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Environmental Stewardship for Sustainable Business- A Review in Global Perspective

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ABSTRACT

Environmental stewardship and compliance is a major step towards sustainable business. The important environmental concerns arise at procurement of resource/manufacturing and sales, product use and collection and disposal of end-of-life product stages. A global reporting matrix of materials is advocated by UN. The advocacy of utmost importance is reduction, re-use and recycling in any corporate company. Critical issues in environmental stewardship are energy, water and emissions. Carbons footprint - conscious growth is an integral part of sustainability strategy. Investments in R&D and compensating exploited eco-system are must to retain the sustainability of business. UNGC Communication on Progress (COP) Mapping has detailed the issues to be monitored and reporting process. The issues on environmental Stewardship were under UNGC Communication on Progress (COP) mapping viz., Criterion 13 to 16. The COP describes robust commitments, strategies or policies, effective management systems and key outcomes of integration of the environmental principles in the area of Implementation. Companies are associating with World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI) for standard procedures for water related risks and assessments. At global level efforts for limiting temperature increase to less than 2°C is taken seriously and action programme is being set. The paper describes the issues in relation to reporting to be made under international standards.

Keywords: *Environment, Sustainability, Carbon Footprint, Disclosures.*

1. INTRODUCTION

Environment is an important aspect in development of societies. Global awareness and concern for environment resulted in corporate companies looking for sustainable options. Environmental safety and issues related to its management in a company arise at various stages of operations. The stages of concern are raw materials procurement, toxic materials and emissions resulting from manufacturing and recycling processes. UNGC Communication on Progress envisages clear directions on environmental safe guards. Adherence to regulations on toxic materials and making voluntary commitments to eliminate certain chemicals, de-selection has become a mandatory in the wake of strict laws and standards. Companies are working towards energy management through policies to increase use of renewable energy. Climate Policies at local, national, regional and international levels necessitated steps to develop strategies for energy conservation and efforts in reduction of greenhouse gas emissions. Collaboration across value chain on innovation has become an important business aspect to meet societal needs through product design/ innovative technology and high-quality, high-performance eco- friendly products. Investments in improving facilities at all functional areas of operational sites to minimize environmental impact, improve carbon and energy cycles is a major thrust for big companies in their various ethnic operations. In an effort to meet international standards companies are now focussing on climate change mitigation and carbon footprint-conscious growth as an integral part of sustainability strategy. With the earth increasingly covered with the greenhouse Gases such as CO₂, it is predicted that the air temperature will increase up to 4.8°C by the end of the 21st century from the average temperature during the period from 1986 to 2005 according to IPCC Fifth Assessment [1].

Companies are looking at low carbon growth and alternative fuels, renewable energy, biomass etc. Approach towards reducing GHG emissions by corporate companies is a step to improve upon energy efficiency and also increase the share of renewable resources. The protocol for GHG emissions fall mainly in to three categories viz., Scope 1, Scope 2, Scope 3 to avoid 'double-counting' of emissions. Developing strategies for reducing emissions is a continuous process for sustainability and to retain the market and economic growth.

Towards this direction corporate companies have evolved strategies for environmental stewardship to match different situations in which they are operating. The present paper details various key issues related to environmental safety and their management aspects being advocated by major companies.

2. MATERIALS AND METHODS

Study was made based on the web based information available and disclosures made by corporate companies on environmental stewardship. An attempt has been made to describe key aspects of environmental protection in corporate companies established in different ethnic zones, their sensitivity towards issues and level of commitment in dealing with issues related to environment.

3. RESULTS AND DISCUSSION

The material matrix under GRI G4 Standard on environmental Stewardship constitutes Materials, Energy, Water, Biodiversity, Emissions, Effluents & Waste, Products & Services, Compliance, Transport, Overall (Environmental expenditure), Supplier Environmental Assessment, Environmental grievance and Mechanisms [2].

Table 1: Policy- Frame Work for Environmental Stewardship

	Setting targets & tracking environmental commitments	
Environmental policies and strategic planning	Environmental Stewardship	Environmental management systems
Designing to minimize air quality problems		Operational controls, procedures, and practices
Design and specification for recycling		Measuring environmental performance
Planning for energy conservation		Design for sustainable, low maintenance
	Preserving air quality in maintenance and operations	

The level and type of environmental concern depends on the domain of company’s operation. Table 1 shows the policy planning necessary for environmental stewardship. Initiatives are required to eliminate environmental risks at various levels and to reduce pressure on natural resources. (Table 2). Carbon footprint is the total of greenhouse gases produced directly and indirectly to support human life expressed in equivalent tons of carbon dioxide (CO₂). Carbon dioxide is called as greenhouse gas causing global warming with methane and Ozone. CF is an important tool in understanding the possible loads of green house gas emission from industries and workplaces and to work towards sustainable options (Table 3). External and internal audit system helps in taking up counter measures to avoid/minimize environmental disasters (Table 4).

Table 2: Initiative for Elimination of Environmental Risks Related to Resources and Disposal (Ref: [3])

Development stage	Reduction	Re-use	Recycling
1 Stages of resources procurement, manufacturing and Sales	Design focusing on Reduction	Initiatives for saving resources & Re-use of used parts	
2 Product use stage	Design focusing on Reuse/Recycling Compliance	Recycling of by-products	
3 Collection/disposal of end-of-life products stage	Recycling of end-of-life products		
	Reduction of substances of concern	Compliance with the recycling law for end-of-life products and voluntary initiatives	

Table 3: Source of GHG Emission in an Organization

GHG emissions	Source
Scope 1	Manufacturing facilities and company owned fleet
Scope 2	Electricity purchased
Scope 3	Purchased Raw materials/goods and Services Transportation and Distribution Waste generated during Operations Use of recycled products

Table 4: Environmental Management Auditing System

Items of external audit and internal audit		Results of audits	Counter measures
External	1. Renewal audit 2. Surveillance	1. Emergency 2. Non-conformity 3. Items to be monitored	Correction
Internal	1. Overall 2. Local	1. Preventive 2. Patrol	Preventive measures

UNGC Communication on Progress (COP) Mapping [4] on Environmental Stewardship (Criterion 13-16) describes robust commitments, strategies and effective management systems for monitoring, evaluation and key disclosers. Energy conservation initiatives play major role in minimizing the energy needs at various stages of operation. Reduction of energy requirements for products and services are the effect of reduction in energy consumption pattern at various levels. At global level it is concluded that limiting global temperature increase to less than 2°C may help to substantially delay the most serious consequences of climate change (Figure 1). This requires a major effort globally to decrease emissions of CO₂ and stabilize the atmospheric concentration of CO₂ below 450 ppm.

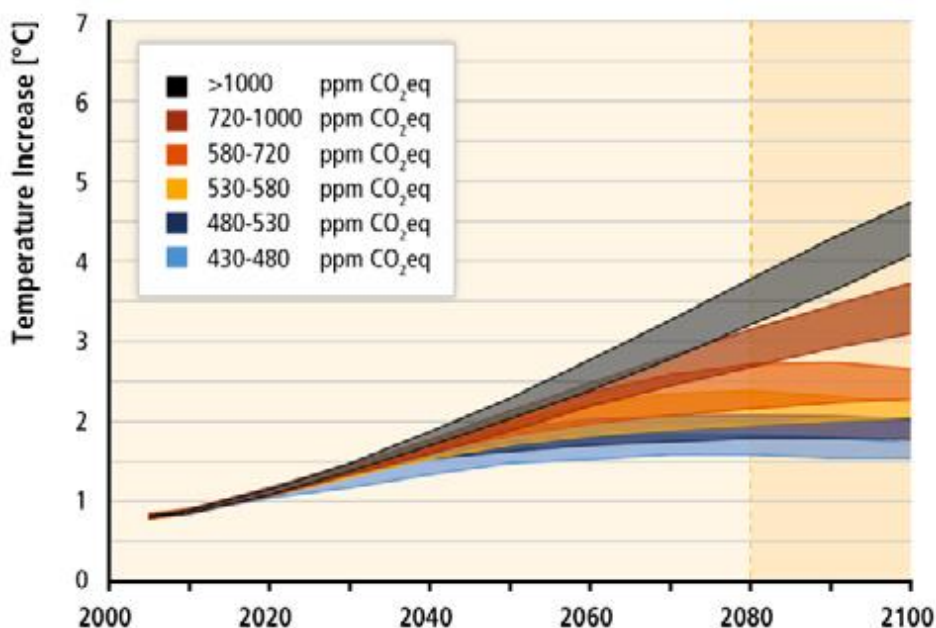


Fig. 1: Stabilizing Global Temperature. Ref: [5 & 6]

Water an important natural resource and its conservation is a global concern. Companies are working on strategies based on risk analysis (Table 5) and partnering with the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI) to assess the water stress level through the WRI's Aqueduct tool. WRI's Aqueduct risk mapping tool helps in knowing where and how water risks and opportunities emerging worldwide [7].

Table 5: Global Water Resource Risk Analysis and Strategy. Ref: [8]

Country	Type	Strategy
Korea	Physical risk (floods)	Create wetlands and dikes in response to floods affecting streams in the vicinity of our worksites; Purchase disaster insurance policies and regularly check flood control equipment
India	Physical risk (water quality degradation)	Increase the frequency of conducting in-house water quality analysis and the efficiency of water treatment facilities
Poland	Reputational risk (wastewater leaks)	Build an emergency response system and conduct regular drills in preparation for wastewater leaks
Egypt	Physical risk (droughts)	Secure water tanks to store water sufficient for one day operation of production facilities on average
South Africa	Regulatory risk (discharge)	Sewage and wastewater from worksites move to the terminal treatment facility within the industrial complex for processing, and thus pose lower risks of environmental accidents (no in-house sewage/wastewater treatment facility under operation)
Common	Physical risk (water quality degradation)	Secure water quality through the pre-intake water treatment process
	Physical risk (water outages)	Install dual water intake facilities and water collecting facilities to prevent production delays
	Regulatory risk (regulatory change in water use and discharge)	Abide by the in-house criteria stricter than country-specific legal discharge criteria
	Regulatory risk (enactment of efficiency standards)	Conduct water efficiency reviews in building new facilities and make facility investment to improve the water efficiency of existing facilities
	Regulatory risk (uncertainty over new regulations)	Continuously monitor global environmental regulations
	Reputational risk (lawsuits raised due to wastewater)	Continuously monitor effluent discharge; Build an environmental management system early on for new manufacturers

Table 6: WRI's Aqueduct risk mapping tool

S.N	Indicator	Low (0-1)	L-M (1-2)	M-H (2-3)	High (3-4)	Extremely high (4-5)
1	Inter-annual variability	< 0.25	0.25-0.5	0.75	1.0	>1.0
2	Seasonal variability	< 0.33	0.33-0.66	1.0	1.33	>1.33
3	Flood occurrence	0-1	2-3	4-9	10-27	>27
4	Drought severity	< 20	20-30	40	50	>50

In response to global alarm on climate change companies are working through initiatives that link business strategy with environmental strategy. Considering the effective utilization of resources one of the material issues and active promotion reduction/reuse/recycling activities is the main agenda of many corporate companies. Companies are promoting energy diversification by actively introducing large-scale solar and wind power generation at facilities, toward ultimately reducing our energy risk to zero. An analysis of amount of CO₂ emitted from any product from the processes of manufacturing to scrapping is called Life Cycle Assessment (LCA) of CO₂ emissions.

Companies have started working towards minimizing environmental risks till the product lasts. Similarly, cooperation/partnership with stakeholders from procurement to collection/disposal of end-of-life products companies can tackle the issues (Fig. 2).

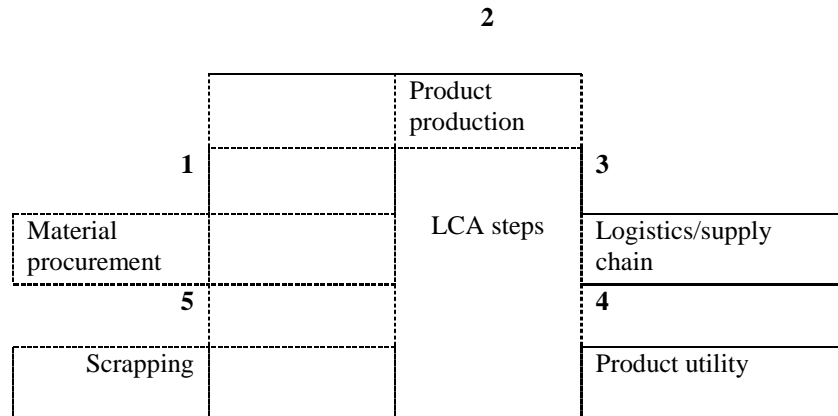


Fig. 2 Steps in life cycle assessment for of CO₂ emissions

4. CONCLUSION

Environmental stewardship is a major step towards sustainable business. A clear planning process and strategies to avoid major environmental disasters helps in safe guarding global environment. Planning carbon conscious growth helps in checking global warming and stabilizing temperatures.

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