house gases emission in absolute terms. 13 out of 20 (65%) companies have also disclosed their emission in absolute terms from Scope 1, Scope 2 and Scope 3 activities. 17 out of 20 companies (85%) have made disclosure of total direct energy consumption in year 2012-2013, total reduction in carbon emission compared to previous year in relative and absolute terms. 12 companies out 20 (60%) also disclosed about the total direct energy and indirect energy consumption (in absolute terms) during the year 2012-2013. 13 companies (65%) disclosed about their specific, measurable carbon emission reduction plans and some of them have also mentioned about the base year for the consideration of carbon mitigation target.

12 companies out of 20 (60%) disclosed about total percentage of energy generated through renewable sources in the current year. They also disclosed the increase in percentage of renewable source of energy over previous year. Only 1 company (Wipro) made disclosure of energy efficiency per employee per month, carbon emission per employee per month.

Thus the table reveals that, Indian companies have improved the quality of their carbon risk disclosure, and most importantly they have started disclosing their green house emission level and energy consumption level in absolute terms and relative terms. Such information helps the stakeholders to analyze the environment performance of the companies in better way. But on the other side, disclosure regarding total environment expenditure, carbon emission per employee, energy efficiency per employee, total expenditure on supply chain effective process is lacking. There is no uniformity among the top companies regarding disclosure pattern of carbon risk factors.

Factors to be Considered for Uniformity in Disclosure Pattern

It is observed that companies are voluntarily providing there emission related data to carbon disclosure project organization and there is no such mandatory obligation on the disclosure pattern of the companies. In order to bring the uniformity it is essential that companies follow same disclosure pattern which will facilitate the comparison and will make easy for the stakeholders to evaluate the environmental performance of the organization. The sustainability report has no specific format and companies furnish the information as per their own convenience.

Whatever is measurable, it is manageable. Therefore it will become easier to combat climate change, if more of metric factors are included in the sustainability report. It will be easy for the organization to be more specific and take initiative if any deviation or loophole occurs. After analyzing the above company's sustainability report and through review of literature, some metric factors should be made as mandatory disclosure on the high performing companies in India. At least companies with high market capitalization should be included in such binding obligation. Through review of literature and study of sustainability report following factors were analyzed as important factors in carbon risk disclosure pattern, which companies should disclose in their sustainability report so that it provide transparency and easy method for the stakeholders to compare and evaluate their decision criteria.

1. **Total Green House Gas Emission (in Absolute term) -** the companies should measure and report their total amount of green house gas emissions in the concerned financial year. Moreover they should also provide with the methodology they adopted to calculate the same.

2. **Carbon Emission from Scope1, Scope 2 and Scope 3 activities-** Scope 1 and Scope 2 are activities which are directly related to production and manufacturing concern. Scope 3 activities do not bear any direct relation but yes they contribute in carbon emission. The organization should classify all its activities on the basis of their relation to carbon emission and should show the total emission (in absolute terms) from different scope separately.

3. **Total Energy Consumption (in absolute term)-**: Organization should disclose their total energy consumption in the concerned financial year. They should also disclose their direct and indirect energy consumption in absolute terms.

4. **Total Energy Consumption from renewable sources-**: Companies if meeting their energy demand from renewable sources, then it is should disclose energy consumption from renewable sources in absolute terms. Moreover any change in energy consumption as compared to previous year should be disclosed in relative term.

5. **Setting measurable carbon mitigation plan-:** the environment plans formed by the organized should not be general in nature. They should be specific and measurable so that they can be easily monitored.

6. **Environment expenditure-**: the organization should disclose the total amount of environment cost incurred during the financial year. Moreover, they should specify the broad category on which expenditure is incurred.

7. **Creating environment provision fund-** in order to face uncertain climate change problems, the organization should set up climate change fund or green fund and they can also set a fixed percentage of net profit to be transferred to such fund annually.

8. **Calculating carbon emission and energy efficiency per employee per month-**: to be more specific and pro active, the organization can calculate their emission and efficiency rate per employee. So that carbon mitigation plans can be incorporated easily.

Other than the above point the companies, the company should also disclose about the number of training sessions provided to the senior and middle level management for climate change, no. of cases pending at Center Pollution Control Board (CPCB) and other such vital information should be furnished to the stakeholders.

Conclusion -:

Thus we can conclude that Indian companies are gradually increasing their level of quality disclosure related to the environment performance specifically to the carbon emission. But still there is a need of uniformity in such disclosure. Transparent and measurable information will help the stakeholders to develop a better approach towards the organization. Moreover the companies will be able to identify the climate change risks and opportunities and will be able to prepare itself by having better management system in the organization.

Suggestion for Future Research -:

The above paper is an attempt to highlight the certain important factors that should be consider as vital in carbon risk disclosure. An in-depth study of such factors is needed. Environmental Disclosure aspects in Indian context need proper streamlining and it calls for further deep study of measurable and non measurable factors and its correlation to company's financial performance. Models for such environmental performance can be developed that analysis the environment

References

Ahmed, N.N.N.,AND Sulaiman, M., (2004) Environmental disclosures in Malaysian annual reports: A legitimacy theory perspective. *International Journal of Commerce and Management*. 14(1),PP. 44-58.

Butner, K.,Geuder,D., Hittner, J. (2008). Mastering carbon management Balancing trade-offs to optimize supply chain efficiencies. *IBM- Institute for Business Value*, New York.

CERES. (2006).Global Framework for Climate Risk Disclosure - A statement of investor's expectations for comprehensive corporate disclosure. Boston. Retrieved from http://www.ceres.org/resources/reports/global-framework-for-climate-risk-disclosure-2006/view.

Cratbree, J. (August 5, 2013). Industrial Investors makers hurt by slowdown. *Financial Times*. retrieved from http://www.ft.com/intl/cms/s/0/9dfad712-fdd2-11e2-8785-00144feabdc0.html#axzz2fy5vOMjd

Harte, G. & Owen, D. (1991). Environmental Disclosure in the Annual reports of British Companies: A Research Note. *Accounting Auditing & Accountability Journal*, 4(3), 51-61.

Hoffmann,V. S., & Busch, T. (2008). Corporate Carbon Performance Indicators Carbon Intensity, Dependency, Exposure, and Risk. *Journal of Industrial Ecology*, 12(4), 505-520.

IPCC,Climate change (2013). The physical science basis, Summary for policymakers. Retrieved from http://www.ipcc.ch/report/ar5/wg1/docs/WGIAR5_SPM_brochure_en.pdf

Najah, M.M., Cotter, J. (2012). Are climate change disclosures an indicator of superior climate change risk management?. *Australian Centre for Sustainable Business and Development*. Retrieved from http://mams.rmit.edu.au/myfzrqb7lhvw1.pdf

World Bank (2013). Turn down the heat: climate extremes, regional impacts and the case of resilience. *Potsdam Institute for Climate*. Retrieved from http://www.worldbank.org/content/dam/Worldbank/document/Full_Report_Vol_2_Turn_Down_The_Heat_%20Climate_Extremes_Regional_Impacts_Case_for_Resilience_Print%20version_FINAL.pdf

United Nations, Department of Economic and Social Affairs (June 2013) *LINK Global Economic Outlook*

Websites

http://www.wipro.org/resource/Wipro-sustainability-report-2012-13.pdf

http://www.essarenergy.com/media/42140/essar_sr_2013.pdf

http://www.infosys.com/sustainability/Documents/infosys-sustainability-report-2012-13.pdf

http://www.shreecement.in/pdf/shree-cement-csr.pdf

http://www.mahindra.com/How-We-Help/Environment/Sustainability-Reports

http://www.tcs.com/SiteCollectionDocuments/About%20TCS/TCS-Corporate-Sustainability-Report-2012-13.pdf

http://www.acclimited.com/newsite/pdf/ACCWebUpdate2012_final.pdf

http://www.tataglobalbeverages.com/sustainability/sustainability

http://www.itcportal.com/sustainability/sustainability-report-2013/sustainability-report-2013.pdf

http://www.tatasteelindia.com/corporate-citizen/pdf/csr-12-13.pdf

http://www.larsentoubro.com/lntcorporate/common/UI_Templates/pdf/L&T%20CSR%202012.pdf

http://www.yesbank.in/investor-relations/sustainability-report.html

http://www.tatachemicals.com/sustainability/sustainability_report.htm#.VAm0i_mSxf0

http://www.drreddys.com/media/st-reports.html

http://www.sesasterlite.com/sustainable-development-community/responsible-stewardship.aspx ?seachtext=Environment

http://www.hdfc.lk/dwnloads/sustain_gov/hdfc_csr.pdf

http://www.ultratechcement.com/sustainability.php

http://www.tajhotels.com/About-Taj/Company-Information/Earth.html

http://www.hcltech.com/socially-responsible-business