

Environmental Accounting & Reporting in India (A comparative study of Bharat Petroleum Company Limited & Oil & Natural Gas Company Limited)

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In the past decade, there has been a huge demand on financial and economic data about environment and natural resources. However there was an inconsistency that civilizing environmental performance is often advocated as remedying defects in a company's assessment of their own self-interest. Environmental Accounting plays a significant role in providing the needed data on surroundings to different users at all levels for various reasons. There is a rising interest in India about subjects such as environmental development, corporate social responsibility, and corporate ecological performance. They are an after-effect of the worldwide calls about the accountability of corporations in the direction of natural environment. Therefore, Greek corporations have initiated to implementing practices for better ecological performance and reporting them to the public. The current research intended to examine India corporations' disclosures about their performance towards the safety of natural environment. In current years, environmental pollution becomes so acute and the stakeholders' awareness to the issue becomes so serious that environmental accounting has become a solid branch of accounting. Still, concentration towards the style and acknowledgment of environmental accounting is not a generalized one. Legal authorities, standard setting bodies and other regulators cannot come to a consensus regarding the conceptual framework of environmental accounting and its disclosure. Thus, such revelation is not obligatory rather voluntary that has no specific style or format. With the passage of time, more rule are coming in modified format that may lead us to reach a common format for recognizing environment related data and revelation thereof through financial statements. Still, such disclosure is guided by the social responsibility and commitment on the part of the entities that work as strong agents for polluting the environment. In this paper, the theoretical foundation of environmental accounting and reporting is discussed with special reference to industry like ONGC, BPCL. After the proper research the researcher has felt that the scenario of Environmental accounting practices has not been transformed. Their Environmental Policy shows that they are giving fully efforts for the better protection of environment but on the other hand the research findings doesn't shows the ecological cost, liability, and ecological expenditure.

Keywords: Environmental Accounting and Reporting, ONGC, BPCL

Introduction

Rising pressures on the environment and increasing environmental consciousness have generated the need to account for the various interactions between all sectors of the economy and the environment. As we all know that Conventional national accounts concentrate on the measurement of economic performance and growth as reflected in market activity. For an extreme complete assessment of the sustainability of growth and expansion, the scope and coverage of economic accounting need to be broadened to include the use of non-marketed natural assets and losses in income-generation resulting from the depletion and degradation of natural capital. However, Conventional accounts do not concern the commonly used depreciation modification for human-made assets to ordinary assets. Since sustainable development includes economic and

environmental dimensions, it is necessary that national accounts reproduce the use of natural assets in addition to produced capital consumption. Environmental issues have unfavourably affected most of the business transactions and promoted companies to recognize ecological and social sustainability practices as part of their broader goals. Such initiatives need to be recognized to control the environmental and sustainability gap and the ever growing concern for worldwide warming and environmental degradation calls for combined effort of corporations, government and other stakeholders in tackling the problem. The execution of ecological disclosure practice can help companies and other stakeholders to reduce the cost and reduce pollution correspondingly. The execution of environmental revelation practice can help companies and other stakeholders to reduce cost and decrease pollution respectively. Environmental

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accounting, as a subject has gained a significance across the global due to the improved concern for worldwide warming and environmental degradation. The ecological threat can be mitigated by the combined effort of companies, government, and other stakeholders of the society. A lot of companies in India willingly started reporting environment related information in the financial statements to show their support toward environmental issues. According to the "United States Environmental Protection Agency", an important function of environmental accounting is to bring environmental costs to the attention of corporate stakeholders who may be able and motivated to identify ways of reducing or avoiding those costs, while at the same time, improving the environmental quality. The implementation of environmental accounting can help achieve the objective of corporations and other stakeholders in reducing the costs and decreasing the pollution respectively. However, environment related the managers who are familiar with diverse perspectives of environmental accounting could only execute disclosure. Therefore, we can say that the term environmental accounting has many meanings and uses. Environmental accounting can hold up national income accounting, financial accounting, or internal business managerial accounting. This primer focuses on the application of environmental accounting as a professional accounting tool for internal business decisions. Moreover, the term ecological cost has at least two chief dimensions: (1) it can refer solely to costs that directly impact a company's bottom line (here termed "private costs"), or (2) it also can encompass the costs to individuals, society, and the environment for which a company is not accountable (here termed "societal costs"). The discussion in this primer concentrates on private costs because that is where companies starting to implement environmental accounting typically begin.

Review of Literature

According to Wiseman (1982) in 1973 the study group of financial statements in USA advised that a basic objective of the corporate reporting should be the disclosure of the activities

Guthrie & Parker (1990) described disclosures as declarative, representing non-quantitative disclosures, and quantitative disclosures as being monetary and non-monetary.

Gibson and O'Donovan (1994) categorized information in reports as 'financial information quantified non-financial information and, descriptive, or narrative information'.

Harte and Owen (1991) analyzed the annual reports of 30 British companies to investigate the environmental reporting in their annual reports and suggested for external standards on environmental reporting

Deegan and Gordon (1996) examined the environmental disclosure practices of Australian companies revealing low voluntary environmental disclosure in Australia.

Jones et al. (1999) analyzed the websites of 275 global companies. They also conducted a survey of 100 environmental managers, seeking their views on the use of their website for environmental communication. Their findings suggested that companies were not fully utilizing the web for environmental communication

Romlah et al. (2002) studied the practices in Malaysian companies and showed that 74 out of 362 companies (20.44 percent) is environmentally sensitive industries and provide environmental information in their annual reports.

Imam (2000) analyzed annual reports of 34 companies listed with the stock exchanges of Bangladesh for the year of 1996-97 and found that only 22.5 percent of the sample companies provided environmental information in their annual report

Gray et al. (2001) examined the relation between corporate characteristics and environmental disclosures by taking a sample of 100 UK companies drawn from the Center for Social and Environmental Accounting Research (CSEAR). The authors observed that the volume of disclosure is related to the turnover, capital employed, number of employees and profit, as larger and more profitable firms have disclosed more environmental information

Bhate (2002) investigated the extent to which consumers of India are aware of environmental issues and it was found that Indians are most involved with environmental issues.

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 and concluded that the extent of environmental disclosure was very low and was scattered throughout the report without any concentration.

Rahman and Muttakin (2005) surveyed 125 manufacturing companies listed on the Chittagong Stock Exchange (CSE) as on May 7, 2005. They analyzed the annual reports of these 125 companies for the year 2003/2004. The researchers found that only 5 companies (4 percent of 125 companies) disclosed environmental information in their annual reports. The information was descriptive in nature; no quantification thereof was made. They also report that the disclosure of environmental information was done in different places of the annual report and there was no standard environmental reporting framework

Hossain (2002) Conducted a survey of annual reports of 150 non-financial companies conducted a survey of annual reports of 150 non-financial companies (listed on the Dhaka Stock Exchange) for the year of 1998-99. The study reveals that only 5 percent of the companies under study disclosed environmental information in the Directors' Report or in the Chairman's Report of their annual reports and not a single company disseminated any quantitative information as to the environmental items. An interesting finding of this study is that subsidiaries of multinational companies did not disclose

environmental information. (Listed on the Dhaka Stock Exchange) for the year of 1998-99. The study reveals that only 5 percent of the companies under study disclosed environmental information in the Directors' Report or in the Chairman's Report of their annual reports and not a single company disseminated any quantitative information as to the environmental items. An interesting finding of this study is that subsidiaries of multinational companies did not disclose environmental information.

Cunningham and Gadenne (2003) investigated whether an enhancement in environmental regulations acts as a momentum for changes in annual report disclosure behavior and concluded that environmental regulation acts as an impetus for companies to include information on certain environmental issues in the annual report.

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Rahman and Muttakin (2005) selected 196 companies in Bangladesh for their study out of which 125 are manufacturing companies and the rest 71 are service companies that gives same result.

Objectives of the study

1. To find out the Environmental Policy of sample units .
2. To compare the performance of environmental performance indicators of sample unit .
3. To analysis the extent of the disclosure of environmental information of sample units.
4. To give suggestion for the improvement of their environmental policy.

Sample Size

The sampling frame consist of two petroleum and Gas Indian Company: BPCL and ONGC

Bharat Petroleum Company Limited:

Burmah Oil Refineries Ltd. was incorporated in 1952 as a joint venture between Burmah Oil Company, UK and Shell Petroleum Company by an agreement with the Indian Government to set up a refinery at Mahul in Mumbai, which went on stream in 1957. In 1976, the Indian Government nationalized the petroleum industry, acquired 100% equity in Burmah Oil Refineries, and named it Bharat Refineries Ltd. The name was later changed to Bharat Petroleum Corporation Ltd. (BPCL) in 1977. BPCL was an integrated refining and marketing company. It markets a diverse range of products from petrochemicals, solvents, specialty lubricants, aviation fuel and LPG. The Mahul refinery had a capacity of 6 million tons per annum and it operated at 127% of the capacity in the year ending March 2000. It also had an installed capacity of 98000 MT of benzene, 17600 MT of Toluene, 90000 MT of lubricants, and 10950 MT of sulphur. It was the first Indian industrial unit to obtain ISO 9002 and ISO 14001 certification and the only Indian Refinery (and one of the 34 refineries worldwide) to achieve a Level 7 on the International Safety Rating System (ISRS).

BPCL's retail network was the third largest in the country with around 4,500 retail outlets (petrol pumps / gas stations), around 950 dealerships for kerosene and light diesel oil, and 1200 LPG distributors. It had 22 LPG bottling plants, 3 lube blending and filling plants, 6 port installations, 13 aviation service stations, 67 company operated depots and 23 dispatch units. It completed a 250 km long cross-country pipeline between Mumbai and Man mad in March 1998. It had a market share of around 22% in petroleum products and 20% in LPG. In 2000, the total sales grossed over 36,000 crores of rupees and 18.86 million tons of petroleum products. Industrial customers contributed to 27% of sales, LPG 7%, aviation fuel 3% and lubricants 0.5% of the total sales. The refinery and the marketing infrastructure are considered the best in the industry and most efficient.

Table 1: Performance Highlights of BPCL (unit Cr)

Year	2007-2008	2008-2009	2009-2010
Sales Turnover	121,684.07	145,392.07	133,749.10
Profit before tax	2,597.29	1,075.53	2,772.13
Profit after tax	1580.56	735.90	1,447.38
Earnings per share	48.94	17.53	45.15

Source: company annual reports

Oil & Natural Gas Company Limited:

Oil and Natural Gas Corporation Limited (ONGC) is an Indian state-owned oil and gas company headquartered in Dehradun, the capital of Uttaranchal (aka Utrakhhand). It is a Fortune Global 500 company ranked 413, [2] and

contributes 77% of India's crude oil production and 81% of India's natural gas production. Established on 14 August 1956 by Indian government which currently owns 74.14% equity stake in this company. ONGC is one of the largest publicly traded company in India by market

capitalization Oil and Natural Gas Corporation Ltd. (ONGC) has been playing an

Important role to meet the energy requirements of the country to meet the rapidly growing demand for petroleum products in the country. To meet growing energy requirements a New Exploration Licensing Policy (NELP) has been formulated by the Government of India. The Government of India gives emphasis for the exploration activity. At present, India's demand for petroleum products

is growing at a rapid rate and it would reach a level of

More than 200 MMT by 2008. Oil and Natural Gas Corporation Ltd. Is engaged in exploration and production activities. Based on the result of seismic survey, ONGC has proposed to drill initially one exploratory well covering an area of 210 sq. km and based on the results of drilling one more well may be taken up for drilling for appraisal in the CY-ONN-2002/2 block in the eastern part of Ariyalur Pondicherry sub-basin of Cauvery Basin.

Table 2: Performance highlights of ONGC

Year	2007	2008	2009
Gross sales	86,267.57	701,835.15	4,824.56
Total Expenditure	47,127.68	70,301.89	78,273.32
Profit before tax	27,747.19	30,921.06	31,103.73
Net profit after tax	17,769.60	9,872.26	20,116.74
EPS share	83.08	92.91	92.35

Source: Company annual reports

Environmental policy of sample units:

BPCL Environmental Policy

BPCL is totally dedicated to capture the maximum standard in health, safety environment and security performances and in quest of good governance of the same, the Corporate HSE put in place HSE system during 2007. With the maximum concern and obligation for Health, Safety and Security of employees, customers, Contractors, all the stake holders and communities; they make sure that the atmosphere conservation at and around our workplaces / Locations. Similarly their establishments and premises at various locations viz Depots, Installations, Retail outlets and LPG plants practices HSE and S management system as per Corporate policy

Energy Refineries

As we all know that BPCL has taken very good action in energy refineries also. Which focuses that during 2007, Environment Cell has been created in HSE with a major emphasis on projects for combating Climate change. BPCL has already given a membership of Carbon Disclosure Project which is generally considered globally and has started working on Clean Development Mechanism (CDM) related projects. Corporate Sustainability Report for the year 2006-07 was published during 2007. For the year 2007-08, HSE took actions on Corporate Sustainability Report based on worldwide Reporting Initiative Norms where BPCL would be the former of the PSU to come out with such a report with A+ rating.

Greening in Refineries

- To produce clean automotive fuels by Upgrading Refinery
- To manufacturing environment friendly (ultra low sulphur, long life), lube oils.
- Use of new technology & modern instrumentation Improvement in Energy Efficiency of the Refinery & distribution operation
- Use of high emissivity ceramic coating on furnace refractory & radiant tubes to improve furnace efficiency & save fuel.
- Fugitive emissions should to be minimized.
- There should to be a high efficiency Sulphur Recovery Units (99 % efficiency)
- Treated effluent water recycling and re-use and rain water harvesting
- These are the basic initiatives, which are being taken by BPCL in their annual reports.

ONGC Environmental Policy

- ONGC has also worked for the environmental initiative So ONGC has launched Environmental Management System based on ISO 14001 which is further incorporated with Quality, Occupational Health and Safety management System (QHSE MS) for having holistic approach towards HSE issues of the company.
- The EMS of the individual installation is once in a while audited by Corporate/Sectoral HSE and reviewed by top management for improvement.

- To tackle any contingency and disastrous circumstances, Emergency Response Plan has been made at Installation level and there is Disaster Management Plan at Asset level.
- Mock drills are implemented at regularly basis for a variety of contingency circumstances for enhancing the efficiency of response plan.

Environmental Performance Indicators

Indicators are quantifiable aspects of organization, which give brief information on how the organization is working, For example, to assess a financial performance the indicators such as company turnover, Earning per share profit, and amount of products sold might be used. Indicators can also be used to calculate ecological impacts. Environmental performance indicators (EPIs) may help to recognize the most important ecological impacts, clarify, and communicate company's ecological goals and progress to employees and stakeholders. Indicators can be divided into two broad types:

1. Indicators which are relevant to all organizations – these include basic measurements for greenhouse gas emissions, waste and water use.
2. The main criteria used in selecting the suitable indicators are green relevance, international competability, and availability of the information provided by the indicator. The environmental indicators should:
 - provide a representative picture of environmental conditions and pressures on the environment;
 - be easy and easy to understand;
 - based on global standards and provide a basis for worldwide comparison; adequately documented and of known quality;
 - Updated at regular interval in accordance to reliable procedures.

Environmental Performance Indicators of sample units

Water Pollution:

Water pollution has become a major environmental problem in many countries. Surface and earth water pollution from the manufacturing and agricultural sectors are other significant problems. Acidification of surface waters from air pollution is a more current phenomenon and can be a danger to aquatic life. Water pollution is on attention because of for two main reasons. Perhaps the most important is the possibility of serious health problems: water pollution has been associated with outbreaks of waterborne diseases such as cholera and gastroenteric diseases. The major impact of water pollution on health can be either direct, through utilization of contaminated water, or indirect, through bio-accumulation of contaminants in fish. The major reason for attention is the effect of water pollution on the efficiency of water-based

economic activities such as fisheries and irrigation.

Green house gas emission

A greenhouse gas (sometimes abbreviated GHG) is a gas in an environment that absorbs and emits radiation within the thermal infrared range. This process is the basic cause of the greenhouse effect. The primary greenhouse gases in the Earth's environment are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. In the Solar System, the atmospheres of Venus, Mars, and Titan also contain gases that cause greenhouse effects. Greenhouse gases deeply affect the temperature of the Earth; without them, Earth's surface would be on average about 33 °C (59 °F) colder than at present. Environment concentrations of greenhouse gases are decided by the equality between sources (emissions of the gas from human activities and natural systems) and sinks (the removal of the gas from the atmosphere by conversion to a different chemical compound .The quantity of an emission (e.g. CO₂) remaining in the environment after a particular time is the "Airborne fraction".

Energy Conservation: Energy preservation refers to activities made to reduce energy consumption. Energy preservation can be achieved through effective energy use, in combination with decreased energy consumption and/or reduced consumption from conventional energy sources. Energy preservation act was passed on 2001. Energy conservation can result in improved financial capital, ecological quality, national security, personal security, and human comfort Individuals and organizations which are close consumers of energy choose to preserve energy to reduce energy costs and encourage economic security. Manufacturing and commercial users can boost energy use efficiency to maximize profit.

Data Collection

The present study is exploratory in nature. It is based on secondary data. Environmental reports of two Indian Petroleum & Gas company named ONGC and BPCL were studied for three consecutive years 2008, 2009 , 2010 has been examined to analyze their environmental disclosure practices .So we can say that an attempt has been made to examine the places of this disclosure in the annual report , its type and length. So mainly the quality of environmental disclosure have been checked for this study.

Table 3: Environmental Indicators of BPCL

Indicators	2007-2008	2008-2009	2009-2010
Green House Gas Emission	4,66935 thousand ton	4,676.19 thousand ton	4,337.15 thousand ton
Direct Energy Consumption at Marketing SBUs	20.86 million giga joules	30.5 million giga joules	19.33 million giga joules
Indirect Energy Consumption at Marketing SBUs	127.25 million giga joules	87.66 million giga joules	363.7 million giga joules
Water Withdrawal /reused (refineries)	3.24 million	3.20 million	3.28 million

Source: [http:// www. bharat petroleum .com](http://www.bharatpetroleum.com)

Table 4: Environmental Performance Indicators of ONGC

Indicators	2007-2008	2008-2009	2009-2010
Green House gas Emission	7.78 million ton	8.13 million	8.25 million
Direct energy Consumption	94248 (terra joule)	97130 (terra joul)	104858 (terra joul)
Indirect Energy Consumption	307048 (MWH)	272133 (MWH)	305595 (MWH)
Fresh water usage in onshore location	30.72 (Billion liters)	31.27 (billion litre)	28.47 (billion litre)

Source: <http://www.ONGC.in>

Analysis & findings: (Environmental Performance Indicators)

Our data analysis part shows the different environmental measures opted by the selected sample units. So our analysis part is conducted accordingly to our Objectives :

Analysis of Green gas emission

:As far as BPCL is concerned Its green house gas emission was extremely high in 2008-2009 as compare to other consequent years, and also we can conclude that it was extremely volatile in three years. And ONGC company exposure regarding GHG Emission was continuously increasing in three consequent years and was extremely high in 2009-2010.

Therefore, we can conclude that the rate of green house gas emission by BPCL was volatile continuously to the three consequent years but on the contrary, the rate of green house gas emission by ONGC was continuously increasing to the three consequent years.

Analysis of direct energy consumption or Indirect energy consumption

As far as BPCL is concerned its direct energy consumption was also extremely volatile in a three consequent years and was extremely high in 2008-2009 and extremely low in 2009-2010. So there was a high degree of volatility in the respect of energy consumption. Its indirect energy consumption was also extremely volatile in three consequent years.

As far as direct energy consumption of ONGC is concerned it was continuously increasing in a three consequent years, but on the contrary its indirect energy consumption was continuously volatile in three consequent years and it was extremely high in 2007-2008, and extremely low in 2008-2009.

So we can conclude that direct energy consumption by BPCL was for a some time period very low & for a some time period it was very high, but on the contrary direct energy consumption by ONGC was continuously increasing in a three consequent years. And ONGC

consumed energy more than the BPCL in a three consequent years .

Analysis of Fresh water use and Recycling & reused of the water

In the respect of water consumption BPCL used the water which is already used ,But the ONGC continuously used the fresh water ,son in this way BPCL is saving the environment sources by recycling the reused water but ONGC is not saving the environmental sources because of continuously utilization of fresh water.

Analysis of environmental policy of sample units:

As far as the environmental policy of both sample unit is concerned ,so we can easily conclude that environmental policy of both company is effective , efficient and vibrant . Both companies are putting their full efforts for securing the environment, so the comparison cannot be made between both sample units.

If we compare the BACK practices with the ONCE then we find that both company are providing the same information in a precise and. In a accurate manner but BPCL is saving the environment in respect to the water consumption and green house gas emission but ONGC also saving but in a low manner as compare to the BPCL

Conclusion

The findings of the study shows that BPCL & ONGC are totally concern about the major issues of environment that directly hamper the environmental performance and they are totally agree that they should pay their duty with their best by providing fully information about environmental related disclosure , but industries provide only less information about the environmental related issues , and also not providing the information related to the environmental expenditure and environmental cost . There is also a lacking of quantitative information, so there should be proper accounting pronouncements from the regulatory authorities & the information related to the environmental expenditure. It has not been mentioned in their annual reports. There is also a lacking of the information about environmental related disclosures in their annual reports.

Recommendations:

The findings of the study suggest that the disclosure of environmental related information is mandatory in nature & there should be proper accounting system which determine environmental related costs, liabilities and expenditure and the company should asked to submit the whole information regarding environmental issues & if the company is not providing the information then action must be taken by regulatory body against the company.

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