

ENVIRONMENTAL REPORTING - AN EVALUATION OF THE SUSTAINABILITY PERFORMANCE OF BHEL

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Abstract *In the absence of mandatory reporting requirements in India, few corporate bodies make environmental disclosure purely on voluntary basis in the form of sustainability reporting. Thus, the purpose of the present paper is to assess whether Bharat Heavy Electricals Limited furnishes environmental information in accordance with the Global Reporting Initiative (GRI) guidelines and also to measure the performance of the company on the basis of the selected environmental performance indicators. The data for the present study has been collected from the Sustainability Report of the company and covers a time span of five years starting from 2012-13. The key findings of the study indicate that the company provides adequate information on selected environmental performance indicators in accordance to the GRI guidelines and also reported that the company has been able to reduce the consumption of resources like coal and diesel on year-to-year basis. It is recommended that the company should make disclosure on materials and natural resources used by manufacturing units in terms of volume and weight.*

Keywords: *Environmental Reporting, Global Reporting Initiative, Environmental Performance Indicators*

INTRODUCTION

Environmental degradation is one of the major challenges that the earth is facing today. Environmental issues like global warming, deforestation, pollution of air, land and water are on the rise due to rapid industrialisation; with that, the focus of the international community has also shifted in conserving and protecting the environment and its resources (Punjabi, 2013). The issue of environmental degradation has been discussed in international forums since the 1960s. The summit held in 1972 also known as the Stockholm Conference (United Nations, 1972) is considered as the pivotal event. It is after 1972 that the governments of various countries have given their attention in understanding the environmental problems and nations have made an attempt to develop Integrated System of Environmental Economic Accounting or SEEA. Many countries attempted to include data on environmental accounting with national income to estimate economic development but all such attempts did not address the microeconomic aspect of data on environmental accounting. Since corporate bodies have made significant contribution in economic growth, they are also the highest contributors in environmental degradation (Malik & Mittal, 2015).

In India, there are various legislations passed over the years for the protection of environment like Water (Protection and Control of Pollution) Act, 1978, The Air (Prevention and Control of Pollution) Act, 1981, The Forest (Conservation)

Act, 1980 and the Environment (Protection) Act, 1986. The Companies Act, 2013, has included provisions relating to CSR practice and reporting, which specifies that companies satisfying specific conditions must spend a certain percentage of the net profit in CSR activities and also need to report it (Basak, 2016), but no mandatory quantitative disclosure of environmental accounting data is imposed on corporate bodies (Mishra 2015). Further, listing in the recognised stock exchanges also does not require any disclosure of environmental information. Therefore, in the absence of mandatory reporting requirements, few corporate bodies make environmental disclosure purely on voluntary basis in the form of sustainability reporting. One of the possible reasons that may be linked to the non-disclosure of quantitative environmental information is lack of studies that could establish a causal relationship between environmental reporting and firm's financial performance. Study by Mittal (2019) has shown that disclosure policy on corporate governance has a significant impact on ROE and ROCE of the firms. Similar studies can be conducted by researchers to establish a relationship between disclosure on environmental performance of firms and their financial performance, which may be a motivating factor for the firms to improve the quality of their reporting on environmental performance (Alomari & Ibraheem, 2019). It is also to be noted that Global Reporting Initiative (GRI) provides guidelines that can be followed by companies globally for reporting their sustainability performance.

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What is Sustainability Reporting?

Sustainability Reporting may be defined as a report on the economic, environmental and social impacts that are caused by the activities of an organisation or a company. It helps an organisation to measure and communicate their sustainability performance to both internal and external stakeholders and also supports in setting standards. Thus, a sustainability report should be able to provide a reasonable and balanced presentation of the sustainability performance of the organisation including both positive and negative contributions (GRI 2011).

The Global Reporting Initiative (GRI 2013) emphasised on the importance of sustainability reporting by stating that it is a powerful tool, which helps in assessing the current health and the future prospects of an organisation. It has also entreated the governments and stock exchanges to insist on sustainability reporting.

REVIEW OF LITERATURE

Over the years, a number of notable studies have been conducted in the field of environmental accounting and reporting. This section will discuss the important research studies on the relevant topic. The studies are divided into two parts: a) Studies outside India in connection with Environmental Accounting and Sustainability Reporting and b) Studies within India in connection with Environmental Accounting and Sustainability Reporting.

Studies Outside India in Connection with Environmental Accounting and Sustainability Reporting

One of the earliest works on environmental accounting reporting is of Wiseman (1982), who studied the annual report of 26 companies and developed an index to evaluate the content of environmental disclosures. The purpose of the index was to provide a numerical basis for the recorded data. Foreign authors like Yakhou and Dorweila (2004) and Latifian, Jasemi and Bandari (2014) laid emphasis on environmental accounting and sustainability reporting as an essential component of business strategy.

Guthrie and Parker (1990) analysed the annual reports of 50 listed companies of the UK, the US and Australia and concluded that the degree of environmental disclosures by companies significantly varies from country to country. Deegan and Rankin (1997) concluded that although environmental information is material but the majority of the user rank environmental information behind financial information. Ahmad (2012) studied the annual reports of 40

Bangladeshi companies and concluded that environmental and reporting practices in the selected companies are not satisfactory and only positive qualitative disclosures are made. The study conducted by Bhattacharyya (2014) had two-fold objectives, i.e., firstly, to assess the extent of social and environmental reporting in Australia and secondly to analyse the association between the firms' characteristics and level of social and environmental reporting. The sample consists of 47 small and large companies selected from five industries. Evidence indicated that most of the companies do report some social and environmental information but the quality of reporting varied and companies with a negative return on total assets reported significantly higher social information. Chindavijak, Phusawat and Kess (2015) in their research on 41 petrochemical and energy companies of Thailand disclosed that the companies do not furnish information on all the environmental indicators in their sustainability reports and thus concluded that the companies are far behind to implement, measure, record and report the sustainability indicators setup by the GRI.

Studies within India in Connection with Environmental Accounting and Sustainability Reporting

Minimol and Makesh (2014) noted that voluntary reporting by Indian companies includes parameters such as environmental policy, energy consumption, waste management, health safety and environment, and environmental initiatives. In a study of Indian cement sector, Anuradha (2014) concluded that Indian cement companies have performed well in improving air quality. Gupta (2013) in her study found that BCML does not prepare separate account for environmental cost but shows it in the overheads. She also reported that the company submits environmental statements under the Environmental Protection Act, 1986. Mishra (2015) studied the environmental disclosure practices of ONGC and reported that the company makes positive disclosures on environmental performance indicators like water pollution, greenhouse gas emissions and energy conservation and concluded that there is lack of quantitative information. The study conducted by Kumar and Devi (n.d.) on the sustainability reporting practices in India reported that cement companies are the most complaint with the GRI sustainability reporting framework, whereas Banking and Finance and Healthcare and Pharmaceuticals sector companies are the least complaint. Daizy and Das (2015) incited in their research that in terms of sustainability reporting practices Indian public sector mining companies are better compared to the Indian private sector mining companies. Malik and Mittal (2015) in their study explore the concept of green accounting and its reporting practices in India. They found that green accounting is in developmental

stage and suggested that corporate bodies should prepare a firm environmental policy and include adequate details of environmental aspects in the annual reports. A joint study by (Global Reporting Initiative, Indian Institute of Management Bangalore, TATA Consultancy Service, 2016) indicates that in the recent years, India has shown a significant growth in the number of companies that are engaged in sustainability reporting. The study also indicated that the GRI reporting guidelines are the most popular among voluntary reporting guidelines.

From the above survey of literature, it can be concluded that most of the studies in India are directed towards assessing the extent of environmental disclosure made by the companies in their sustainability report. However, only a few research papers are available for evaluating the performance of the economic, social and environmental indicators disclosed in the sustainability report. Hence, an attempt has been made by the researcher to examine how far BHEL has been able to follow the GRI guidelines while reporting on environmental indicators and also to assess the performance of the selected company in terms of environmental performance indicators during a period of five years starting from 2012-13.

The remaining paper has been classified as follows:

Research methodology will discuss the various methods used during the study which is followed by Results and Discussion and the paper will conclude with the conclusion.

RESEARCH METHODOLOGY

Data Source

The present study is based on secondary data. For the data, the researcher has primarily relied on data published by BHEL in Sustainability Report and Annual Report. The researcher has also used industrial data published by various agencies to give a conclusive picture.

Research Design

The present study is exploratory in nature and focussed on Sustainability Reporting of the company. The GRI furnishes guidelines on social, economic and environmental parameters that the companies may comply with in their Sustainability Reports. The researcher focussed on five environmental performance indicators namely a) energy, b) water, c) emission, effluents and waste, d) environmental protection expenditure, and e) materials and natural resources used.

BHEL with a government stake of 63.06% is one of the biggest engineering and manufacturing company in India (Poongavanam & Babu, 2012). In 2016 and 2017, the Tiruchi unit of BHEL won the Greentech Environment

Award in the engineering sector for their contribution in environment management. The selection of the company for the study is justified due to its size and its environmental protection initiatives in the recent time. The period for which the Sustainability Reports are analysed is five years starting from 2012-13.

For the fulfilment of the first objective, the selected environmental parameters disclosed in the Sustainability Report of BHEL are compared with the GRI guidelines to see the extent of compliance. While for the fulfilment of second objective, the data on selected environmental performance indicators is compiled in a tabular format and their performance is analysed with the help of figures and Environmental Protection Expenditure-Total Turnover ratio.

RESULTS AND FINDINGS

The GRI issues guidelines on environmental performance indicators which the company can follow in their Sustainability Reporting. Table 1 shows the selected GRI parameters and their compliance by BHEL.

Table 1: GRI Guidelines Relating to Environmental Reporting and Its Compliance

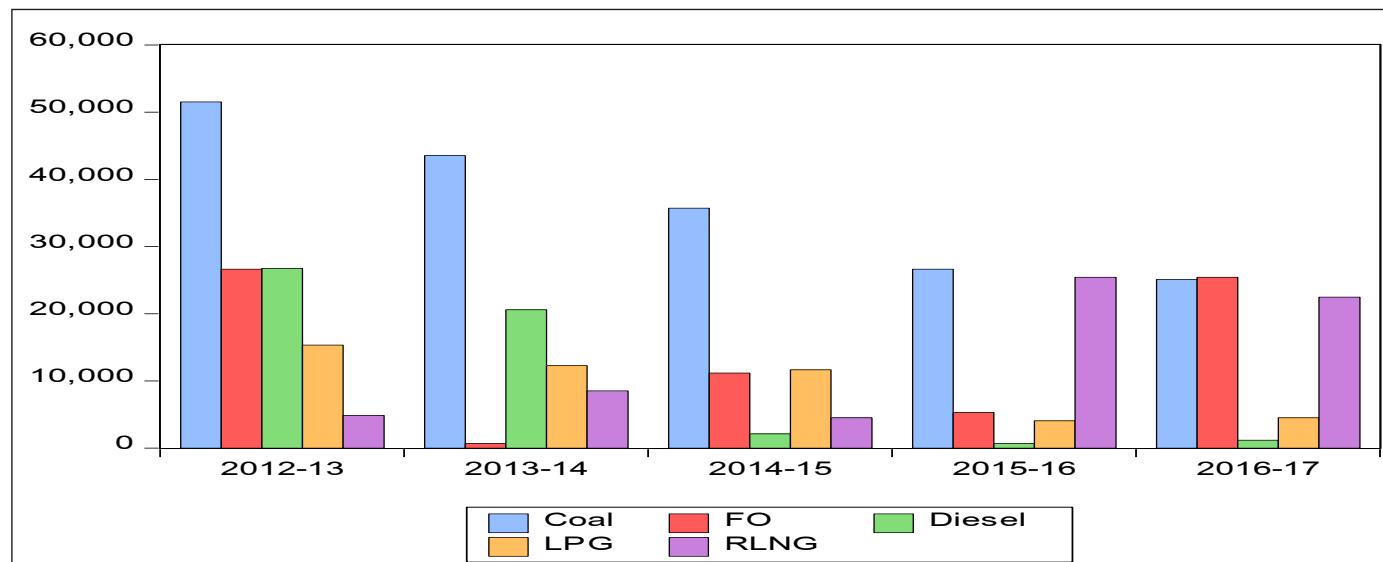
Aspects	Parameters	Compliance
Energy	Direct energy consumption by primary energy source.	Yes
	Indirect energy consumption by primary source.	Yes
Water	Total water withdrawal by source.	Yes
	Water sources significantly affected by withdrawal of water.	Yes
Emission, Effluents and Waste	Total direct and indirect greenhouse gas emission by weight.	Yes
	Other relevant indirect greenhouse gas emission by weight.	No
	Emission of Ozone depleting substances by weight.	Yes
	Nox, Sox and other significant air emission by type and weight.	No
	Total water discharge by quality and destinations.	Yes
	Total weight of waste by type and disposal method.	No
	Total number and volume of significant spills.	Yes
Overall	Total Environmental protection expenditure and investments by type.	Yes
Materials	Materials used by weight and volume.	No
	Percentage of materials used that are recycled input materials.	No

Source: GRI Sustainability Reporting Guidelines and Sustainability Report of BHEL

A detailed analysis of the sustainability reports of BHEL indicates that the company disclosed core information on certain aspect such as energy, water and environmental

protection expenditure in accordance to the GRI Guidelines but the reporting falls short on emission, effluents and waste and materials.

(in Tera joules)



Source: Company’s Sustainability Report of BHEL

Fig 1: Fuels in the Energy-Mix

From Fig 1, it is clear that in 2012-13 and 2013-14 the consumption of coal and diesel was higher than any other fuel in the energy-mix; but in 2014-15, the consumption of diesel drastically reduced and the consumption of coal also showed a decline. In 2015-16 and 2016-17, the consumption of coal and diesel witnessed a further declined as the company was shifting its dependency on much cleaner substitute like Regasified Liquefied Natural Gas (RLNG). It can also be

seen in the Fig. 1 that the consumption of LPG also had a declining trend during the period of the study. From the sustainability report of the company, it was known that five of the units namely HEEP Haridwar, CFFP Haridwar, CSU & FP Jagdishpur, IP Jagdishpur and EPD Bengaluru are using RLNG as a primary fuel. The company have also installed a number of solar power plants which have reduced the consumption of energy.

Table 2: List of Solar System Installation in Different Units of BHEL

Unit	Type	Capacity
R&D Hyderabad	Ground based SPV System	250kWp
HPEP Hyderabad	Mega Watt Scale SPV System	1.5MWp
HEP Bhopal	Ground based SPV System	250kWp
HPBP & SSTP Trichy	Rooftop Solar Plant	250kWp+50kWp+50kWp
BAP Ranipet	Grid Interaction SPV Plant of Mega Watt Scale	5MWp
HEEP Haridwar	Rooftop Solar System	25kWp

Source: Company’s Sustainability Report of BHEL

Also apart from the installation of the solar systems, BHEL has also installed an 8kW_p wind solar hybrid system at EDN

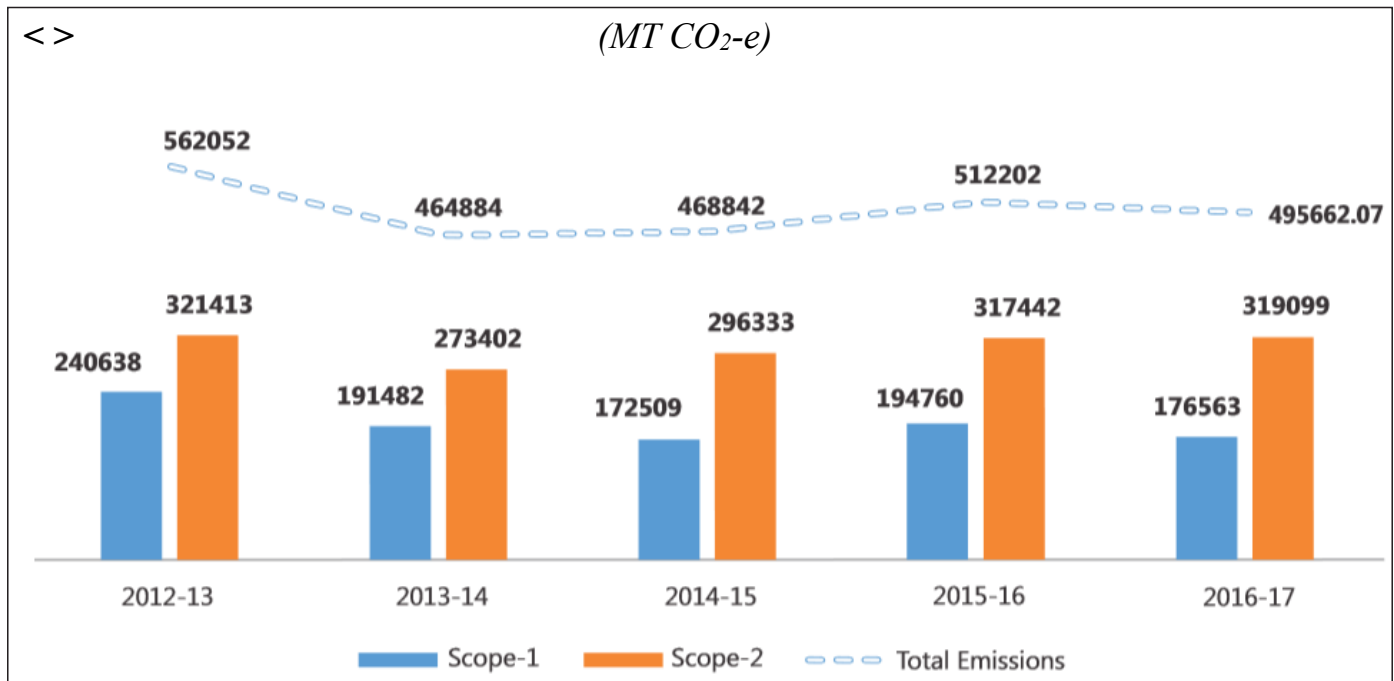
Bangalore, which will further reduce the consumption of non-renewal energy.

Table 3: Total Water Intake and Recycled During the Past 5 Years

Period	Water Usage (MCUM)	Water Recycled (MCUM)	Water Recycled (%)
2012-13	15.34	4.54	29.61
2013-14	15.58	6.47	41.52
2014-15	16.70	6.82	40.84
2015-16	15.52	5.68	36.60
2016-17	15.68	4.90	31.24

Source: Company’s Sustainability Report of BHEL

The Table 3 shows the amount of water used by different units of BHEL and the amount of water recycled. It is reported that ground water is the major source of water in all the units of BHEL, which is followed by surface water and municipal supply. During the period of the study, the average water usage and water recycled in different units of BHEL is 15.76 and 5.68 million cubic metres, respectively. It is also reported that the water recycled is used for horticulture. Form the analysis of the data on water usage and water recycle, it is clear that the company is able to recycle and reuse a significant amount of water during the period of the study which indicates that the company is not a water intensive industry.



Source: Company’s Sustainability Report of BHEL

Fig. 2: Scope 1 and Scope 2 Emissions

Scope 1 Emissions are those which arise directly from the sources that are owned and controlled by the company, whereas Scope 2 Emissions are those which are generated by purchased electricity consumed by the company. From the Fig. 2, it is apparent that Scope 1 emissions have seen a significant decline from 2012-13 to 2016-17 due to decrease in the consumption of diesel, coal and LPG. On the other hand, Scope 2 emissions have also seen a slight

dip particularly due to the installation of solar plants in various manufacturing units. Although, the data on Scope 3 emissions is not captured by the organisation, decline in Scope 3 emissions is obvious due to increase in the use of RLNG, which is supplied by pipelines in manufacturing units and does not require conventional transportation. Over all, the total emissions have come down by 11.8% during the period of the study.

Table 4: Environmental Protection Expenditure and Total Turnover

Period	2012-13	2013-14	2014-15	2015-16	2016-17
Environmental Protection Expenditure (in lakhs)	852	920	1252	1006	967
Total Turnover (in crores)	50156	40338	30947	26050	28840
Environmental Protection Expenditure/Total Turnover	0.017%	0.029%	0.040%	0.038%	0.034%

Source: Company's Sustainability Report and Annual Report

Environmental protection expenditure includes expenditure on monitoring of stack emissions and ambient air quality, expenses on obtaining authorisation under various environmental legislation, expenses on installation of new environment friendly technologies and expenses on projects taken for environment improvement. The ratio between

environmental protection expenditure and total turnover shows fluctuations over the period of the study. The Table 4 indicates that a total amount of Rs. 4997 Lakh has been spent in the last five years on environment protection activities from the revenue budget.

Table 5: Materials and Natural Resources Used

Group of Materials	2012-13	2013-14	2014-15	2015-16	2016-17
Ferrous Materials	4517.67	2522.14	2415.5	2311.13	20121.85
Non-Ferrous Materials	597.11	425.72	381.37	296.6	277.64
Insulating Materials	305.72	277.08	219.83	159.08	142.84
Others	4942.52	4859.04	4567.71	4654.65	4647.29

Source: Company's Sustainability Report

Ferrous materials include iron in their composition and non-ferrous materials include aluminium and other elements. The inspection of the Table 5 shows a significant improvement in material consumption during 2016-17 compared to 2015-16. The analysis of the data indicates that there is a decreasing trend in the consumption of materials and natural resources. This decreasing trend further indicates better inventory management and cost efficiency drive undertaken by the company.

CONCLUSION

A proper investigation of the sustainability reports of the company concludes that disclosures on selected environmental performance indicators are in accordance with the GRI guidelines. It can be said that BHEL clearly understand its responsibilities towards the efficient use of energy resources as it is apparent from their efforts which resulted in the reduction of the consumption of coal and diesel in their energy-mix. The company has also installed a number of solar plants which played a key role in the further reduction of consumption of non-renewal resources. BHEL has also developed an efficient water recycling technology which enabled its units to recycle 36.04% of the water usage during the period of the study. Scope 1 and Scope 2 Emissions and usage of materials and natural resources have also seen a declining trend during the study period. Environmental Protection Expenditure has seen an increase during the period of the study which is a

strong indication of the efforts of the company towards the environmental management.

Overall, it can be concluded that the company made genuine efforts to reduce its negative impact on the environment through its waste management system, green initiatives and effective inventory management. However, it is recommended that the company must make efforts to further reduce its dependency on non-renewal resources. It is also recommended that the company should make disclosure on materials and natural resources used by manufacturing units in terms of volume and weight.

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