

Sustainability Reporting and Coverage of Environment Social and Governance (ESG) Indicators by Indian Cement Companies with Respect to Climate Change

Dr Shraddha Mishra¹, Dr Nehal Anwar Siddiqui²

¹ Health, Safety & Environment, University of Petroleum & Energy Studies, Dehradun, Uttarakhand, India.

Abstract: Numerous researches have determined that climate change and sustainability are on the top of the agenda for global industries. With the climate change risk, it becomes more significant for cement industry which is third-largest source of anthropogenic emissions of carbon dioxide. In the last five years after Paris agreement 2015, ESG reporting and sustainability has gained attention by the investors and regulators for making business decisions and policy formulation. Now sustainability is not limited to pollution criteria rather has been considered as global risk for temperature rise which has to be maintained below two degree Celsius to avoid major catastrophes like water scarcity, disruption of supply chain, adverse health impacts etc. Here the study has been done on Indian cement industries to analyse the sustainability reporting and coverage of Environment Social and Governance indicators and the disclosure practices. It has been observed that companies have started disclosures on ESG but still the level of disclosure is not that extensive to understand the impact and response towards the climate change, which has been a key focus are for the business world, regulatory bodies, investors and other stakeholders.

Key words: Cement Sustainability, Environment Social and Governance, ESG Indicators for Cement Sustainability, Sustainability criteria, Sustainability index, climate change.

1. Introduction:

In the recent times climate change and sustainability are on the top of the agenda list of business executives across globe. It has gained global focus by various countries and the common consensus has been made up to take actions against climate change. Climate change is such a risk that has the potential to affect all companies across globe, irrespective of size and nature of industry sector [8]. Under the Paris Agreement (PA) 2015, the global response to address climate change has been strengthened and scenarios set for maintaining the increase of global surface temperature to not greater than 2 °C and even more ambitious target to 1.5 °C.

Environment health and safety (EHS) in correlation with ESG has broadened the scope with extensive focus on environment indicators- energy, emission water and waste, health and safety indicators under social pillar provide goods and services in a safe and sustainable manner, with policies covering under governance. Multiple frameworks and voluntary standards have been followed by companies to report on Environment Social and Governance (ESG) performance. Even companies sometimes brainstorm to know which one to follow for effective reporting. As the time has come when financial institutions are looking at ESG profile of companies while making investment decisions. It has been

observed in various studies that ESG factors cause financial impacts if not managed well by the company and have direct hit on accounts books. Climate change has emerged as a big risk for business and has been listed as top item in the risk register of various companies directly and indirectly. With the given scenario of today's business world, companies have started disclosing the businesses conduct which includes integrity and transparency in provide goods and services in a safe and sustainable manner and giving due consideration to stakeholders' expectations [1,5].

Among multiple disclosure frameworks and standards, the Global Reporting Initiative (GRI) Standards are being chiefly followed by the companies along with alignment to UN Sustainable Development Goals (SDGs), UN Global Compact (UNGC), the Task Force on Climate-Related Financial Reporting (TCFD) and the Sustainability Accounting Standards Board (SASB). Companies have started moving towards Climate change strategies like Carbon disclosure project (CDP), Science based targets (SBTi) and Internal Carbon pricing to set emission reduction targets and putting price on internal carbons. The company's sustainability and ESG reporting profile and year on year performance has been gained attention by investors and stakeholders have created a new emergent market which is made up with integration of financial and ESG factors.

2. Global ESG reporting trend towards climate change and sustainability

Globally current trends in climate change risk reporting are requiring ESG consideration. Investors, stakeholders and regulators are looking for sustainability disclosure with commitment on climate risk management. It is required as physical risks are transformed to economic risk in times so climate risk impacts in terms of extreme weather events disrupting supply chains supporting infrastructure and manufacturing, resource scarcity and range of diseases. It also includes the regulatory disclosures on penalties due to non-compliance with environmental laws or any legal proceedings which may be a significant risk factors in future prospects which likely to have financial impact on a company. Policy makers are promoting CO₂ emissions reduction efforts by formulating policies like carbon pricing or carbon trading [7,8]. Various investment agencies are watchfully keeping eye and monitoring the emerging sustainability focus area as ESG disclosures to reduce risk and avoid hidden consequences while making investment opportunities. Investor institution believes that the emerging climate change risk discourse represents a material risk and been marked as most important sustainability issue which helps them manage portfolio investment [10].

Globally number of business organizations do not incorporate sustainability initiatives in their corporate strategy and financial decision making. This has become a key to ESG disclosures to demonstrate the business strategy and financial disclosure inline with climate and other risks identified. Here comes a major role of Enterprise Risk Management (ERM) while making sustainability disclosures [9].

TCFD have been categorized the climate-related risks into two factors, one risk related to the transition to a lower-carbon economy and other risks related to the physical impacts of climate change which includes stringent carbon policy, legal obligations and market shift. These risks have direct and indirect financial and social impacts like issues with water availability, food security and extreme temperature changes involving impacts on sourcing, operations, supply chain, logistics, and employee health and safety. Under (CDP) the main focus has given on identification of risks over climate change issues including emissions, water and forest [11,12].

While making disclosures on sustainability and climate change by cement industries require to address the said ESG indicators along with future plan of implementation of emerging technological options to avoid process CO₂ emissions and to achieve targets set by the Paris Agreement [13].

3. ESG reporting by Indian cement industries with respect to climate change and sustainability

India is the second largest cement producer in the world after China with almost installed cement manufacturing capacity of 410 million tonnes per annum. In India majority of cement companies are certified on International Management Systems like ISO 14001, ISO 14064, OHSAS18001/ ISO 45001, ISO 50001 etc. [1]. Cement companies have taken energy conservation and emission reductions on top priority and working on projects like waste heat recovery, alternate fuel and raw materials, GHG Footprinting etc. Under ESG below are the focus areas [4]. It is important to note that Indian cement industry contributions in transformational changes in energy, systems, emission reductions, shifting toward cleaner fuels, resource efficient technologies, aggressive promotion of renewables and CO₂ capture, storage and use are being looked upon to analyze the opportunities and challenges to meet the ambitious target of limiting the global warming to 2 °C and below [14].

Environment - Focus areas including specific energy consumption reduction over years, increasing share of renewable energy in total energy consumption, water footprinting and water conservation initiatives undertaken along with making plants zero liquid discharge, waste management including solid waste and plastic waste management with Extended Producer Responsibility, Green House Gases (GHG) foot-printing and monitoring. Environment related Sustainability targets disclosures, listing in sustainability indices, Emission reduction target disclosure basis science-based target initiative (SBTi), implementation of internal carbon pricing [6].

Social - Covering the initiatives undertaken in the area of community healthcare, education, drinking water and sanitization, infrastructure and agricultural assistance and skill development etc. Focus on employee/ workers health and safety, hygiene practices, training and development programs etc.

Governance - Environment health safety and sustainability policies, climate change and sustainability governance, Stakeholder engagement

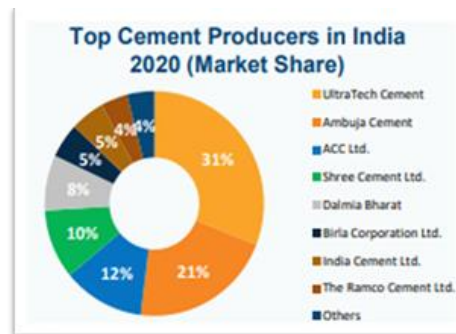
The sample companies are looked for the purpose of research which forms more than 50% of production of total installed capacity in India. The sample companies' sustainability reporting and various disclosures have been studied to identify the coverage of ESG indicators in sustainability reporting [2,3].

Below table shows the ESG indicators covered under various factors of sustainability development. These ESG indicators were studied for the sample companies and the assessment done on their reporting status in public domain. The effectiveness of the disclosure are was also checked by

assessing that the indicators have been disclosed in measurable units and shows improvements over years.

Table-1- Trending Global ESG (Environment Social and Governance) and Climate change Strategy Indicators

Environment	Social and Governance
ISO 14001 management system certification	OHSAS 18001 management system Certificate
Fresh water consumption pattern	Health and wellness programs in 1 year
Ground water resource extraction pattern	Health and safety programs- Hygiene, ergonomics
Water Metering and management	Frequency Rate (FR) – Number of recordable injury per 1 million man-hours worked/year
Waste Water Treatment and Recycle (recycle percentage of fresh water consumption)	Loss time injury
Water Quality of effluent water	Program on Behaviour based safety
Zero discharge plants	EHS Trainings
Rainwater Harvesting	Safe work place initiatives
Ground water recharge	EHS committee and meetings
ISO 50001 management system certification	Projects on providing basic amenities
Energy consumption pattern- Direct Energy (fuel)	Projects on promoting sustainable agriculture/forestry
Energy consumption pattern- Indirect Energy (grid electricity)	Access to improved drinking water source
Energy consumption pattern for supply chain/ employee commute not under direct control of company	Projects on watershed protection
Company conducts Environment and Energy Audit	Projects on Biodiversity
Energy Efficiency Initiatives	Projects to improve forest cover
Alternate fuels Usage as a percentage of total energy	Community wellness program
Renewable energy usage	stakeholder engagement
PAT implementation and status	Climate change Action Plan
Renewable purchase obligation status	SBTi
Use of recycled materials	ICP
Sustainable procurement Initiatives	SASB
Reporting Emissions in CDP/ as per ISO 14064	TCFD
Direct Emission Pattern	UNGC
Indirect emission pattern	SDG
Emission pattern for supply-chain/ employee commute not under direct control of company	Climate Change Targets
Commitment to reduce GHG emissions with timelines.	1.5 degree C or 2 degree C scenario Analysis
AAQ -PM, Sox, Nox	Sustainability Indices ranking
Availability of latest technologies	Enterprise risk management and climate change
emission offset programs	



Source: <https://www.ibef.org/>

It has been observed that under environment pillar 62% of indicators have been covered by all the sample companies which comprises of certification to international standard for environment, energy consumption, water consumption, water recycling, zero liquid discharge, ground water recharge, emissions for scope-1 and scope 2 categories, energy efficiency initiatives, renewable energy sources, use of recycled material, Sox Nox emissions and latest technological upgradation and innovations. These indicators have been quantified and detailing has been provided to showcase the year-on-year performance improvement and reasoning for setbacks. Whereas there are some gaps identified in disclosures on Carbon offset program, energy certifications, PAT, RPO status and sustainable sourcing initiatives, only few of them has demonstrated the actions taken to achieve the targets given under climate change scenario.

Under Social and governance pillar, it has been found that 75% of indicators have been covered by all the sample companies and they have established the environment health and safety policies and have addressed sustainability under their governance structure and are also been certified to International standard for health and safety. These all-sample companies are carrying out stakeholder engagement and establishing matrix to identify the material sustainability topics for the organization. Employee safety has been marked as key indicator where all the sample companies have reported the health and hygiene initiatives, committee meetings and trainings. Though only few companies have clearly demonstrated the sustainability governance structure. All the sample companies have well established community development programs in place to ensure environment, health and hygiene of nearby communities which covers the provision of safe drinking water, assistance in agriculture programs, tree plantation and afforestation, health check-up camps and providing basic amenities to local people.

Under the emerging climate action plan approx. 30% of the indicators have been disclosed by the sample companies. Rest 70% indicators have been touched upon partially but no measurable results have been demonstrated. It has been found that 80% sample companies have aligned their ESG disclosures with UNGC 10 principals and relevant SDGs.

4. Discussion

Effectiveness of ESG coverage in Sustainability Reporting and gaps observed

Top 5 cement industries in India were taken as sample and their ESG reporting has been studied for this research purpose. These cement industries represent more than 50% market share and their ESG reporting trend has been analyzed for the selected ESG indicators which are commonly required by various sustainability standards and framework. These indicators are listed in the table 1. Apart from ESG indicators, climate change strategy action plan has also been assessed for few emerging and well-established indices and commitments. All the public disclosures made by the sample companies in various platforms and formats have been studied for this research purpose and the detailed analysis has been done to understand the coverage of ESG indicators to report on sustainability in line with climate change scenario.

80% of the companies have disclosed their environment long term and short-term targets. The target setting has enabled them in getting recognized at world's leading indices like DJSI. 30% of the sample companies have well described the climate risk placement in enterprise risk map and financial planning to mitigate the potential climate risks. Though there are still some gaps in adopting science-based target initiative. Only one of the sample company has set the carbon price for their tCO₂ emission, while other companies are yet to make disclosures on the Internal Carbon pricing and TCFD along with action plan for 1.5 degree C or 2 degree C scenarios.

ESG Indicators Coverage by Indian Cement Companies while Sustainability Reporting

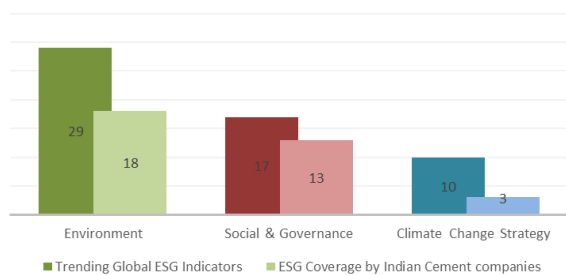


Figure 2: ESG Indicator Coverage by Indian Cement Companies

5. Conclusion

The study has shown the results that the sustainability reporting has been taken a momentum by cement industries in India. Major cement players are reporting on ESG indicators in some or other forms. In last five years there has been improved seen in sustainability reporting and coverage of ESG indicators. Even earlier few of the companies were just publishing the social responsibility reports and environment performances for compliance requirements. But over years the reporting spectrum has been broaden and emerging indicators have been included in the reporting. GRI standard has been adopted by all the cement companies in India which is also aligned with UNGC and SDGs. Though there are some areas which need to be focused while making ESG disclosures. Carbon Emission trends are available but carbon neutrality and offsetting has not been gained the same momentum. Plastic usage and recycle as required by extended producers' responsibility have not yet clearly defined by majority of the companies. Science based target setting and internal carbon pricing has been found to be lacking by majority of the companies.

Enterprise risk management integration with climate risk and interlinked financial disclosures are yet to be clearly quantified by the companies and to be incorporated in the ESG disclosures. The sample represents approx. fifty percent of the cement production which gives inferences that approximately sixty percent of companies still have

opportunity and scope to establish more strategic and quantifiable disclosures on ESG indicators.

References:

- [1] <http://www.ensearch.org/wp-content/uploads/2018/02/SATHISs-REPORT.pdf>
- [2] Sustainable accounting reporting practices of Indian cement industry: An exploratory study Shagufta Khana , Vineet Chouhanb*, Bibhas Chandrac and Shubham Goswamib
- [3] <https://www.wbcsd.org/contentwbc/download/7018/116131/1>
- [4] https://www.sesgovernance.com/pdf/home-reports/1594458276_ESG-Analysis-on-50-Listed-Companies-in-India_2020.pdf
- [5] Sharma, P., Panday, P. & Dangwal, R.C. Determinants of environmental, social and corporate governance (ESG) disclosure: a study of Indian companies. *Int J Discl Gov* 17, 208–217
- [6] L. Poudyal and K. Adhikari, Environmental sustainability in cement industry: An integrated approach for green and economical cement production. *Resources, Environment and Sustainability* (2021)
- [7] <https://www.iea.org/reports/cement>
- [8] <https://www.bdlaw.com/publications/climate-change-risk-and-sustainability-disclosures-a-new-enforcement-regime/>
- [9] Muhammad Kashif Shad, Fong-Woon Lai, Chuah Lai Fatt, Jiří Jaromír Klemeš, Awais Bokhari, Integrating sustainability reporting into enterprise risk management and its relationship with business performance: A conceptual framework, *Journal of Cleaner Production*, Volume 208, 2019, Pages 415-425
- [10] Atkins, Jill & Solomon, Aris & Norton, Simon & Joseph, Nathan. (2011). Private climate change reporting: An emerging discourse of risk and opportunity?. *Accounting, Auditing & Accountability Journal*. 24. 1119-1148. 10.1108/09513571111184788.
- [11] Truant, Elisa & Corazza, Laura & Scagnelli, Simone. (2017). Sustainability and Risk Disclosure: An Exploratory Study on Sustainability Reports. *Sustainability* (Switzerland). 9. 10.3390/su9040636.
- [12] Puttipong Chunark, Tatsuya Hanaoka, Bundit Limmeechokchai, Shared socioeconomic pathways and long-term GHG mitigation towards 2050 in Thailand cement industry, *Cleaner and Responsible Consumption*, Volume 2, 2021
- [13] Javier Farfan, Mahdi Fasihi, Christian Breyer, Trends in the global cement industry and opportunities for long-term sustainable CCU potential for Power-to-X, *Journal of Cleaner Production*, Volume 217, 2019, Pages 821-835
- [14] Saritha S. Vishwanathan, Amit Garg, Vineet Tiwari & P. R. Shukla (2018) India in 2 °C and well below 2 °C worlds: Opportunities and challenges, *Carbon Management*, 9:5, 459-479, DOI
- [15] Latest Sustainability Reports of top 5 cement companies in India were studied- ACC cement, Ambuja cement, Ultratech cement, JK cement and Shree Cement.

Author Profile



Author Shradha Mishra did her M.Sc in Environmental Science, M.Tech in Health Safety and Environment and Ph.D in Health Safety and Environment. She specializes in the area of in developing, designing and implementing Environment Health Safety Plan for various industries as per ISO 14001 & OHSAS 18001, ISO 9001, Environment and Safety Audits, Social Accountability 8000, Corporate Social Responsibility Reporting, Water Foot-printing, Green House gas Accounting, Emergency Preparedness Planning, Environment (Air, Water and Noise) Monitoring, Environment Impact assessment, Waste Management and Disposal, 5S Implementation. Have Assurance Audit Experience in Corporate sustainability Reporting, Positive Water Balance. Shradha started her carrier as EHS engineer with Gammon India Ltd. She has also worked with Deloitte as a consultant for Climate change and sustainability services. She is currently working as a EHS and sustainability consultant with IT company. Shradha was also associated with Indian Institute of Toxicology research for a project on water quality assessment.



Guide Dr. Nihal Anwar Siddiqui did his post graduation in Environmental Science and Doctorate in Environmental Biology. In addition he is also having Diploma in Industrial safety & Post Graduate Diploma in Environmental Impact Assessment. The topic of his research was on Environmental Impact Assessment. Dr Siddiqui specializes in the area of Environmental Pollution, Env.Monitoring and control techniques. Dr. Siddiqui started his carrier as Assistant Professor in Institute of Environment & Management and because of his desire to work in the real field he joined as Environmental Engineer, Paryacon Engineers a leading consultancy in the field of Env. Pollution and control.He was part of number of EIA projects, Environmental Audit and Env. Monitoring. Dr. Siddiqui got chance to work with

Environmental Engineering Division of Central Pulp & Paper Research Institute as Scientist. During his stay with Environmental Eng. Div., Dr. Siddiqui work on 8 major R & D projects for various agencies like Central Pollution Control Board, New Delhi, MOEF, PWC and various projects sponsored by RAC. Dr. Siddiqui did some of the pioneer work in the area of odor Monitoring and providing control technology along with Finland Scientist. Dr. Siddiqui was also associated with Health, Safety & Environment dept of ICEM college, Muscat , Oman which is affiliated to University of Central Lancashire, UK. He has more than 90Research papers to his credit has participated in several National and Int. conferences. Dr. Siddiqui has authored 2 books vizNatural Resources & Environmental Management & Handbook on Fire & safety . Dr. Siddiqui has guided more than 50 M.Techand9 PhD thesis.