

CORPORATE ENERGY MANAGEMENT SYSTEMS AND SOCIETAL INCLUSIVENESS – A STUDY OF CEMENT COMPANIES LISTED IN BSE100 INDEX**Dr. Maruthi Ram . R***Professor & Research Guide, Dayananda Sagar Academy of Technology & Management, Bengaluru.***Abstract**

It is wisely said that cheapest megawatt is the one which is not used. Documented research evidence shows that continuous downward usage trend of power have an upward trend in the improvement of inclusiveness. This has relevance in the present context of post 1991 reforms of Indian economy which has been moving towards free market economy. While the reforms have resulted in favourable BOP position and attractive GDP growth rate, we seem to have ignored the impact of external costs and its implicit impact on inclusiveness, associated with the growth. The focus all along has been on consumption based allocative efficiencies rather than productive efficiencies. Efforts by the corporates have a marginal effect because of weak governance systems in place.

In this context, the dichotomy regarding the debate between Energy saving certificate trading and carbon trading needs to be properly addressed with effective mechanisms under the “Triple Bottom line” or PPP(People-planet-profits) umbrella. Besides, to accelerate the programme in India, we need a paradigm shift in moving the concepts from the board room to society to have a meaningful social inclusiveness. Unless this is done, we may be jeopardizing the lives of future generation, particularly the rural youth.

Against this background paper examines the energy management systems put in place by the cement companies listed in BSE100 index. Cement companies, in India are located in semi-urban and rural areas and by nature they cause highest amount of negative externalities undermining the inclusiveness of the underprivileged locals.

Key Words: *Carbon Foot Print, Energy Management Systems, Inclusiveness, Social Costs.*

1. Introduction

Companies today operate in a carbon-constrained world. First, identification and measurement of direct and indirect carbon footprint is critical for mitigating supply chain risks and improving the inclusiveness of the people in the process. Second, setting the system boundary of measurement is another important issue to integrate the issue of carbon footprint into supply chain management. Third, developing a map of product carbon footprint facilitates identification and measurement of carbon emissions across the supply chain. This is applicable more to developing economies where there need to balance the twin objectives of equitable growth and sustainability. Inclusiveness is of paramount importance in the case of equitable growth. Universally, applicability of this concept differs across different sectors of the economy, including India. Under the GRI and WBCSD schemes world standards have been evolved, which are essentially to be implemented by all the firms and public bodies, if one has to achieve meaningful inclusive growth. Obviously, Indian firms and public bodies also have to incorporate and integrate the same into their daily processes.

In the Indian context sectorial performances are varied with its inherent unique characteristics .It is essential that one should address them separately before integrating the same, otherwise the micro level issues are ignored and meaningful results cannot be achieved for better inclusiveness. This paper addresses two issues. First in the industry level i.e., cement sector. Secondly extension of inclusivity to dwelling units in the urban setting. India needs to build a bottom up methodology that prioritizes efforts towards greatest immediate return and to achieve an accelerated solution. The study shows that all the industries in the sector are not responding voluntarily to the crisis type of situation. Secondly, micro study of a small dwelling unit structures in UK shows that the concept energy conservation also are mandated in such units, and the results are astounding. If this concept can be extrapolated to urban concrete jungles of developing India, better sustainability can be achieved in the Indian context as well. This needs a relook at our policy decisions. Low carbon adaptive reuse should be viewed more

holistically, integrating social, economic, environmental, urban and political policies.(Yung and Chan,2012;Petze et al.,2010)

This paper is of benefit to academics, managers and policy makers by providing a new way to integrate carbon emissions in supply chain management. Since climate change and carbon footprint present challenges to many industries, increasing our understanding of how to integrate carbon footprint in supply chain management is necessary, but has seen little research in the cement sector.

Literature review is dealt in chapter2, methodology is dealt in chapter 3.Results and discussion is dealt in Chapter 4.Chapter 5 deals with conclusion

2. Literature Review

This study begins with literature review of the factors that contribute to the goal of sustainable development in the conservation in marginal situations, and exerts influence for the adoption of good working conditions in its supply chain. It is well acknowledged that a low carbon emission is one of the key factors contributing to sustainable urban development and effectively tackling climate change. The general aim of Footprint studies have been more focused towards that of public awareness and education, with its use as a policy tool taking a more secondary role. Increasingly, confidence is growing in the robustness of the Ecological Footprint, so that many local authorities now see the Footprint as more of a policy as well as an educational tool. Environmental issues and actions of solidarity are also considered within a global scope. Ethics of care and concern for specific aspects of the common good seem crucial drivers of any company, as do personal values, character, and leadership of the owner-manager and manager-owners of the firms.(Hovik and Mele' 2009).

In summary, the Ecological Footprint can be seen as a tool that will help promote 'integrated thinking' and a performance culture, and can contribute to local strategic policy, provide evidence-based policy decisions and help prioritize the importance of sustainability.(Barett et al.,2005; Lee,2011).

Cement Sector

"The cement industry is at the center of the climate change debate — but the world needs construction material for schools, hospitals and homes," Olivier Luneau (2006) .This industry is a significant contributor to global carbon dioxide (CO₂) emissions. Sixty percent of emissions caused by making cement are from the chemical process alone. At the current improved performance levels about 290 kgs of carbon- di-oxide is produced for each Metric ton of cement produced. It is expected that this industry will come under increasing regulatory pressures to reduce its emissions and contribute more aggressively to mitigating global warming. It is also important that the industry's stakeholders become more familiar with greenhouse gas (GHG) emission and associated global warming issues, along with emerging policies that may affect the future of the industry(Szabó et al.,2006). In the EU, the cement industry is one of the largest carbon emitting industrial sector in the EU. (Rehan and Nehdi,2006).The allocation approaches in the cement sector, have very different impacts on competitiveness and emissions abatements (Demailly & Quirion,2006).All of these has an impact on global warming, particularly in emerging economies such as India. This impacts inclusiveness and equitable growth. (Grubb.M & Neuhoff.K, 2011)

Housing Sector in UK

Carbon emission in Housing sector: In UK the housing sector accounts for around 30 to 40% of all the UK's carbon dioxide total emissions. The Select Committee on Environmental Audit noted that emissions from housing could constitute over 55% of the UK's target for carbon emissions in 2050.

Zero carbon ambition: The Government has plans that all new homes will be 'zero-carbon' by 2016 (i.e. built to zero-carbon building standards). To encourage this, an exemption from Stamp duty land tax is being granted, for all new zero-carbon homes up to £500,000 in value.

Energy Performance Certificates:In UK,Energy Performance Certificates (EPCs) are needed whenever a **property is:**

Built-sold-rented

Energy savings certificates (ESCs):Energy savings certificates (ESCs) are tradable certificates, that typically represent one megawatt-hour (MWh) of energy savings from efficiency projects. ESCs are also known by various other names, including: Energy efficiency certificates or credits (EECs)/White certificates or tradable white certificates (TWCs)/White Tags

ESCs encourage investments in energy efficiency: ESCs can offer utilities a flexible means of achieving energy efficiency targets while rewarding commercial and industrial companies that are successful in reducing energy use with an additional revenue stream that may improve the economics of a project. These certificates can be traded and sold to liable entities that have an obligation to meet a predetermined energy savings quota.

3. Methodology

The purpose of this paper is to improve our understanding of carbon footprint within the context of cement sector and its related supply chain management. The case study approach is employed as a research method for cement and other sectors. Companies listed in cement sector in BSE100 index and its peer listed firms are considered. This is because CSR initiatives and inclusiveness are expected to start with big firms. Annual reports of these companies for the year 2012-13 were checked for the following criteria.

1. Whether the Company continued to participate in the Carbon Disclosure Project (CDP) and reported its emission data with respect to the following.
2. Scope 1 (Emission from own energy),
3. Scope 2 (Emission from purchased energy)
4. Scope 3 (Emission from travel and transport).
5. Is the Company has also been reporting its data under GNR (Getting the Numbers Right) database of CSI (Cement Sustainability Initiative) on CO2 emissions and energy consumption.
6. Whether water audit was carried out through an external agency.
7. Whether the company’s report is prepared as per the latest guidelines issued by Global Reporting Initiative (GRI).
8. Whether the Company is a member of Cement Sustainability Initiative (CSI) of World Business Council of Sustainable Development (WBCSD).

Regarding ESC and energy control, peripheral study has been made. This is mainly to bring awareness and urgent need for mandating the same in urban settings.

4. Results and Discussion

The Table 1, Reports the Results of the Compliance of the Parameters by the Cement Companies With Respect to Global Standards

PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	TOT
1)Whether the Company continued to participate in the Carbon Disclosure Project (CDP) and reported its emission data with respect to the following																						
Scope 1 (Emission from own energy)	N	N	Y	N	N	-	N	N	N	N	N	N	N	N	N	N	N	N	N	-	N	1/21
Scope 2 (Emission from	N	N	Y	N	N	-	N	N	N	N	N	N	N	N	N	N	N	N	N	-	N	1/21

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14. CDM: Clean development mechanism.
15. Olivier Luneau: Head of sustainability at Lafarge,Paris.